



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

## Commentary In Opposition to Proposed Pesticide Ordinance

---

Robert Mann &lt;rmann@lawndawg.com&gt;

Wed, Dec 21, 2016 at 1:56 PM

To: "thm@portlandmaine.gov" &lt;thm@portlandmaine.gov&gt;

Mr. Moon,

Please accept this e-mail as commentary on the proposed pesticide ordinance being discussed this evening.

I represent Lawn Dawg, Inc. a professional lawn care company which operates a branch office on Riverside Drive in Portland. We employ approximately ten local residents at this office, good-paying jobs that benefit the community well past the great work that they do in the field for us. We are immensely proud of our Portland branch which consistently ranks at the top of our evaluations companywide. We are fortunate to have many hundreds of satisfied customers in the City of Portland, customers that this proposed ordinance will seriously shortchange due to reliance upon incorrect assumptions and not being grounded in peer-reviewed science.

Lawn Dawg specifically, and the Professional Lawn Care industry generally, have been practicing an IPM approach to the care of our lawns for a very long time without having to be regulated into it. It is simply good business to minimize the amount of pesticides that you employ in order to attain the satisfaction of your customers. The profit motivation is strong – the free market acts as an incentive as pesticides are not cheap.

Professional lawn care companies are held accountable for the work that they do and the results that they attain, therefore we already follow Best Management Practices that have been formulated by Cooperative Extension Services that have turfgrass scientists on staff and endless research to back up their recommendations. Indeed, a half-dozen or more top universities in the nation have come together to compare research and studies and outline revised and updated BMPs for the application and use of fertilizer and pesticide products. We encourage you to await that release (anticipated Jan-Feb 2017) before taking any action not grounded in sound, peer-reviewed science.

**Prohibition does not work, it never has and it never will.** It did not work with alcohol in the 1920's, has not worked with the War on Drugs, has not worked with pesticides in the Province of Ontario and will not work here either.

It is simple economics applied to human nature: this ordinance does nothing to dampen demand for a healthy lawn, something that the average homeowner places value upon. People place great pride in their homes and a healthy lawn is part of that home. Ordinances such as this have only one true result – forcing the very people that are doing the work correctly from the marketplace – the professionals.

Absent the professional, licensed applicator to supply these services, homeowners will simply go to the local hardware and "big box" stores, buy and apply fertilizers and pesticides themselves without so much as reading the label.

This is what happened in Ontario. When pesticides for home lawn use were banned, the "big box" stores in the Buffalo, New York area were able to trace a huge increase in the sales of lawn care products back to credit cards with Ontario addresses. Residents crossed the border, loaded up their trunks and simply did the work themselves with no training, no regulation, no IPM and no Best Management Practices. Is this really what the City of Portland wants?

The professional applicator is already highly trained and highly regulated in order to safeguard the environment. Please consider this fact and briefly pause on this measure for the next 30-60 days and hear what the research and scientific community has to say about proper application and use.

Thank you.

**Bob Mann**

Corporate Agronomist

Landscape Industry Certified

Lawn Dawg, Inc.

39 Simon St., Unit 16 Nashua, NH 03060

Ph: (508) 322-3261

Email: [rmann@lawndawg.com](mailto:rmann@lawndawg.com)

Blog: <http://www.lawndawg.com/blog>

Website: <http://www.lawndawg.com>



CUSTOMER ACCOUNT WEBSITE



*Our mission is to provide the best service in our industry. Through our dedicated professionals, quality products, unwavering commitment to customer service and our environment, we treat every property as if it were our own.*



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

**Pesticide task force feedback**

1 message

**Donna Herczg** <donnaherczeg@gmail.com>

Wed, Dec 21, 2016 at 11:52 AM

Reply-To: donnaherczeg@gmail.com

To: thm@portlandmaine.gov

Dear Councilor Nick Mavodones and the Portland Pesticide Task Force,

Thank you for the opportunity to provide input to the Portland Pesticide Task Force as it debates the best approach to pesticide reform in the City. As a Portland City resident, I strongly encourage the Task Force to support the South Portland style draft ordinance, and oppose the draft IPM ordinance, as it doesn't set an organic standard (like the South Portland ordinance) and allows each individual applicator (whether licensed professional or uneducated homeowner) to pick whatever pesticides they feel are appropriate.

I urge this approach because I am very concerned about the health effects of pesticides on children, pets and other sensitive residents in the City, and do not want the City to continue allowing toxic pesticide use that harms pollinators and wildlife, and contaminates our water supply and unique coastal ecosystem. It is clear from other communities in Maine and the growing organic lawn care industry that there are effective and economical methods of creating a beautiful landscape without the use of toxic registered pesticides. I urge the Task Force to reject half-measures like the draft IPM ordinance, and keep Portland at the cutting edge of pesticide-reform and environmental sustainability.

Again, thank you for the opportunity to voice my support for a South Portland style draft ordinance.

Sincerely,

Donna Herczg  
173 Longfellow St.  
Portland, ME 04103

# NEPMA

NEW ENGLAND PEST MANAGEMENT ASSOCIATION, INC.

December 21, 2016

Mr. Troy Moon  
Sustainability Coordinator  
City of Portland  
389 Congress Street  
Portland, ME 04101

Dear Mr. Moon:

As a representative of the structural pest management industry in Maine, protecting people and property from dangerous and deadly pests; I respectfully submit the following comments, questions and concerns in response to draft # 3 of the City of Portland proposed pesticide ordinance.

First and foremost I remain opposed to any ordinance that restricts the ability of licensed pest management professionals from being able to use IPM as a means of controlling pests, which when necessary and appropriate includes the use of a pesticide. That pesticide may be either natural or synthetic, and potentially losing any of the tools necessary to protect our clients home, property and health is a serious concern to me.

Specifically, I find some parts of the ordinance excessive, unclear and possibly even contradictory.

Section 34-4 is completely unworkable for the structural pest management industry. Mandating the use of an exempt product first and then to be required to wait for that product to be shown as ineffective before being allowed to use another non-synthetic product and in a last resort possibly being permitted to finally use a potentially more effective synthetic pesticide by applying for a waiver. In the structural pest management industry our customers need their pest infestation treated yesterday, not two weeks from today. As written this will be ineffective and harmful to those with serious pest infestations. This cannot and will not function for the structural pest management industry while we have homeowners who still have pest invading their homes and we are not able to resolve their pest issues in a timely manner.

A potential consequence is that those homeowners may be very likely to go to the local hardware or big box store and purchase a product to do this themselves rather than waiting for the licensed professional to comply with the requirements of this proposed ordinance. Yet we have to go

through additional steps of applying for a waiver if both the exempt and other non-synthetic materials have failed. The longer the home or business owner is dealing with pest activity that is entering from the surrounding area the greater the risk that they will go the DIY route. These homeowners are untrained and unfamiliar with how to use the materials. They typically are not familiar with and may well be unlikely to read the label for directions and probably do not have the proper required PPE (personal protective equipment) required by the label.

I also find this section possibly contradictory and confusing when looked at in light of section 34-9 (c) 3 Exemptions. "in health and safety applications "As a licensed professional structural pest management professional I believe that every exterior application we perform is covered by this language. According to the National Pest Management Association 80% of interior pest activity is caused by a pest entering a structure from the exterior. Regardless of the pest, once they enter a building they pose a risk of creating health issues (see EPS list of pest of significant health importance @ <https://www.epa.gov/sites/production/files/2014-04/documents/pr2002-1.pdf> or causing structural damage. So with no definition for the term "in health and safety applications" I would view the exterior structural use of pesticides as being exempt from this ordinance.

Is that the intent as was stated at the last task force meeting? We would appreciate some clarity on this issue and how licensed and certified structural pest management professionals will be treated if this ordinance were enacted.

I believe that while the task force has made a serious effort to compile an ordinance that would be acceptable to all members and is coming up against a deadline to submit a draft of a proposed ordinance to the committee that the reality is that there is no consensus among the committee members, every draft that has been presented has flaws, questions and possibly contradictory language that makes them confusing and unworkable. The reality is that pesticides play an important and vital role in protecting our community.

Based on this I believe the Task Force should report back to the sustainability committee that they have been unable to draft a satisfactory and workable ordinance.

Respectfully,

Mike Peaslee  
Technical Manager  
Associate Certified Entomologist  
**Modern Pest Services**  
Brunswick, Maine 04011  
207-721-0167 Office  
207-632-0318 Cell  
[mikepeaslee@modernpest.com](mailto:mikepeaslee@modernpest.com)



# BEYOND PESTICIDES

701 E Street, SE ■ Washington DC 20003  
202-543-5450 phone ■ 202-543-4791 fax  
info@beyondpesticides.org ■ www.beyondpesticides.org

Statement of  
Jay Feldman, Executive Director  
Beyond Pesticides  
on  
Pesticide Draft Ordinance  
to  
Portland, Maine Pesticide Task Force

December 21, 2016

Thank you for the opportunity to address the Portland Pesticide Task Force. I am Jay Feldman, Executive Director of Beyond Pesticides, a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to improve protections from pesticides and promote alternative pest management strategies that reduce or eliminate a reliance on toxic pesticides. Our membership spans the 50 states, the District of Columbia, and groups around the world. We are submitting this statement on behalf of our supporters who are residents of Portland.

## **We Support Ordinance Language Like South Portland's, Which Eliminates Toxic Pesticide Use**

Beyond Pesticides strongly encourages the Portland Pesticide Task Force to recommend that the City Council adopt a pesticide ordinance similar to the policy recently passed in South Portland. It is this approach to pesticide reform that will effectively stop the unnecessary use of hazardous pesticides applied for aesthetic purposes. This approach to pesticide law is critical to the protection of community health, particularly children and elderly, and vulnerable population groups that suffer from compromised immune and neurological systems, cancer, reproductive problems, respiratory illness and asthma, Parkinson's, Alzheimer's, diabetes, and learning disabilities in and around the City of Portland. We urge the Task Force to embrace an organic systems approach, which incentivizes a transition to sustainable practices, and thus keeps the City's residents and visitors, as well as the local environment, protected from the ongoing exposure to hazardous pesticides.

The approach adopted by the City our South Portland embraces such a systems approach to land management that has been successfully adopted in organic agricultural production on a commercial scale, large and small, as well as other communities. It recognizes that toxic

chemicals are not needed to achieve pest management goals if sustainable soil management practices are adopted. At the same time, it allows a list of some synthetic materials that are deemed not harmful to human health and the environment, compatible with organic systems (meaning they do not harm the soil biology and biodiversity), and are needed (or essential).

The presumption in organic systems is that it is not necessary to introduce a synthetic pesticide “as a last resort” (language in the proposed draft ordinance #3) because it opens the door to toxic chemicals that contribute to a decline in soil health by killing or depressing beneficial organisms, such as beneficial fungi and bacteria, and sets in motion a pesticide treadmill effect. The result is an imbalance in the soil ecology, reduced ecosystem services, and an increased need for pesticides. To incentive the adoption of practices that nurture nature, resulting in healthier and more resilient turf that is better able to withstand disease, infestation, and drought conditions, the City of South Portland’s ordinance utilizes the experience of soil management practices central to (i) organic law that National List of approved and prohibited substances, 7 U.S.C. 6517, under U.S. Department of Agriculture regulations, and (ii) 40 CFR 152.25 minimum risk pesticides under U.S. Environmental Protection Agency (EPA) regulations. From a practical standpoint, these standards provide for the allowance of numerous materials, including the following list categories of allowed materials. While organic is not intended to be a product or chemical substitution program, there may be times, especially during transition from chemical-intensive practices to an organic system, when “allowed materials,” which requires definition under the proposed ordinance, are necessary.

Sample of Available Products Under Allowed List Criteria (created by Beyond Pesticides)				
Active Ingredient	Sample Product	Category	Pest Controlled	Regulatory Status
Bacillus thuringiensis	Safer Brand Garden Dust and Caterpillar Killer	Insecticide	Worms and Caterpillars	Organic
Bacillus thuringiensis	Monterey B.t.	Insecticide	Worms and Caterpillars	Organic
Nematodes: Steinernema carpocapsae	Environmental Factor Inc	Insecticide	Fleas, sod webworms, term	25b
Nematodes: Steinernema feltiae	BioLogic	Insecticide	Fungus gnats, leafminers, t	25b
Nematodes: Steinernema glaseri	Environmental Factor Inc	Insecticide	Japanese beetle, june bugs	25b
Milky Spore	St Gabriel Organic	Insecticide	Japanese beetle grubs	Organic
Chromobacterium subtsugae	Grandevo	Insecticide	Sucking insects, mites	Organic
Cedar Oil	CedarCure	Insecticide	Grubs, Ants, Crickets, Earwi	25b
Diatomaceous Earth	Perma-guard	Insecticide	fleas, ticks, beetles, other i	Organic
Potassium Salt of Fatty Acids	Safer Insect Killing Soap	Insecticide	Soft bodied insects, incudir	Organic
Neem Oil/Azadirachtin	Azatrol	Insecticide/Miticide	Wide range of insects	Organic
Neem Oil/Azadirachtin	70% Neem Oil	Fungicide/Insecticide	Black spot, powdery milde	Organic
Essential Oils (various)	EcoSmart Brands	Insecticide	Range of insects	25b
Essential Oils (Cinnamon/clove)	Blizzard Organic Fungicide	Fungicide	Fungal diseases, including j	25b
Potassium Bicarbonate	Greencure Fungicide	Fungicide	Alternaria leaf spot, Anthra	25b
Potassium Salt of Fatty Acids	MPEDE	Fungicide/Insecticide	Chinch bugs, cutworms, fle	Organic
Ammoniated Pelargonic Salts	AXXE	Herbicide (nonselective postemergent)	Range of common weeds	Organic
Ammoniated Soap of Fatty Acids	Final-San-O	Herbicide (nonselective postemergent)	Range of common weeds (s	Organic
Sodium Lauryl Sulfate, 2-Phenethyl Prop	EcoSmart Weed and Grass K	Herbicide (nonselective postemergent)	Range of common weeds	25b
D-limonene	Avenger Weed Killer	Herbicide (nonselective postemergent)	Range of annual weeds	Organic
Essential Oil (clove)	Phydura	Herbicide (nonselective postemergent)	Nonselective herbicide for	25b
Acetic Acid	SummerSet AllDown	Herbicide (nonselective postemergent)	Nonselective herbicide for	Organic
Corn steep liquor, clove oil, wintergreen	Halo	Herbicide (selective postemergent)	Selective postemergent he	25b
Soybean Oil	Preem	Herbicide (nonselective preemergent)	Preemergent herbicide for	25b

Draft ordinance #3, rather than provide allowance for both EPA minimum risk and non-synthetic materials, unnecessarily separates the two sets of materials and applies two different sets of criteria for their use.

While we support a South Portland style ordinance, if the Task Force prefers to work from draft #3, we suggest:

- (i) incorporating "allowed materials" into the use allowance granted under 34-4(a)(2), and
- (ii) splitting 34-4(a)(3) into two parts.
  - (a) The first part, 34-4(a)(3)(i-iv), should be added to requirements for the City-wide education component, as these requirements will help both homeowners and commercial operators understand how to properly prevent and manage landscape pests.
  - (b) The second part, 34-4(a)(3)(v), should be amended to be its own section, requiring commercial pesticide applicators to document all "allowed materials" and pesticide applications made within the City.

Further, the proposed language in draft #3 incorporates language that would most certainly undermine the adoption of sustainable practices. Certain language in the draft, such as "In circumstances where pesticides must be used, a minimum amount of pesticides needed to effectively control pests. . .," belies the underlying principles of an organic system that the ordinance is needed to address. Clearly, exceptions to the disallowance of toxic materials across the board must be limited to emergency conditions only, which must be defined as an imminent threat to public health that occurs when unpredictable outbreak of a poisonous, stinging, or biting insect, or poisonous or stinging plant that threatens public health. We urge that this language in 34-4 ["In circumstances where pesticides must be used, a minimum amount of pesticides needed to effectively control pests. . .,"] be removed so that it does not create confusion as to the intent and purpose of the law.

The changes we suggest are reflected below:

#### **34-1. Definitions.**

ADD:

Allowed materials are defined as (i) a pesticide classified by the United States Environmental Protection Agency as an exempt material pursuant to 40 CFR 152.25, as amended from time to time; (ii) a pesticide including no active ingredients other than those published in the National List at 7 C.F.R. 205.601, as amended from time to time; or (iii) a non-synthetic material, except those that are prohibited at 7 C.F.R. 205.602.

#### 34-4. Pest Management.

(a) It is hereby the policy of the City of Portland to prioritize land care practices that do not use pesticides to control pests. ~~In circumstances where pesticides must be used, the minimum amount of pesticides needed to effectively control pests in all areas of application on privately and publicly owned land within the City shall be used.~~ Any pest management activities within the City on privately and publicly owned land shall be conducted ~~in accordance with the following procedures~~ only with allowed materials, including:

1. A pesticide classified by the United States Environmental Protection Agency as an exempt material pursuant to 40 CFR 152.25, as amended from time to time;
2. A pesticide including no active ingredients other than those published in the National List at 7 C.F.R 205.601, as amended from time to time; or
3. A non-synthetic material, except those that are prohibited at 7 C.F.R. 205.602.

1. ~~Non-pesticide management tactics shall be used first;~~
2. ~~If non-pesticide management tactics prove ineffective, pesticides listed on the FIFRA Minimum Risk List may then be used;~~
3. ~~If the pesticides listed on the FIFRA Minimum Risk List prove ineffective, other non-synthetic pesticides may be used so long as the following steps are taken:~~

Move to 34.7 Education i, ii, iii, and iv, as a new subsection (d): The City shall conduct a public education program to assist members of the public conduct effective organic management practices that encourage land managers to:

- i. Monitor for pest presence or conditions conducive to a pest outbreak;
- ii. Identify the pest specifically;
- iii. Determine that the pest population exceeds acceptable safety, economic or aesthetic threshold levels;
- iv. Utilize control measures that have been demonstrated to be practicable, effective and affordable; and

DRAFT

b) Commercial lawn care operators must:

1. A written document describing how the ~~licensed applicator~~ commercial operator treated the problem is kept and submitted annually in the month of \_\_\_\_\_ to the Pesticide Oversight Committee. Information in the written document shall include the type of pest treated for, steps taken prior to treatment, and all information required by the Maine Board of Pesticides Control Pesticide Applicator Log; and

DELETED (covered by Section 34.8. Waivers.

- ~~2. Synthetic pesticides shall be used only as a last resort. If synthetic pesticides must be used, such use shall be allowed only if a waiver is granted for such use by the City Manager or his or her designee as described in §34-8.~~

### **Adverse Effects of Chemical Pesticides**

Our country's appetite for pesticides raises grave concerns about the effects of chemical-intensive practices, our relationship to nature, chemical effects at the cellular level, and insect and weed resistance to chemical controls. Of the 30 most commonly used lawn pesticides, 16 are linked to cancer, 17 are endocrine disruptors, 21 are reproductive toxicants, 12 are linked to birth defects, 14 are neurotoxic, 25 cause kidney liver effects, and 26 are irritants.<sup>1</sup> The U.S. Geological Survey has linked pesticide use in urban areas to runoff and pesticide contamination of local waterways.<sup>2</sup> Of the 30 most commonly used lawn pesticides, 20 have a high potential to leach into waterways, 19 have been detected seeping into groundwater, 22 are toxic to birds, 14 are toxic to mammals, 29 are toxic to bees, and all 30 of these chemicals present toxicity concerns for fish or other aquatic organisms.<sup>3</sup>

Rachel Carson wrote in *Silent Spring*, "By their very nature, chemical controls are self-defeating, for they have been devised and applied without taking into account the complex biological systems against which they have been blindly hurled. The chemicals may have been pretested against a few individual species, but not against living communities." She warned us to protect the diverse organisms that make up a healthy ecosystem, including bees, birds, butterflies and other pollinators.

### **Pesticide-Induced Diseases**

The scientific literature documents elevated rates of chronic diseases among people exposed to pesticides, with increasing numbers of studies associated with both specific illnesses and a

---

<sup>1</sup> Health Effects of 30 Commonly Used Pesticides. 2015. Beyond Pesticides. <http://www.beyondpesticides.org/lawn/factsheets/30health.pdf> (See Appendix C for a fully cited copy of the fact sheet).

<sup>2</sup> United States Geological Survey. 2007. Pesticides in US Streams and Groundwater. *Environmental Science and Technology*. [http://water.usgs.gov/nawqa/pnsp/pubs/files/051507.ESTfeature\\_gilliom.pdf](http://water.usgs.gov/nawqa/pnsp/pubs/files/051507.ESTfeature_gilliom.pdf).

<sup>3</sup> Environmental Effects of 30 Commonly Used Lawn Pesticides. 2015. Beyond Pesticides. <http://www.beyondpesticides.org/lawn/factsheets/30enviro.pdf> (See Appendix D for a fully cited copy of the fact sheet).

range of illnesses. Beyond Pesticides' Pesticide-Induced Diseases Database<sup>4</sup> documents over 750 studies linked to human health effects. Of which, there are 359 studies on cancer; 107 studies on sexual and reproductive dysfunction; 102 studies on Parkinson's disease; 87 studies on learning and developmental disorders; 33 studies on birth defects; 32 studies on asthma; 18 studies on diabetes; and 12 studies on Alzheimer's disease.

The studies in the database show that our current approach to restricting pesticide use through risk assessment-based mitigation measures is not working. This failed human experiment must be ended. The warnings of those who have expressed concerns about risk assessment, such as U.S. Environmental Protection Agency (EPA) Administrator under Presidents Nixon and Reagan, William Ruckelshaus, have been borne out by three decades of use and study. Mr. Ruckelshaus in 1984 said, "We should remember that risk assessment data can be like the captured spy: If you torture it long enough, it will tell you anything you want to know." EPA's risk assessment fails to look at chemical mixtures, synergistic effects, certain health endpoints (such as endocrine disruption), disproportionate effects to vulnerable population groups, and regular noncompliance with product label directions. These deficiencies contribute to its severe limitations in defining real world poisoning, as captured by epidemiologic studies in the database. [See Appendix A for additional health effect information, and Appendix B for failures of the EPA regulatory system.

#### **A Systems Approach without Toxic Chemicals**

Chemical-intensive turf and landscape management programs are generally centered on a synthetic product approach that continually treats symptoms with toxic chemicals, rather than focuses on the root causes of pest problems, which lies in the soil. Experience finds that toxic pesticides are not needed for successful turf management. Rather, a systems approach incorporates preventive steps based on building soil biomass to improve soil fertility and turf grass health, organic products based on a soil analysis that determines need, and specific cultural practices, including mowing height, aeration, dethatching, and over-seeding.

Organic turf management, which meets the standards of the *Organic Foods Production Act*, is a "feed-the-soil" approach that centers on natural, organic fertilization, microbial inoculants, compost teas, and compost topdressing as needed. This approach builds a soil environment rich in microbiology that will produce strong, healthy turf able to withstand stress. The aim of a natural approach to land care is not to simply swap one herbicide or insecticide for another, but instead build a soil environment rich in microbial diversity that will produce strong, healthy landscapes able to withstand stress from weeds, pests, fungus and other disease.

#### **Cost of Organic is on Par with Conventional in the Long Term**

Cost of implementing an organic systems approach is not likely to be substantially more than current costs, and there is likely to be savings in the long term.

In considering cost, local governments should reflect on the externalities associated with pesticide use, including its effect to reduce the risk of exposure to carcinogens, prevent the

---

<sup>4</sup> Beyond Pesticides. 2016. Pesticide Induced Diseases Database.  
<http://www.beyondpesticides.org/resources/pesticide-induced-diseases-database/overview>.

contamination of groundwater, and the poisoning of wildlife. These are costs that residents are already paying for, through hospital visits, expensive clean-ups, and the need for species conservation and habitat restoration. A natural land care program is not only generally on par with and in the long run less expensive than a conventional chemical based program, it also reduces and in many cases eliminates costly externalities borne by the community at large.

The following provide select examples of the experience of towns and institutions with organic land care programs:

- There is report produced by nationally renowned turfgrass expert and Beyond Pesticides' board member Chip Osborne in coordination with Grassroots Environmental Education, which looks specifically at the cost of conventional and organic turf management on school athletic fields. The report concludes that once established, a natural turf management program can result in savings of greater than 25% compared to a conventional turf management program.<sup>5</sup>
- There is also the research from Harvard University which determined that, ultimately, total operating costs of its organic maintenance program are expected to be the same as the conventionally based program. In a 2009 New York Times article,<sup>6</sup> the school determined that irrigation was reduced by 30%, saving 2 million gallons of water a year as a result of reduced irrigation needs. The school was also spending \$35,000/year trucking yard waste off site. The university can now use those materials for composting and has saved an additional \$10k/year due to the decreased cost and need to purchase fertilizer from off-campus sources.<sup>7</sup>
- The Department of Energy and Environmental Protection in the state of Connecticut, which itself has a successful ban on pesticide use in school playing fields up to 8th grade, notes in its information on organic lawn care that "If your lawn is currently chemically dependent, initially it may be more expensive to restore it. But in the long term, an organic lawn will actually cost you less money. Once established, an organic lawn uses less water and fertilizers, and requires less labor for mowing and maintenance."<sup>8</sup>
- The experience in Reno, NV may also be instructive. As part of their pesticide-free pilot program there, the Parks Department stated, "There will be no cost implications as staff will implement changes within its adopted budget."<sup>9</sup>

### Local Success Stories

Beyond Pesticides has seen first-hand the success of this approach in communities throughout

---

<sup>5</sup> Osborne, Charles and Doug Wood. 2010. A cost Comparison of Conventional (Chemical) Turf Management and Natural (Organic) Turf Management on School Athletic Fields. Grassroots Environmental Education. <http://www.grassrootsinfo.org/pdf/turfcomparisonreport.pdf>

<sup>6</sup> Raver, Anne. 2009. The Grass is Greener at Harvard. [http://www.nytimes.com/2009/09/24/garden/24garden.html?\\_r=2](http://www.nytimes.com/2009/09/24/garden/24garden.html?_r=2).

<sup>7</sup> Harvard University. 2009. Harvard Yard Soils Restoration Project Summary Report. [http://www.slideshare.net/harvard\\_uos/harvard-yard-soils-restoration-project-summary-report-22509-4936446](http://www.slideshare.net/harvard_uos/harvard-yard-soils-restoration-project-summary-report-22509-4936446).

<sup>8</sup> Connecticut Department of Energy and Environmental Protection. 2016. Organic Land Care: Your neighbors will "go green" with envy. <http://www.ct.gov/deep/cwp/view.asp?a=2708&q=382644#Expensive>.

<sup>9</sup> City of Reno, Nevada Staff Report. 2015. Update, discussion and potential approval of a Pesticide-Free Parks program for twelve City Parks.

the country. Beyond Pesticides' Map of Pesticide Reform Policies highlights over 115 communities that have enacted some level of lawn and landscape pesticide reduction policy.<sup>10</sup>

These examples prove in practice that organic, least-toxic methods of managing landscapes are feasible and cost-effective for local governments of all sizes. As land managers are trained and familiarize themselves with organic methods and new practices and products continue to emerge, more and more communities are moving toward common-sense, sustainable approaches to land care. These practices do not put humans, pets, and the environment, particularly pollinators and other wildlife at risk of non-target pesticide impacts, in unnecessary danger.<sup>11</sup> Furthermore, the current and past pesticide testing and labeling protocols used by EPA have failed to address the full range of hazards and allow for too many data gaps to adequately protect against harm. The hazards and uncertainties that put people and the environment in harm's way are, in our view, unreasonable given that they are unnecessary to achieve beautiful lawns and gardens.

### **The Canadian Experience**

A 2014 study published in the journal *Challenges* analyzes changes in the detection of herbicides 2,4-D, dicamba, and mecoprop in urban streams after the implementation of a non-essential pesticide ban in Ontario, Canada. Results show that concentrations decreased from 16% to 92%, depending on the stream and herbicide. Although the study was not able to determine whether the source reduction came from residential or commercial pesticide use, prior surveys indicate that the three pesticides tested accounted for 51% of the total amount of pesticides used by professional lawn services in the province. The study concludes that decreases in urban stream concentration of these herbicides was a likely result of a combination of restrictions on sale and use, as well as increased public awareness of pesticide issues.<sup>12</sup>

A 2011 study published in *Environmental Health* assessed changes in resident practices associated with the implementation of the cosmetic/non-essential pesticide bylaw by a municipal health department in Toronto, Ontario, Canada. Implementation indicators documented multiple municipal health department activities and public involvement in complaints from commencement of the educational phase. During the enforcement phases only 40 warning letters and seven convictions were needed. The number of lawn care companies increased. Among survey respondents, awareness of the bylaw and the Natural Lawn campaign reached 69% and 76% respectively by 2008. Substantial decreases in the proportion of households applying pesticides (25 to 11%) or hiring lawn care companies for application (15 to 5%) occurred. Parallel absolute increases in use of natural lawn care methods occurred among households themselves (21%) and companies they contracted (7%). The

---

<sup>10</sup> Beyond Pesticides Map of Pesticide Reform Policies. 2016.

<https://www.google.com/maps/d/viewer?mid=1VLpVWvifO2JOrgxf1-d1DLyDruE&ll=39.03573413957711%2C-94.19459570507814&z=5>.

<sup>11</sup> (See Appendix A for additional information about these issues).

<sup>12</sup> Todd, A.; Struger, J. Changes in Acid Herbicide Concentrations in Urban Streams after a Cosmetic Pesticides Ban. *Challenges* 2014, 5, 138-151.

researchers concluded that bylaws or ordinances implemented through education and enforcement are a viable policy option for reducing urban cosmetic pesticide use.<sup>13</sup>

Thank you for the opportunity to present this statement to local leaders in Portland. We appreciate your consideration of the information and citations presented here in support of organic and sustainable turf and landscape practices. We remain available to discuss the importance and finer details of this issue at any time.

---

<sup>13</sup> Cole, D.C.; Vanderlinden, L.; Leah, J.; Whate, R.; Mee, C.; Bienefeld, M.; Wanigaratne, S.; Campbell, M. Municipal bylaw to reduce cosmetic/non-essential pesticide use on household lawns—A policy implementation evaluation. *Environ. Health* 2011, 10.

## Appendix A. Key Areas of Concern

### Children's Vulnerability

Children face unique dangers from pesticide exposure. The National Academy of Sciences reports that children are more susceptible to chemicals than adults and estimates that 50% of lifetime pesticide exposures occur during the first five years of life.<sup>14</sup> In fact, studies show children's developing organs create "early windows of great vulnerability" during which exposure to pesticides can cause great damage.<sup>15</sup> Additionally, according to researchers at the University of California-Berkeley School of Public Health, exposure to pesticides while in the womb may increase the odds that a child will have attention deficit hyperactivity disorder (ADHD).<sup>16</sup>

As EPA points out in its document, *Pesticides and Their Impact on Children: Keep Facts and Talking Points*:<sup>17</sup>

- "Due to key differences in physiology and behavior, children are more susceptible to environmental hazards than adults."
- "Children spend more time outdoors on grass, playing fields, and play equipment where pesticides may be present."
- "Children's hand-to-mouth contact is more frequent, exposing them to toxins through ingestion."

In 2012, the American Academy of Pediatrics (AAP) released a landmark policy statement, *Pesticide Exposure in Children*, on the effects of pesticide exposure in children, acknowledging the risks to children from both acute and chronic effects.<sup>18</sup> AAP's statement notes that, "Children encounter pesticides daily and have unique susceptibilities to their potential toxicity." The report discusses how kids are exposed to pesticides every day in air, food, dust, and soil. Children also frequently come into contact with pesticide residue on pets and treated lawns, gardens, and indoor spaces.

Pesticides, such as glyphosate and its formulated products (Roundup) and 2,4-D, both widely used on turf and lawns, can be tracked indoors resulting in long-term exposures. Scientific studies show that pesticides, like 2,4-D, that are applied to lawns drift and are tracked indoors

---

<sup>14</sup> National Research Council, National Academy of Sciences. 1993. *Pesticides in the Diets of Infants and Children*, National Academy Press, Washington, DC: 184-185.

<sup>15</sup> Landrigan, P.J., L Claudio, SB Markowitz, et al. 1999. "Pesticides and inner-city children: exposures, risks, and prevention." *Environmental Health Perspectives* 107 (Suppl 3): 431-437.

<sup>16</sup> Marks AR, Harley K, Bradman A, Kogut K, Barr DB, Johnson C, et al. 2010. Organophosphate Pesticide Exposure and Attention in Young Mexican-American Children: The CHAMACOS Study. *Environ Health Perspect* 118:1768-1774.

<sup>17</sup> See: <https://www.epa.gov/sites/production/files/2015-12/documents/pest-impact-hsstaff.pdf>

<sup>18</sup> Roberts JR, Karr CJ; Council On Environmental Health. 2012. Pesticide exposure in children. *Pediatrics*. 2012 Dec; 130(6):e1765-88.

where they settle in dust, air and on surfaces and may remain in carpets.<sup>19,20</sup> Pesticides in these environments may increase the risk of developing asthma, exacerbate a previous asthmatic condition, or even trigger asthma attacks by increasing bronchial hyper-responsiveness.<sup>21</sup> This is especially important as infants crawling behavior and proximity to the floor account for a greater potential than adults for dermal and inhalation exposure to contaminants on carpets, floors, lawns, and soil.<sup>22</sup>

A study published in the Journal of the National Cancer Institute finds that household and garden pesticide use can increase the risk of childhood leukemia as much as seven-fold.<sup>23</sup> Similarly, a 2010 meta-analysis on residential pesticide use and childhood leukemia finds an association with exposure during pregnancy, as well as to insecticides and herbicides. An association is also found for exposure to insecticides during childhood.<sup>24</sup>

Prenatal exposures to pesticides can also have long-lasting impacts on infants and children. Herbicides, like glyphosate, can adversely affect embryonic, placental and umbilical cord cells, and can impact fetal development. Preconception exposures to glyphosate were found to moderately increase the risk for spontaneous abortions in mothers exposed to glyphosate products.<sup>25</sup> One 2010 analysis observed that women who use pesticides in their homes or yards were two times more likely to have offspring with neural tube defects than women who did not use pesticides.<sup>26</sup> Studies also find that pesticides, like 2,4-D, can also pass from mother to child through umbilical cord blood and breast milk.<sup>27,28</sup>

Biomonitoring testing has also documented pesticide residues in children. Residues of lawn pesticides, like 2,4-D and mecoprop, were found in 15 percent of children tested, ages three to seven, whose parents had recently applied the lawn chemicals. Breakdown products of organophosphate insecticides were present in 98.7 percent of children tested.<sup>29</sup> In one study,

---

<sup>19</sup> Nishioka, M., et al. 1996. Measuring lawn transport of lawn-applied herbicide acids from turf. *Env Science Technology*, 30:3313-3320.

<sup>20</sup> Nishioka, M., et al. 2001. "Distribution of 2,4-D in Air and on Surfaces Inside Residences. *Environmental Health Perspectives* 109(11).

<sup>21</sup> Hernández, AF., Parrón, T. and Alarcón, R. 2011. Pesticides and asthma. *Curr Opin Allergy Clin Immunol*.11(2):90-6.

<sup>22</sup> Bearer, CF. 2000. The special and unique vulnerability of children to environmental hazards. *Neurotoxicology* 21: 925-934; and Fenske, R., et al. 1990. Potential Exposure and Health Risks of Infants following Indoor Residential Pesticide Applications. *Am J. Public Health*. 80:689-693.

<sup>23</sup> Lowengart, R. et al. 1987. Childhood Leukemia and Parent's Occupational and Home Exposures. *Journal of the National Cancer Institute*. 79:39.

<sup>24</sup> Turner, M.C., et al. 2010. Residential pesticides and childhood leukemia: a systematic review and meta-analysis. *Environ Health Perspect* 118(1):33-41.

<sup>25</sup> Arbuckle, T. E., Lin, Z., & Mery, L. S. (2001). An Exploratory Analysis of the Effect of Pesticide Exposure on the Risk of Spontaneous Abortion in an Ontario Farm Population. *Environ Health Perspect*, 109, 851-857.

<sup>26</sup> Brender, JD., et al. 2010. Maternal Pesticide Exposure and Neural Tube Defects in Mexican Americans. *Ann Epidemiol*. 20(1):16-22.

<sup>27</sup> Pohl, HR., et al. 2000. Breast-feeding exposure of infants to selected pesticides. *Toxicol Ind Health*. 16:65-77.

<sup>28</sup> Sturtz, N., et al. 2000. Detection of 2,4-dichlorophenoxyacetic acid (2,4-D) residues in neonates breast-fed by 2,4-D exposed dams. *Neurotoxicology* 21(1-2): 147-54.

<sup>29</sup> Valcke, Mathieu, et al. 2004. Characterization of exposure to pesticides used in average residential homes with children ages 3 to 7 in Quebec. *National Institute of Public Health, Québec*.

children in areas where glyphosate is routinely applied were found to have detectable concentrations in their urine.<sup>30</sup> While glyphosate is excreted quickly from the body, it was concluded, "a part may be retained or conjugated with other compounds that can stimulate biochemical and physiological responses." A 2002 study finds children born to parents exposed to glyphosate show a higher incidence of attention deficit disorder and hyperactivity.<sup>31</sup>

### Pesticides and Pets

Studies find that dogs exposed to herbicide-treated lawns and gardens can double their chance of developing canine lymphoma (1) and may increase the risk of bladder cancer in certain breeds by four to seven times (2).

- (1) Scottish Terriers exposed to pesticide-treated lawns and gardens are more likely to develop transitional cell carcinoma of the bladder, a type of cancer.<sup>32</sup>
- (2) "Statistically significant" increase in the risk of canine malignant lymphoma in dogs when exposed to herbicides, particularly 2,4-D, commonly used on lawns and in "weed and feed" products.<sup>33</sup>

### Adverse Effects to Wildlife

While the data is pouring in on intersex species in waterways that surround urban and suburban areas and there are certainly a mix a factors, the contribution of runoff from suburban landscapes are seen as an important contributor. In *Suburbanization, estrogen contamination, and sex ratio in wild amphibian populations*, the authors from Yale University's School of Forestry and Environmental Studies and the U.S. Geological Survey (USGS) find the following: "While there is evidence that such endocrine disruption can result from the application of agricultural pesticides and through exposure to wastewater effluent, we have identified a diversity of endocrine disrupting chemicals within suburban neighborhoods. Sampling populations of a local frog species, we found a strong association between the degree of landscape development and frog offspring sex ratio. Our study points to rarely studied contamination sources, like vegetation landscaping and impervious surface runoff, that may be associated with endocrine disruption environments around suburban homes."<sup>34</sup>

---

<sup>30</sup> Acquavella, J. F., et al. (2004). Glyphosate Biomonitoring for Farmers and Their Families: Results from the Farm Family Exposure Study. *Environ Health Perspect.* 112(3), 321-326.

<sup>31</sup> Cox C. 2004. *Journal of Pesticide Reform*. Vol. 24 (4) citing: Garry, V.F. et al. 2002. "Birth defects, season of conception, and sex of children born to pesticide applicators living in the Red River Valley of Minnesota." *Environ. Health Persp.* 110 (Suppl. 3):441-449.

<sup>32</sup> Hayes, H. et al., 1991. "Case-control study of canine malignant lymphoma: positive association with dog owner's use of 2,4-D acid herbicides," *Journal of the National Cancer Institute*, 83(17):1226.

<sup>33</sup> Glickman, Lawrence, et al. 2004. "Herbicide exposure and the risk of transitional cell carcinoma of the urinary bladder in Scottish Terriers," *Journal of the American Veterinary Medical Association* 224(8):1290-1297.

<sup>34</sup> Lambert, M.R., Giller, G.S.J., Barber, L.B., Fitzgerald, K.C., Skelly, D.K., 2015. Suburbanization, estrogen contamination, and sex ratio in wild amphibian populations. *Proc. Natl. Acad. Sci.* 112, 11881e11886.

## Appendix B. The Failure of EPA Regulatory System

Pesticides are, by their very nature, poisons. The Federal Insecticide Fungicide and Rodenticide Act (FIFRA), the law governing pesticide registration and use in the U.S., relies on a risk-benefit assessment, which allows the use of pesticides with known hazards based on the judgment that certain levels of risk are acceptable. However, EPA, which performs risk assessments, assumes that a pesticide would not be marketed if there were no benefits to using it and therefore no risk/benefit analysis is conducted or evaluated by the agency "up front." Registration of a pesticide by EPA does not guarantee that the chemical is "safe," particularly for vulnerable populations such as pregnant mothers, children, pets, and those with chemical sensitivities. Below are examples of concern within the pesticide registration process. These factors should give pause to lawmakers tasked with protecting public and environmental health, and supports action, such as Bill 52-14, to prohibit toxic pesticides and, in so doing, encourage alternatives.

Conditional Registration. EPA will often approve the use of a pesticide without all of the necessary data required to fully register the chemical, and will assign it a "conditional" registration. The agency assumes that while it waits for additional data the product would not cause adverse impacts that would prevent an eventual full registration. A recent report (2013) from the Government Accountability Office, entitled *EPA Should Take Steps to Improve Its Oversight of Conditional Registrations*,<sup>35</sup> strongly criticizes this process, citing poor internal management of data requirements, constituting an "internal control weakness." The report states, "The extent to which EPA ensures that companies submit additional required data and EPA reviews these data is unknown. Specifically, EPA does not have a reliable system, such as an automated data system, to track key information related to conditional registrations, including whether companies have submitted additional data within required time frames." However, these recommendations do not go far enough. Pesticides without all the data required for a full understanding of human and environmental toxicity should not be allowed on the market. Several historic examples exist of pesticides that have been restricted or canceled due to health or environmental risks decades after first registration. Chlorpyrifos, an organophosphate insecticide, which is associated with numerous adverse health effects, including reproductive and neurotoxic effects, had its residential uses canceled in 2001. Others, like propoxur, diazinon, carbaryl, aldicarb, carbofuran, and most recently endosulfan, have seen their uses restricted or canceled after years on the market due to unreasonable human and environmental effects. Recently, a product manufactured by DuPont, Imprelis, with the active ingredient aminocyclopyrachlor, was removed from the market only two years after EPA approval under conditional registration.<sup>36</sup> Marketed as a broadleaf weed killer, Imprelis was found to damage and kill trees. However, in EPA's registration of the chemical, the agency noted, "In accordance with FIFRA Section 3(c)(7)(C), the Agency believes that the conditional registration of aminocyclopyrachlor will not cause any unreasonable adverse effects to human health or to the environment and that the use of the pesticide is in the public's interest; and is

---

<sup>35</sup> Government Accountability Office. August 2013. *EPA Should Take Steps to Improve Its Oversight of Conditional Registrations*. GAO-13-145. <http://www.gao.gov/products/GAO-13-145>.

<sup>36</sup> Environmental Protection Agency. June 2012. *Imprelis and Investigation of Damage to Trees*. <http://www.epa.gov/pesticides/regulating/imprelis.html>.

therefore granting the conditional registration.”<sup>37</sup>

*Failure to test or disclose inert ingredients.* Despite their innocuous name, inert ingredients in pesticide formulations are neither chemically, biologically, or toxicologically inert; in fact they can be just as toxic as the active ingredient. Quite often, inert ingredients constitute over 95% of the pesticide product. In general, inert ingredients are minimally evaluated, even though many are known to state, federal, and international agencies to be hazardous to human health. For example, until October 23, 2014,<sup>38</sup> creosols, chemicals listed as hazardous waste under Superfund regulations and considered possible human carcinogens by EPA,<sup>39</sup> were allowed in pesticide formulations without any disclosure requirement. EPA recently took action to remove creosols and 71 other inert ingredients from inclusion in pesticide formulations as a result of petitions from health and consumer groups. However, numerous hazardous inerts remain. For example, a 2009 study, entitled *Glyphosate Formulations Induce Apoptosis and Necrosis in Human Umbilical, Embryonic, and Placental Cells*,<sup>40</sup> found that an inert ingredient in formulations of the weed killer Roundup (glyphosate), polyethoxylated tallowamine (POEA), is more toxic to human cells than the active ingredient glyphosate, and, in fact, amplifies the toxicity of the product – an effect not tested or accounted for by the pesticide registration process. A 2014 study, *Major pesticides are more toxic to human cells than their declared active principle*, found inert ingredients had the potential to magnify the effects of active ingredients by 1,000 fold.

Pesticide manufacturers argue against the disclosure of inert ingredients on pesticide product labels, maintaining that this information is proprietary. Limited review of inert ingredients in pesticide products highlights a significant flaw with the regulatory process. Rather than adopt a precautionary approach when it comes to chemicals with unknown toxicity, EPA allows uncertainties and relies on flawed risk assessments that do not adequately address exposure and hazard. Then, when data becomes available on hazards, these pesticides, both active ingredients and inerts, have already left a toxic trail on the environment and people’s well-being.

*Label Restrictions Inadequate.* From a public health perspective, an inadequate regulatory system results in a pesticide product label that is also inadequate, failing to restrict use or convey hazard information. While a resident may be able to glean some acute toxicity data,

---

<sup>37</sup> Environmental Protection Agency. August 2010. Registration of the New Active Ingredient Aminocyclopyrachlor for Use on Non-Crop Areas, Sod Farms, Turf, and Residential Lawns. <http://www.regulations.gov/contentStreamer?objectId=0900006480b405d8&disposition=attachment&contentType=pdf>.

<sup>38</sup> Environmental Protection Agency. October 2014. EPA Proposes to Remove 72 Chemicals from Approved Pesticide Inert Ingredient List. <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceeac8525735900400c27/3397554fa65588d685257d7a0061a300!OpenDocument>.

<sup>39</sup> Environmental Protection Agency. October 2013. Cresol/Cresylic Acid. <http://www.epa.gov/ttnatw01/hlthef/cresols.html>.

<sup>40</sup> Benachour and Seralini. 2009. Glyphosate Formulations Induce Apoptosis and Necrosis in Human Umbilical, Embryonic, and Placental Cells. *Chemical Research and Toxicology*. <http://pubs.acs.org/doi/abs/10.1021/tx800218n>.

chronic or long-term effects will not be found on products' labels. Despite certain pesticides being linked to health endpoints, such as exacerbation of asthma,<sup>41</sup> learning disabilities,<sup>42</sup> or behavioral disorders,<sup>43</sup> this information is not disclosed on the label. Furthermore, data gaps for certain health endpoints are also not disclosed.

*Mixtures and Synergism.* In addition to gaps in testing inert ingredients and their mixture with active ingredients in pesticide products, there is an absence of review of the health and environmental impacts of pesticides used in combination. A study by Warren Porter, PhD., professor of zoology and environmental toxicology at the University of Wisconsin, Madison, examined the effect of fetal exposures to a mixture of 2,4-D, mecoprop, and dicamba exposure—frequently used together in lawn products like Weed B Gone Max and Trillion—on the mother's ability to successfully bring young to birth and weaning.<sup>44</sup> A 2011 study, entitled *Additivity of pyrethroid actions on sodium influx in cerebrocortical neurons in primary culture*,<sup>45</sup> finds that the combined mixture's effect is equal to the sum of the effects of individual pyrethroids. This equates to a cumulative toxic loading for exposed individuals. Similarly, researchers looked at the cumulative impact the numerous pesticides that may be found in honey bee hives in the 2014 paper *Four Common Pesticides, Their Mixtures and a Formulation Solvent in the Hive Environment Have High Oral Toxicity to Honey Bee Larvae*.<sup>46</sup> The findings of the study send no mixed messages—pesticides, whether looked at individually, in different combinations, or even broken down into their allegedly inert component parts have serious consequences on the bee larvae survival rates. The synergistic effects in most combinations of the pesticides amplify these mortality rates around the four-day mark.

Research by Tyrone Hayes, PhD, professor of integrative biology at UC Berkeley has compared the impact of exposure to realistic combinations of small concentrations of pesticides on frogs, finding that frog tadpoles exposed to mixtures of pesticides took longer to metamorphose to adults and were smaller at metamorphosis than those exposed to single pesticides, with consequences for frog survival. The study revealed that “estimating ecological risk and the impact of pesticides on amphibians using studies that examine only single pesticides at high

---

<sup>41</sup> Hernandez et al. 2011. Pesticides and Asthma. *Current opinion in allergy and clinical immunology*. <http://www.ncbi.nlm.nih.gov/pubmed/21368619>.

<sup>42</sup> Horton et al. 2011. Impact of Prenatal Exposure to Piperonyl Butoxide and Permethrin on 36-Month Neurodevelopment. *Pediatrics*. <http://www.ncbi.nlm.nih.gov/pubmed/21300677>.

<sup>43</sup> Furlong et al. 2014. Prenatal exposure to organophosphate pesticides and reciprocal social behavior in childhood.

<sup>44</sup> Cavieres MF, Jaeger J, Porter W. Developmental toxicity of a commercial herbicide mixture in mice: I. Effects on embryo implantation and litter size. *Environmental Health Perspectives*. 2002;110(11):1081-1085.

<sup>45</sup> Cao et al. 2011. Additivity of Pyrethroid Actions on Sodium Influx in Cerebrocortical Neurons in Primary Culture. *Environmental Health Perspectives*. <http://ehp.niehs.nih.gov/1003394/>.

<sup>46</sup> Zhu et al. 2014. Four Common Pesticides, Their Mixtures and a Formulation Solvent in the Hive Environment Have High Oral Toxicity to Honey Bee Larvae. *PLOS One*. <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0077547>.

concentrations may lead to gross underestimations of the role of pesticides in amphibian declines."<sup>47</sup>

---

<sup>47</sup> Hayes TB, Case P, Chui S, et al. Pesticide Mixtures, Endocrine Disruption, and Amphibian Declines: Are We Underestimating the Impact? *Environmental Health Perspectives*. 2006;114(Suppl 1):40-50. doi:10.1289/ehp.8051.

Appendix C. Health Effects of Commonly Used Pesticides

A Beyond Pesticides Factsheet – A Beyond Pesticides Factsheet – A Beyond Pesticides Factsheet – A Beyond Pesticides Factsheet

## Health Effects of 30 Commonly Used Lawn Pesticides

	Health Effects						
	Cancer	Endocrine Disruption	Reproductive Effects	Neurotoxicity	Kidney/Liver Damage	Sensitizer/Irritant	Birth Defects
<b>Herbicides</b>							
2,4-D*	X <sup>4</sup>	X <sup>10</sup>	X <sup>7</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>1</sup>	X <sup>14</sup>
Benfluralin					X <sup>1</sup>	X <sup>1</sup>	
Bensulide				X <sup>2</sup>	X <sup>1</sup>	X <sup>2</sup>	
Clopyralid			X <sup>7</sup>			X <sup>2</sup>	X <sup>7</sup>
Dicamba*			X <sup>1</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>1</sup>	X <sup>1</sup>
Diquat Dibromide			X <sup>12</sup>		X <sup>11</sup>	X <sup>1</sup>	
Dithiopyr					X <sup>1</sup>	X <sup>1</sup>	
Fluazipop-p-butyl			X <sup>1</sup>		X <sup>1</sup>		X <sup>1</sup>
Glyphosate*	X <sup>12</sup>	X <sup>3</sup>	X <sup>1</sup>		X <sup>8</sup>	X <sup>1</sup>	
Imazapyr					X <sup>7</sup>	X <sup>2</sup>	
Isoxaben	X <sup>2</sup>				X <sup>2</sup>		
MCPA		X <sup>6</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>11</sup>	X <sup>1</sup>	
Mecoprop (MCP)*	Possible <sup>3</sup>	X <sup>6</sup>	X <sup>2</sup>	X <sup>1</sup>	X <sup>9</sup>	X <sup>1</sup>	X <sup>1</sup>
Pelargonic Acid*						X <sup>1</sup>	
Pendimethalin*	Possible <sup>2</sup>	X <sup>6</sup>	X <sup>1</sup>			X <sup>2</sup>	
Triclopyr			X <sup>7</sup>		X <sup>9</sup>	X <sup>1</sup>	X <sup>7</sup>
Trifluralin*	Possible <sup>3</sup>	X <sup>8</sup>	X <sup>1</sup>		X <sup>2</sup>	X <sup>1</sup>	
<b>Insecticides</b>							
Acephate	Possible <sup>3</sup>	X <sup>6</sup>	X <sup>11</sup>	X <sup>9</sup>		X <sup>2</sup>	
Bifenthrin**	Possible <sup>2</sup>	Suspected <sup>6,10</sup>		X <sup>8</sup>		X <sup>1</sup>	X <sup>9</sup>
Carbaryl	X <sup>3</sup>	X <sup>10</sup>	X <sup>8</sup>	X <sup>1</sup>	X <sup>11</sup>	X <sup>11</sup>	X <sup>7</sup>
Fipronil	Possible <sup>3</sup>	X <sup>6</sup>	X <sup>3</sup>	X <sup>9</sup>	X <sup>8</sup>	X <sup>8</sup>	
Imidacloprid †			X <sup>7</sup>		X <sup>2</sup>		X <sup>7</sup>
Malathion*	Possible <sup>3</sup>	X <sup>10</sup>	X <sup>11</sup>	X <sup>9</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
Permethrin**	X <sup>1</sup>	Suspected <sup>6,10</sup>	X <sup>17</sup>	X <sup>9,7</sup>	X <sup>9</sup>	X <sup>1</sup>	
Trichlorfon	X <sup>3</sup>	X <sup>6</sup>	X <sup>14</sup>	X <sup>9</sup>	X <sup>1</sup>		X <sup>2</sup>
<b>Fungicides</b>							
Azoxystrobin					X <sup>2</sup>	X <sup>2</sup>	
Myclobutanil		Probable <sup>5</sup>	X <sup>2</sup>		X <sup>2</sup>		
Propiconazole	Possible <sup>3</sup>	X <sup>6</sup>	X <sup>2</sup>		X <sup>1</sup>	X <sup>1</sup>	
Sulfur						X <sup>1</sup>	
Thiophanate methyl	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	Suspected <sup>1</sup>	X <sup>1</sup>	X <sup>2</sup>	X <sup>1</sup>
Ziram	Suggestive <sup>3</sup>	Suspected <sup>6</sup>		X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	
<b>Totals:</b>	<b>16</b>	<b>17</b>	<b>21</b>	<b>14</b>	<b>25</b>	<b>26</b>	<b>12</b>

*\*These pesticides are among the top 10 most heavily used pesticides in the home and garden sector from 2006-2007, according to the latest sales and usage data available from EPA (2011), available at [http://www.epa.gov/opp00001/pestsales/07pestsales/market\\_estimates2007.pdf](http://www.epa.gov/opp00001/pestsales/07pestsales/market_estimates2007.pdf).*  
*† EPA lists all synthetic pyrethroids under the same category. While all synthetic pyrethroids have similar toxicological profiles, some may be more or less toxic in certain categories than others. See Beyond Pesticides' synthetic pyrethroid fact sheet at [bit.ly/TLBuP8](http://bit.ly/TLBuP8) for additional information.*  
*‡ Imidacloprid is a systemic insecticide in the neonicotinoid chemical class, which is linked to bee decline.*

## Description

Most toxicity determinations based on interpretations and conclusions of studies by university, government, or organization databases. Empty cells may refer to either insufficient data or if the chemical is considered relatively non-toxic based on currently available data.

The list of 30 commonly used lawn chemicals is based on information provided by the General Accounting Office 1990 Report, "Lawn Care Pesticides: Risks Remain Uncertain While Prohibited Safety Claims Continue," U.S. Environmental Protection Agency (EPA) National Pesticide Survey (1990), Farm Chemicals Handbook (1989), The National Home and Garden Pesticide Use Survey by Research Triangle Institute, NC (1992), multiple state reports, current EPA Environmental Impact Statements, and Risk Assessments, EPA national sales and usage data, best-selling products at Lowe's and Home Depot, and Beyond Pesticides' information requests.

For more information on hazards associated with pesticides, please see Beyond Pesticides' *Gateway on Pesticide Hazards and Safe Pest Management* at [www.beyondpesticides.org/gateway](http://www.beyondpesticides.org/gateway). For questions and other inquiries, please contact our office at 202-543-5450, email [info@beyondpesticides.org](mailto:info@beyondpesticides.org) or visit us on the web at [www.beyondpesticides.org](http://www.beyondpesticides.org).

## Citations

1. U.S. EPA. Office of Pesticide Program Reregistration Eligibility Decisions (REDs), Interim REDs (iREDs), and RED factsheets. <http://www.epa.gov/pesticides/reregistration/>.
2. National Library of Medicine, TOXNET, Hazardous Substances Database, <http://toxnet.nlm.nih.gov/>.
3. U.S. EPA. 2012. Office of Pesticide Programs, *Chemicals Evaluated for Carcinogenic Potential*. [http://npic.orst.edu/chemicals\\_evaluated.pdf](http://npic.orst.edu/chemicals_evaluated.pdf).
4. California Environmental Protection Agency. *Proposition 65: Chemicals Known to the State to Cause Cancer or Reproductive Toxicity*. Office of Environmental Health Hazard Assessment. [http://www.oehha.org/prop65/prop65\\_list/files/P65single052413.pdf](http://www.oehha.org/prop65/prop65_list/files/P65single052413.pdf).
5. The Pesticide Management Education Program at Cornell University. *Pesticide Active Ingredient Information*. <http://pmep.cce.cornell.edu/profiles/index.html>.
6. The Endocrine Disruption Exchange. 2011. *List of Potential Endocrine Disruptors*. <http://www.endocrinedisruption.com/endocrine.TEDXList.overview.php>.
7. Northwest Coalition for Alternatives to Pesticides (NCAP), *Pesticide Factsheets*. <http://www.pesticide.org/get-the-facts/pesticide-factsheets>.
8. Beyond Pesticides *ChemWatch Factsheets*, <http://www.beyondpesticides.org/pesticides/factsheets/index.htm>.
9. U.S. EPA. *Chronic (Non-Cancer) Toxicity Data for Chemicals Listed Under EPCRA Section 313*. Toxic Release Inventory Program. [http://www.epa.gov/tri/trichemicals/hazardinfo/hazard\\_chronic\\_non-cancer95.pdf](http://www.epa.gov/tri/trichemicals/hazardinfo/hazard_chronic_non-cancer95.pdf).
10. European Union Commission on the Environment. *List of 146 substances with endocrine disruption classifications, Annex 13*. [http://ec.europa.eu/environment/endocrine/strategy/substances\\_en.htm#report2](http://ec.europa.eu/environment/endocrine/strategy/substances_en.htm#report2).
11. Extension Toxicology Network (EXTOXNET) *Pesticide Information Profiles*. <http://extoxnet.orst.edu/ghindex.html>.
12. International Agency for Research on Cancer, World Health Organization (IARC) category 2A, the agent (mixture) is probably carcinogenic to humans based on sufficient evidence of carcinogenicity in laboratory animal studies. <http://monographs.iarc.fr/ENG/Classification/index.php>.



Last Updated May 2015

## Appendix B. Environmental Effects of 30 Commonly Used Lawn Pesticides

A Beyond Pesticides Factsheet – A Beyond Pesticides Factsheet – A Beyond Pesticides Factsheet – A Beyond Pesticides Factsheet						
Environmental Effects of 30 Commonly Used Lawn Pesticides						
	Health Effects					
	Detected in Groundwater	Potential Leacher	Toxic to Birds	Toxic to Fish/Aquatic Organisms	Toxic to Bees	Toxic to Mammals
<b>Herbicides</b>						
2,4-D*	X <sup>1,2,3,4,7</sup>	X <sup>3,4</sup>	X <sup>1,2,3,11</sup>	X <sup>1,2,3,11</sup>	X <sup>1,11</sup>	X <sup>3,4,12</sup>
Benfluralin	X <sup>7</sup>		X <sup>3,11</sup>	X <sup>3,11</sup>	X <sup>5,11</sup>	
Clopyralid	X <sup>2,7</sup>	X <sup>2,11</sup>	X <sup>11</sup>	X <sup>11</sup>	X <sup>11</sup>	
Dicamba	X <sup>2,7</sup>	X <sup>1,2,3</sup>	X <sup>10,11</sup>	X <sup>1,2,3,11</sup>	X <sup>5,10,11</sup>	
Diquat Dibromide		X <sup>5</sup>	X <sup>1,3,11</sup>	X <sup>1,3,11</sup>	X <sup>5,11</sup>	X <sup>1</sup>
Dithiopyr				X <sup>5,6,11</sup>	X <sup>5,11</sup>	
Fluazipop-p-butyl				X <sup>1,4,6,11</sup>	X <sup>1,4</sup>	
Glyphosate*	X <sup>8</sup>	X <sup>5</sup>	X <sup>1,3,11</sup>	X <sup>1,2,11</sup>	X <sup>11</sup>	X <sup>4</sup>
Imazapyr	X <sup>2</sup>	X <sup>2,3</sup>		X <sup>2,5,11</sup>	X <sup>5,11</sup>	
Isoxaben		X <sup>11</sup>	X <sup>11</sup>	X <sup>3,11</sup>	X <sup>11</sup>	
MCPA	X <sup>4,7</sup>	X <sup>1,4,11</sup>	X <sup>1,3,11</sup>	X <sup>1,3,11</sup>	X <sup>3</sup>	X <sup>3</sup>
Mecoprop (MCPP)*	X <sup>4</sup>	X <sup>1,2,3,11</sup>	X <sup>3,11</sup>	X <sup>2</sup>	X <sup>11</sup>	X <sup>3</sup>
Pelargonic Acid*			X <sup>2,5</sup>	X <sup>3,5</sup>	X <sup>5</sup>	
Pendimethalin*	X <sup>3,7</sup>		X <sup>1,3,11</sup>	X <sup>1,3,11</sup>	X <sup>5,11</sup>	X <sup>3</sup>
Tridopyr	X <sup>2,7</sup>	X <sup>1,2,3,11</sup>	X <sup>2,3,11</sup>	X <sup>2,3,11</sup>	X <sup>5,11</sup>	
Trifluralin*	X <sup>4,7</sup>			X <sup>3,11</sup>	X <sup>5,11,12</sup>	
<b>Insecticides</b>						
Acephate		X <sup>1</sup>	X <sup>1,3,10,11</sup>	X <sup>3,11</sup>	X <sup>1,3,10,11</sup>	X <sup>3</sup>
Bifenthrin**			X <sup>1,10,11</sup>	X <sup>1,10,11</sup>	X <sup>1,10,11</sup>	X <sup>1,4</sup>
Carbaryl	X <sup>1,3,7</sup>	X <sup>11</sup>	X <sup>2,11</sup>	X <sup>1,2,3,11</sup>	X <sup>1,2,3,11</sup>	X <sup>1,11</sup>
Fipronil	X <sup>7</sup>	X <sup>5,11</sup>	X <sup>2,4,10,11</sup>	X <sup>2,4,10,11</sup>	X <sup>2,4,10,11</sup>	X <sup>4</sup>
Imidacloprid ‡	X <sup>7</sup>	X <sup>1,2,10,11</sup>	X <sup>1,2,11</sup>	X <sup>1,2,11</sup>	X <sup>1,2,10,11</sup>	
Malathion*	X <sup>1,2,3,7</sup>	X <sup>1,3,5</sup>	X <sup>1,2,3,10,11</sup>	X <sup>1,2,3,10,11</sup>	X <sup>1,3,10,11</sup>	X <sup>3</sup>
Permethrin**	X <sup>2,7</sup>			X <sup>1,2,3,11</sup>	X <sup>1,2,3,11</sup>	
Trichlorfon		X <sup>1,3,11</sup>	X <sup>1,3,11</sup>	X <sup>1,3,11</sup>	X <sup>1,11</sup>	X <sup>4  </sup>
<b>Fungicides</b>						
Azoxystrobin	X <sup>9</sup>	X <sup>3,4,11</sup>	X <sup>11</sup>	X <sup>3,11</sup>	X <sup>11</sup>	
Myclobutanil	X <sup>7</sup>			X <sup>5</sup>		
Propiconazole	X <sup>7</sup>	X <sup>3</sup>		X <sup>3,11</sup>	X <sup>5,11</sup>	X <sup>11</sup>
Sulfur		X <sup>1</sup>	X <sup>11</sup>	X <sup>11</sup>	X <sup>11</sup>	
Thiophanate methyl		X <sup>8</sup>		X <sup>3,11</sup>	X <sup>11</sup>	
Ziram		X <sup>3,4</sup>	X <sup>1,3,11</sup>	X <sup>1,3,11</sup>	X <sup>11</sup>	X <sup>3</sup>
<b>Totals:</b>	<b>19</b>	<b>20</b>	<b>22</b>	<b>30</b>	<b>29</b>	<b>14</b>

\* These pesticides are among the top 10 most heavily used pesticides in the home and garden sector from 2006-2007, according to the latest sales and usage data available from EPA (2011), available at [http://www.epa.gov/opp00001/pestsales/07pestsales/market\\_estimates2007.pdf](http://www.epa.gov/opp00001/pestsales/07pestsales/market_estimates2007.pdf).

† EPA lists all synthetic pyrethroids under the same category. While all synthetic pyrethroids have similar toxicological profiles, some may be more or less toxic in certain categories than others. See Beyond Pesticides' synthetic pyrethroid fact sheet at [bit.ly/TLBuP8](http://bit.ly/TLBuP8) for additional information.

‡ Imidacloprid is a systemic insecticide in the neonicotinoid chemical class, which is linked to bee decline.

§ Based on soap salts.

|| Based on in-vitro mammalian cell study.

## Description

Most toxicity determinations based on interpretations and conclusions of studies by university, government, or organization databases. Empty cells may refer to either insufficient data or if the chemical is considered relatively non-toxic based on currently available data. The column labeled "Potential to Leach" refers to a chemical's potential to move into deeper soil layers and eventually into groundwater. The column labeled "Toxic to Mammals" refers to conclusions based on evidence from studies done on non-human mammals.

The list of 30 commonly used lawn chemicals is based on information provided by the General Accounting Office 1990 Report, "Lawn Care Pesticides: Risks Remain Uncertain While Prohibited Safety Claims Continue," U.S. Environmental Protection Agency (EPA) National Pesticide Survey (1990), Farm Chemicals Handbook (1989), The National Home and Garden Pesticide Use Survey by Research Triangle Institute, NC (1992), multiple state reports, current EPA Environmental Impact Statements, and Risk Assessments, EPA national sales and usage data, best-selling products at Lowe's and Home Depot, and Beyond Pesticides' information requests.

For more information on hazards associated with pesticides, please see Beyond Pesticides' *Gateway on Pesticide Hazards and Safe Pest Management* at [www.beyondpesticides.org/gateway](http://www.beyondpesticides.org/gateway). For questions and other inquiries, please contact our office at 202-543-5450, email [info@beyondpesticides.org](mailto:info@beyondpesticides.org) or visit us on the web at [www.beyondpesticides.org](http://www.beyondpesticides.org).

## Citations

1. Extension Toxicology Network (EXTOXNET) Pesticide Information Profiles. Available at: <http://extoxnet.orst.edu/pips/ghindex.html>.
2. Northwest Coalition for Alternatives to Pesticides (NCAP), Pesticide Factsheets. Available at: <http://www.pesticide.org/get-the-facts/pesticide-factsheets>.
3. U.S. EPA, Office of Prevention, Pesticides and Toxic Substances, Reregistration Eligibility Decisions (REDs), Interim REDs (iREDs) and RED Factsheets. Available at: <http://www.epa.gov/pesticides/reregistration/status.htm>.
4. National Library of Medicine. TOXNET Hazardous Substances Database. Available at: <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>.
5. Pesticide Action Network Pesticide Database. Available at: <http://www.pesticideinfo.org>.
6. Fluoride Action Alert Pesticide Project Factsheets. Available at: <http://www.fluoridealert.org/f-pesticides.htm>.
7. U.S. Geological Survey, Water Quality in Principal Aquifers of the United States, 1991–2010. 2015. Available at: <http://pubs.usgs.gov/circ/1360/>.
8. Battaglin, W.A., M.T. Meyer, K.M. Kuivila, and J.E. Dietze. Glyphosate and Its Degradation Product AMPA Occur Frequently and Widely in U.S. Soils, Surface Water, Groundwater, and Precipitation. *Journal of the American Water Resources Association (JAWRA)* 50(2): 275-290. 2014. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/jawr.12159/abstract>.
9. U.S. Geological Survey. Occurrence of Fungicides and Other Pesticides in Surface Water, Groundwater, and Sediment from Three Targeted-Use Areas in the United States. 2013. Available at: <http://www.sciencedirect.com/science/article/pii/S0045653512005218>.
10. National Pesticide Information Center (NCPIC). Available at: <http://npic.orst.edu/index.html>.
11. University of Hertfordshire. PPDB: Pesticide Properties Database. Available at: <http://sitem.herts.ac.uk/aeru/ppdb/en/>.
12. U.S. Forest Service. Human Health and Ecological Risk Assessment. Available at: <http://www.fs.fed.us/foresthealth/pesticide/risk.shtml>.



**BEYOND PESTICIDES**  
701 E Street, SE • Washington DC 20003  
202-543-5450 phone • 202-543-4791 fax  
[info@beyondpesticides.org](mailto:info@beyondpesticides.org) • [www.beyondpesticides.org](http://www.beyondpesticides.org)

Last Updated May 2015



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

**Pesticide task force feedback**

1 message

**Camille Clufford** <knineluvr@gmail.com>

Wed, Dec 21, 2016 at 9:32 AM

Reply-To: knineluvr@gmail.com

To: thm@portlandmaine.gov

Dear Councilor Nick Mavodones and the Portland Pesticide Task Force,

Thank you for the opportunity to provide input to the Portland Pesticide Task Force as it debates the best approach to pesticide reform in the City. As a Portland City resident, I strongly encourage the Task Force to support the South Portland style draft ordinance, and oppose the draft IPM ordinance, as it doesn't set an organic standard (like the South Portland ordinance) and allows each individual applicator (whether licensed professional or uneducated homeowner) to pick whatever pesticides they feel are appropriate.

I urge this approach because I am very concerned about the health effects of pesticides on children, pets and other sensitive residents in the City, and do not want the City to continue allowing toxic pesticide use that harms pollinators and wildlife, and contaminates our water supply and unique coastal ecosystem. It is clear from other communities in Maine and the growing organic lawn care industry that there are effective and economical methods of creating a beautiful landscape without the use of toxic registered pesticides. I urge the Task Force to reject half-measures like the draft IPM ordinance, and keep Portland at the cutting edge of pesticide-reform and environmental sustainability.

Again, thank you for the opportunity to voice my support for a South Portland style draft ordinance.

Sincerely,

Camille Clufford  
303Ludliw St  
Portland, ME 04102



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

**Pesticide Ordinance**

1 message

**Charles Oliver** <islander.oliver@gmail.com>

Wed, Dec 21, 2016 at 7:48 AM

To: thm@portlandmaine.gov

My name is Charles Oliver and I live at 31 Sterling St. on Peaks Island. I am writing to you to ask that you support the draft ordinance from South Portland.

I live on an island where the environment is fragile and products used on gardens and lawns will end up in Casco Bay. I am also concerned for the possible contamination of well water and for young children and pets being exposed to chemicals used on lawns.

This is a time for Portland to set the standard and be a leader in environmental initiatives. Thank you for your consideration to support this pesticide ordinance. Charles W. Oliver

PS.....( MaryAnne Mitchell is my wife and we are in total agreement regarding the use of these poisons).



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

**Pesticide Ordinance**

1 message

---

**Mary Anne Mitchell** <papouchemitchell@yahoo.com>  
Reply-To: Mary Anne Mitchell <papouchemitchell@yahoo.com>  
To: Troy Moon <thm@portlandmaine.gov>

Wed, Dec 21, 2016 at 7:34 AM

My name is Mary Anne Mitchell and I live at 31 Sterling St. on Peaks Island. I am writing to you to ask that you support the draft ordinance from South Portland.

I live on an island where the environment is fragile and products used on gardens and lawns will end up in Casco Bay. I am also concerned for the possible contamination of well water and for young children and pets being exposed to chemicals used on lawns.

This is a time for Portland to set the standard and be a leader in environmental initiatives. Thank you for your consideration to support this pesticide ordinance. Mary Anne Mitchell

---

**Pesticide Task Force Feedback**

1 message

**Victoria Kostadinova** <victoriabernard@earthlink.net>

Tue, Dec 20, 2016 at 7:57 PM

To: thm@portlandmaine.gov

Dear Pesticide Task Force Members,

Thank you for giving your time and energy to reviewing the excellent, newly passed South Portland Pesticide Ordinance, and producing a similar or better ordinance for our city of Portland! We sure do need it!

It is critical for the health of Casco Bay that we match South Portland's thoughtful and progressive stewardship of our shared waters. Much of our local economy, especially in terms of fishing and tourism, relies on a clean and healthy Bay; and, it's the right thing to do, to take care of the shore that is our home. We should not be letting pesticide and fertilizer-laden runoff continue to poison and damage the fish and shellfish our fishermen rely on for their livelihood.

Passing a city-wide ordinance that rapidly phases out the use of toxic synthetic pesticides is also critical to me personally. I hate to think of what ends up in the Casco Bay water my kids and I swim in, and I know that the increased nitrogen load from synthetic fertilizer is associated with all too common algae blooms that are severely damaging our marine environment.

Even closer to home, several of my neighbors still have their yards regularly sprayed and treated with conventional chemicals that are known to be associated with health problems for pets, kids, adults, and they kill severely threatened pollinators like bees and butterflies. Every time my neighbor has her yard treated, I have to try and keep my cats indoors. Time after time, they have come home reeking of pesticides and herbicides, and then they climb right into my lap, or my kids lap, or their bed. I should not have to have my kids involuntarily exposed to toxic carcinogenic chemicals just so that my neighbor can have a cosmetically perfect yard.

That is the crux of the problem: a culture of surface yard perfection sold to us by chemical companies. Sure a yard can look super perfect gorgeous, but it is artificially achieved and needs a constant reapplication of pesticides, herbicides, and fertilizers that decimate the natural flora and microbe culture that makes for a naturally healthy yard.

We have not had our yard treated in any way for six years now, and it is beautiful and poison-free year round! I have not spent a penny on maintenance aside from mowing it, mulching the clippings, and pulling up a few thistles. Even if I had had problems, I could have taken care of them organically- safe solutions exist, and South Portland has committed to giving them a shot!

Organic lawn care can be done people! That's how all our great- grandparents did it, for generations! We don't have to have picture perfect yards, and we don't have to support the chemical industry, but we do have to have healthy kids, clean water, and safe grass for them run on barefoot! Please ask yourselves what is more important.

We are a smart, progressive city, and we should be smart about things we have control over- like the application of unnecessary toxic chemicals on our immediate environment. We can and should be leaders alongside South Portland. We need an ORGANIC STANDARDS BASED ORDINANCE that is as strong as South Portland's, or it will not reduce our synthetic chemical load. The South

Portland ordinance only allows pesticides approved for use in organic management systems, as defined in the National Organic Program. We need to do the same! It is possible. We need to educate homeowners, disabuse them of the false notion that grass needs synthetic chemicals, and clean up our kids' futures. We need a culture change. Please lead the way!

Thank you for your worthy work,

Warmly,

Victoria Bernard  
38 Torrey St.  
Portland, ME 04103



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

**Fwd: pesticides**

1 message

---

**Susan McCloskey** <smccloskey@maine.rr.com>  
To: Troy Moon <thm@portlandmaine.gov>

Tue, Dec 20, 2016 at 5:14 PM

Troy, thanks for distributing this letter to the Pesticide Task Force members.

Task force members, below is an excerpt of a letter I sent previously to City Council about my attempt to keep honey bees on the Peninsula.

&gt;

&gt; Councilors, thanks for anything you can do to reduce pesticide use in Portland.

&gt;

&gt; I try to keep a honey bee hive going in West Bayside. For several years in a row, the hive suffered enormous losses because of pesticides, as diagnosed by Tony Jadczyk, our former State apiarist. (A fellow beekeeper believed that one of these episodes was probably caused by a backyard gardener spraying for Japanese beetles.) What's even sadder than the sight of thousands of dead and dying honey bees piling up in front of the hive is the knowledge that whatever pesticides were killing my bees were also killing our wild native bumblebees and solitary bees, which, though always important for pollination, are becoming even more vital as the population of honey bees dwindles all over the world.

&gt;

&gt; The success of our backyard and community gardens, orchards, and efforts at increasing food security and at locally sourcing food for our schools and restaurants depends on abundant and healthy pollinators. Please let's give them all the help we can.

Once again I urge you to support the South Portland-style draft ordinance or one that is even more forceful in its efforts to protect the environment and all its inhabitants; the IPM draft ordinance is much too lenient in that it allows any applicator to use any pesticide in whatever amount and employing whatever method.

Thanks for your attention.



Troy Moon <thm@portlandmaine.gov>

---

## Integrated Pest Management

---

George & Patty Egbert <GEgbert@maine.rr.com>  
To: thm@portlandmaine.gov

Tue, Dec 20, 2016 at 1:45 PM

Good afternoon Mr. Moon,

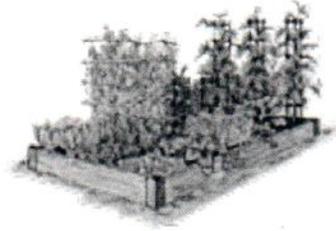
I am writing as the owner/operator of Egbert's Lawncare, LLC to give my strong support for the IPM Pesticide Ordinance. Integrated Pest Management and its steps for effective and safe pest prevention and management are based on tested and widely understood processes. As a lawn care professional I already practice IPM which reduces the use of pesticides while making treatments safer and more effective. In my 30 years as an owner/operator I have seen the Maine Board of Pesticide Control work to effectively set rules and regulations to protect property owners, waterways, applicators and the environment through the use of IPM. Those of us who are involved in the lawn care industry do care about the environment and the people who may be affected by what we apply...IPM is the safest way to continue.

Thank you,

George Egbert  
Egbert's Lawncare, LLC  
(207)839-5502  
gegbert@maine.rr.com

Coastal Earth & Arts Gardens  
Portland, Maine

Cultivating Health & Well Being One Garden At a Time  
207-214-8500 debtrain@gmail.com



Sustainability Coordinator Troy Moon [thm@portlandmaine.gov](mailto:thm@portlandmaine.gov).  
December 20, 2016

To Portland Pesticide Task Force:

I am writing in support of the South Portland style ordinance, or something stronger, to create standards based on health and well - being, rather than less expensive, harmful methods used for aesthetic and cost effective reasons.

I am strongly apposed to the IPM Draft Ordinance, which sets no organic standard. This ordinance is irresponsible and only supports the status quo.

The state of Maine is known for its environmental and natural resources. I know that we are one of only seven states, as well as the District of Columbia ( DC has over a million square feet of green roofing and incentives for developers insisting that they comply with strict environmental policies for storm water run off, heat island effect, and landscaping chemical use) who allow individual municipalities, in our state, to restrict the use of poisonous and toxic chemicals, applied for their ease of use and low cost, quick fix aesthetic purposes.

“Dirigo” I lead.

Portland, Maine has an opportunity to lead the way. We already have other municipalities, such as South Portland, who have done/ begun the work - we need to implement a similar, or stronger, ordinance while we pull together the numerous solutions offered by environmentally concerned landscape businesses, gardeners, and concerned citizens. It is a sad day when the cancer treatment center in Scarborough refuses to go organic. It is time that these large businesses, developers, and corporations go organic - like Nappi Distributors in South Portland.

I have worked in the landscaping/gardening business for many years and understand that the use of pesticides and chemicals are connected to the bottom line. We can not continue to stick our heads into the toxic sand, while 3 million

tons of lawn fertilizer/herbicide are dumped into our earth, while the run off poisons the sea - it is killing our coral reefs, fish species, and our children.

The following are statistics from Planet Natural Research Center on cancer: (The dangers of synthetic pesticide use have been known for decades. The National Coalition for Pesticide Free Lawns reports that of 30 commonly used lawn pesticides, 19 are linked with cancer or carcinogenicity, 13 are linked with birth defects, 21 with reproductive effects, 26 with liver or kidney damage, 15 with neurotoxicity, and 11 with disruption of the endocrine (hormonal) system.

Pesticides have been recently linked to attention-deficit/hyperactivity disorder (ADHD) in children.

It's well known that children are at greater risk of pesticide-related disease than adults. According to the EPA, "Children's internal organs are still developing and maturing and their enzymatic, metabolic, and immune systems may provide less natural protection than those of an adult. There are 'critical periods' in human development when exposure to a toxin can permanently alter the way an individual's biological system operates... Children's behaviors, such as playing on the floor or on the lawn where pesticides are commonly applied, or putting objects in their mouths, increase their chances of exposure to pesticides."

Pesticides typically contain 5% active ingredients. The other 95% "inert" ingredients can be just as dangerous as the active ingredients. Yet pesticide companies aren't required to list them on their labels. As reported by the environmental organization Beyond Pesticides (PDF), many of the commonly used inert ingredients, including ethylene chloride, a nerve poison, are even more dangerous than the active ingredients.

The irony here is that many fertilizers contain pesticides as well as herbicides in their formulas. Families using such fertilizers to green their lawns may not even have a problem with pests. But they're getting pesticides whether they need them or not. Likewise for applications from commercial lawn spraying services.

The only thing preventing us from using the chemical companies profitable products is a government with integrity and genuine concern for the health and well - being of it's citizens. Portland, Maine has an opportunity to lead the way in implementing policy, and education that will effect and encourage our health, and the overall health of our planet, rather than benefiting the purse strings of only a few.

LET'S GROW MAINE  
Coastal Earth and Arts  
Portland, Maine  
Deborah Train  
[debtrain@gmail.com](mailto:debtrain@gmail.com)  
207-214-8500



December 18, 2016

Portland Pesticide Task Force  
City of Portland  
389 Congress St  
Portland, ME 04101

Dear Portland Pesticide Task Force Members,

Portland Pollinator Partnership, hosted by the nonprofit organization the Bayside Neighborhood Association, a nonprofit organization, advocates for a strong Pesticide Ordinance in the City of Portland to protect the health and future of our wildlife, our citizens, our children, our pets, and our environment.

A Council workshop would be of enormous value, similar to the one held with the South Portland City Council as they were studying this issue. Consideration of this ordinance is dynamic and holds many points of view. We believe the City Council deserves to acquire in-depth information and education about this crucial topic prior to any Task Force recommendations or vote.

In addition, we highly recommend that you support an ordinance similar to the South Portland ordinance, if not even stronger. We are currently opposed to the "Integrated Pesticide Management" draft ordinance, which does not set an organic standard, therefore allowing applicators to continue to use synthetic pesticides, which have a disastrous effect on our environment. We strongly advocate that any ordinance you recommend allow only pesticides approved for use in organic management systems, as defined in the National Organic Program. IPM is a step in the right direction, but is based on economics and outdated aesthetic concerns.

The health of our public and our environment should remain the highest priority. In the past decade, the number of butterflies and other insects has diminished on the peninsula. What is especially worrisome, our native bees are gravely threatened by development, lack of habitat, poor environmental practices, and the use of harmful chemicals. The future of our wildlife, our fruits, flowers, and vegetables, and our quality of life is in your hands. Your decision will affect generations to come. Thank you for your consideration and for all the vital work you do on behalf of the citizens of Portland.

Sincerely,

A handwritten signature in cursive script that reads "Annie Wadleigh".

Annie Wadleigh  
Lead Organizer  
Portland Pollinator Partnership



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

## portland task force feedback

---

jody spear &lt;lacewing41@gmail.com&gt;

Mon, Dec 19, 2016 at 4:50 PM

To: Troy Moon &lt;THM@portlandmaine.gov&gt;, Avery Yale Kamila &lt;avery.kamila@gmail.com&gt;

Dear Chairman Mavodones and task force members,

Most of you know that the term *IPM*, widely understood as "business as usual," has been discredited. An ordinance based on precepts of *OPM* (organic pest management), on the other hand, makes sense for the following reasons:

- 1) Insecticides, herbicides, and fungicides used cosmetically on lawns, golf courses, park land, and other city properties, are migrating into waterways -- as shown in the Friends of Casco Bay stormwater monitoring results. They are contaminating drinking water as well as marine life.
- 2) Weed-and-feed products like 2,4-D, dicamba, and many others applied cosmetically are being used in excess, putting children, pets, and other vulnerable populations at risk of serious medical problems.
- 3) Roundup-Ready grass, soon to be available -- and marketed without regulatory oversight -- will mean even more profligate use of glyphosate, a known carcinogen, and leading to still more weed resistance.
- 4) Many chemicals -- especially fungicides -- are applied preemptively, in violation of "IPM" principles. Weed resistance to them is rampant.
- 5) Neonicotinoids and other insecticides are killing bees, on which we depend to pollinate food crops. They are decimating populations of butterflies and birds as well.
- 6) Neighbors should not be exposed to pesticide drift from spraying that goes on around them. Thus Sec. 34-8 (b)(3) under "Waivers" in Draft #3 should read: "Applicant must not allow pesticides to drift onto abutting properties."

I have submitted a number of other mechanical corrections of the previous (SoPo) draft to Avery Yale Kamila, among them:

at the end of the first "Whereas" -- ",,,, effect [not affect] positive change";

for the eleventh "Whereas" in the previous (SoPo) draft -- "...all [not many] citizens deserve protection from exposure to pesticides in the air, water and soil -- contamination that inevitably results from chemical drift and runoff."

Missing from Draft #3 are eight "Whereas" clauses from the SoPo ordinance that I believe should be restored. The second and third (RE: health effects) may be somewhat academic, but the fifth through ninth (RE: water contamination) are critical points. Fred Dillon has told me that like SoPo, Portland has impaired streams, and they should be identified.

Missing from Draft #3 Definitions is "Organic pest management," which I contend is a bedrock term for the Portland ordinance, as for SoPo's.

Among the words misused in the latest draft: "The committee [PMAC] shall be composed of (or "consist of" -- not "comprised of")...."

Under Exemptions, (b)(3) should be Rights-of-way. As I've explained before, there is no "i" without "ii."

I've taken the time to contribute many more editorial fixes, and I hope to see them incorporated into the final version.

I urge city officials to take note of the many landscapers now being trained in organic land care. They are taking advantage of a market niche that will effect positive change for themselves as well as for the population at large. Portland should ride that wave.

Yours sincerely,



## **PEAT** Peaks Environmental Action Team

Mary Anne Mitchell, 31 Sterling St., Peaks Island, ME 04108

Tel: (207) 766-5152 • papouchemitchell@yahoo.com

Sept. 22, 2015

David A. Marshall, Chair  
Jon Hinck  
Justin Costa  
Kevin J. Donoghue

Dear Council Members serving on the Transportation, Sustainability and Energy Committee of the Portland City Council,

Living in a fragile ocean-side environment as we all do, where the products we use in our yards eventually end up in Casco Bay, we are concerned not only about the health of our Island and City neighbors, but also the health of our ecosystem.

Over the last several years we have worked to encourage a mindset here on Peaks, which discourages the use of pesticides generally. But more should and can be done by the City, in terms of regulation of these dangerous chemicals.

In a unanimous decision made by our Board on the evening of Sept. 14, 2015, we voted to support the passage of the *draft* pesticide ordinance submitted to your committee by ***Portland Protectors***.

We encourage you to support its passage by the City Council as well.

Thank you for considering our view.

Sincerely,

Mary Anne Mitchell  
Board President  
The Peaks Environmental Action Team



Troy Moon <thm@portlandmaine.gov>

---

## pesticide use in Portland

1 message

---

**Rhonda Berg** <brhonda1@gmail.com>

Sun, Dec 18, 2016 at 7:00 PM

To: thm@portlandmaine.gov

Please stop killing the bees. Poisoning the ground and air. There is no need of it. None. Please make us proud Mainers. The reason tourists come here is for the beauty and environmental awareness. Outlaw pesticides now.

Rhonda Berg  
Harborview Properties  
207-756-3450



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

**pesticide task force feedback**

---

sandra &lt;sekld@msn.com&gt;

Sun, Dec 18, 2016 at 6:55 PM

To: Troy Moon &lt;thm@portlandmaine.gov&gt;

Dear Troy;

As a concerned citizen of Portland and an organic gardener, I implore the task force to follow the guidelines in the ordinance set by the city of South Portland. By following organic practices when spraying our schoolyards, parks and esplanades, we are not only protecting our children, wildlife and oceans, but contributing to the well-being of our state and our planet. Portland is a progressive city and a leader in the well being of the environment in Maine. Switching from integrated pest management to organics may seem daunting, but the stakes are high and I believe a smooth transition can be had with a little effort. Lawns landscapes and gardens can thrive without the pollutants that past generations deemed necessary. We are just beginning to see how much damage has been done by such practices. At a recent meeting of the task force, I heard, "we are not South Portland, we are a very different city". That said, why not follow their guidelines that have been carefully constructed over a period of time and build on them. It's the right thing to do.

Thank you;

Sandy Donahue



Troy Moon &lt;thm@portlandmaine.gov&gt;

---

## Pesticide Ordinance

---

Rosanne Graef <rgraef@gwi.net>  
To: Troy Moon <thm@portlandmaine.gov>

Sun, Dec 18, 2016 at 2:09 PM

Dear Task Force Members,

I am writing in support of Portland's adopting a pesticide ordinance at least as strong as the South Portland draft. We cannot continue with business as usual and expect to have a healthy environment for ourselves and the plants and animals with whom we share this planet.

As members of this task force, you are in the enviable position of being able to effect change on a broader scale than many private citizens and I urge you to seize your unique opportunity to do so.

Please read this short excerpt from *A Sting in the Tale* by Dave Goulson and take it to heart. Although his topic is bumblebees and he's writing about England, the concepts are readily transplantable to any living organism in any place on earth. The underlined emphases are mine.

*Conservation is not something that should be left to others. It is easy to get depressed and despondent at the impending extinction of the polar bear or the tiger, or at the horrible progress of deforestation in the tropics. Perhaps governments or scientists of organizations such as WWF can do something to help address these situations, but as an individual it is very hard to know where to start—it all seems so remote and dauntingly complex. In contrast, conserving bumblebees is something anyone can do. A single lavender bush on a patio or in a window box will attract and feed bumblebees, even in the heart of a city. Anyone with a garden can help enormously—plant some comfrey, viper's bugloss, foxgloves, chives, aquilegia and so on, and you will see the results almost immediately. If you are lucky enough to be a farmer or a policy-maker, the warden of a nature reserve, or a planner in the local council, you can make a world of difference. This is not just about bumblebees, but about creating a future environment for our children to enjoy, where there are still flowers, bees, butterflies and birds, and healthy crops to eat.*

*(Bumblebees') direct relevance to man through crop pollination makes it very easy to explain the importance of conserving them, and from there it is but a small step to explaining that our survival and wellbeing is inextricably linked to that of all the wonderful diversity of life on earth. We need worms to create soil; flies and beetles and fungi to break down dung; ladybirds and hoverflies to eat greenfly; bees and butterflies to pollinate plants; plants to provide food oxygen, fuel and medicines and hold the soil together, and bacteria to help plants fix nitrogen and to help cows to digest grass. We have barely begun to understand the complexity of interactions between living creatures on earth, yet we often choose to squander the irreplaceable, to discard those things that both keep us alive and make life worth living. Perhaps if we learn to save a bee today we can save the world tomorrow?*

In short, please do not waffle on this by taking any short-term financial view. Be bold, be ethical, be responsible.

Sincerely,

Rosanne Graef  
30A Salem Street