



PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

WALTER E. WHITCOMB
COMMISSIONER

BOARD OF PESTICIDES CONTROL

**May 18, 2018
9:00 AM**

Room 118 Marquardt Building
32 Blossom Lane, Augusta, Maine

AGENDA

1. Introductions of Board and Staff
2. Minutes of the April 6, 2018, Board Meeting

Presentation By: Megan Patterson, Manager of Pesticide Programs
Action Needed: Amend and/or Approve
3. Request from Integrated Pest Management Program for Funds for Mosquito Monitoring

The Integrated Pest Management Program is requesting funds to assist with mosquito surveillance and identification, development of a GIS-based mosquito habitat mapping system, and continued outreach around vector-borne diseases.

Presentation By: Kathy Murray, IPM Specialist

Action Needed: Approve or Deny Request

4. Review of Pesticide Sign for Self-Service Areas

BPC Chapter 26 Section 7 requires that pesticide self-service sales areas include a “Board approved sign informing the public where to obtain additional information”. The staff has drafted a new version of the sign. The Board will now discuss and provide guidance to the staff.

Presentation by: Amanda Couture, Certification & Licensing Specialist

Action Needed: Approve and/or Amend Proposed Sign

5. Continuing Discussion of the Board's Role in Public Education

At the April 6, 2018 meeting Jesse O'Brien spoke about municipal ordinances which led to a general discussion by the Board about public outreach. It was stated that the discussion should be continued at the next meeting.

Presentation By: Megan Patterson, Manager of Pesticide Programs

Action Needed: Provide Guidance to Staff

6. Discussion about Use of Unmanned Aircraft Systems (UAS) for Agricultural Purposes

Following the April 6, 2018 meeting, the staff had a further discussion about the use of Unmanned Aircraft Systems (UAS) for agricultural purposes. We realized there is a gap caused by the BPC rules. The definition of "aerial applicator" in Chapter 10 states that all aerial applicators shall be considered commercial applicators. The definition of commercial applicator does not allow for applications to lands owned or leased by the applicator for the purposes of producing an agricultural commodity. Therefore, it appears that UAS applications to agricultural crops could be done by hiring a commercial applicator, but could not be done by the owner/lessee. The Board should consider whether to pursue creating a policy (if possible) or amending its rules.

Presentation By: Anne Chamberlain, Policy & Regulations Specialist

Action Needed: Provide Guidance to Staff

7. Election of Officers

The Board's statute requires an annual election of officers. The members will choose a chair and vice-chair to serve for the coming year.

Presentation By: Megan Patterson, Manager of Pesticide Programs

Action Needed: Nominations and Election of Officers

8. Other Old or New Business

- a. Is *Bt* toxic to lobsters? Staff response to question raised at April 8 meeting
- b. Letter from B.K. Keller, Northport, Maine
- c. Portland Flower Show brief
- d. Unmanned Aircraft Systems for Aerial Applications-Presentation from South Carolina
- e. Variance permit for control of invasive species in Biddeford to Vegetation Management Services, Inc.
- f. Variance permit for control of invasive species in Great Pond to Vegetation Management Services, Inc.
- g. Variance permit for control of weeds in rights-of-way to Department of Transportation
- h. Variance permit for control of weeds on the Fort Kent levee along the St. John and Fish Rivers to Dubois Contracting

i. Job Posting: Pesticide Safety Education Program Professional

7. Schedule of Future Meetings

July 13, 2018 is a proposed Board meeting dates in Augusta. August 24, 2018 has been proposed for a tour of Green Thumb Farm in Fryeburg and Weston's Christmas Tree Farm in Fryeburg followed by a Board meeting locally. The Board also indicated an interest in having a Public Information Gathering Session in the fall but a date was not determined. The Board will decide whether to change and/or add dates.

Adjustments and/or Additional Dates?

8. Adjourn

NOTES

- The Board Meeting Agenda and most supporting documents are posted one week before the meeting on the Board website at www.thinkfirstspraylast.org.
- Any person wishing to receive notices and agendas for meetings of the Board, Medical Advisory Committee, or Environmental Risk Advisory Committee must submit a request in writing to the Board's office. Any person with technical expertise who would like to volunteer for service on either committee is invited to submit their resume for future consideration.
- On November 16, 2007, the Board adopted the following policy for submission and distribution of comments and information when conducting routine business (product registration, variances, enforcement actions, etc.):
 - *For regular, non-rulemaking business*, the Board will accept pesticide-related letters, reports, and articles. Reports and articles must be from peer-reviewed journals. E-mail, hard copy, or fax should be sent to the Board's office or pesticides@maine.gov. In order for the Board to receive this information in time for distribution and consideration at its next meeting, all communications must be received by 8:00 AM, three days prior to the Board meeting date (e.g., if the meeting is on a Friday, the deadline would be Tuesday at 8:00 AM). Any information received after the deadline will be held over for the next meeting.
- During rulemaking, when proposing new or amending old regulations, the Board is subject to the requirements of the APA (Administrative Procedures Act), and comments must be taken according to the rules established by the Legislature.



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WALTER E. WHITCOMB
COMMISSIONER

BOARD OF PESTICIDES CONTROL

April 6, 2018

Room 118 Marquardt Building
32 Blossom Lane
Augusta, Maine

DRAFT MINUTES

9:00 AM

Present: Adams, Bohlen, Flewelling, Granger, Jemison, Morrill, Waterman

1. Introductions of Board and Staff

- The Board, Staff, and Assistant Attorney General Mark Randlett introduced themselves.
- Staff: Bryer, Chamberlain, Connors, Couture, Gibbs

2. Minutes of the February 23, 2018, Board Meeting

Presentation By: Ann Gibbs, Director, Animal and Plant Health

Action Needed: Amend and/or Approve

- Jemison has a couple suggestions he will leave with Gibbs
- Bohlen stated that in the minutes it mentions the Freedom of Information Act on page two. It should have referenced the Freedom of Access Act.
 - **Flewelling/Morrill: Moved and seconded approval of minutes as amended**
 - **In Favor: Unanimous**
- Gibbs updated the Board that Cam Lay resigned and the department is in the process of filling the position with an interim director. Flewelling asked if it would be someone on staff. Gibbs replied yes, she had already asked interested employees to apply and received two applications. Gibbs added that they are going to conduct an informal

interview and asked if Morrill would serve as the Board's representative for that process. Gibbs asked if the Board would grant Morrill authorization to approve someone for the position of interim director.

- Morrill asked if the Department would still actively place ads for a new director. Gibbs said they would but because of the hiring freeze they must first receive permission from the governor to advertise the position.
- There was discussion about the previous hiring process and that the Board gave the final approval for that hiring. Morrill stated that this time the Board would like to be involved in that process from the start. Morrill stated he would be fine representing the Board but he would like to extend an invitation to all Board members. Granger asked if it was appropriate to talk with Morrill during this process if he is the only member involved. Randlett replied if the Board is discussing a decision then it should be done in a public meeting. Other representatives from the Board could be involved in the process, and the Board could authorize them in advance to act on behalf of the Board. Or the representatives could bring information to a meeting and the entire Board could make a decision together.
- Morrill stated he would like other members involved if they wished to be. Jemison stated he felt involvement in the interim was less important than being involved in the hiring for the permanent position.
- Morrill stated the goal will be to have an acting director in place before next Board meeting.
- Granger stated he would like to be involved and suggested they have three Board members involved. Gibbs stated that one of the interviews for the interim position was happening today.
- Jemison volunteered to be the third Board member to participate in the process.
 - **Morrill/Flewelling: Moved and seconded to nominate himself, Granger, and Jemison to be on the hiring committee for the interim director and be authorized to approve the hiring on behalf of the Board.**
 - **In Favor: Unanimous**

3. Continuing Discussion Around Unmanned Aerial Systems (UAS)

At the February 23, 2018 meeting the Board had a brief discussion about UASs and directed the staff to research the topic and provide more information. Enclosed are several documents for the Board to study. The Board will now discuss what steps it wishes to take next in regards to regulating UASs for pesticide applications.

Presentation by: Anne Chamberlain, Policy and Regulations Specialist

Action Needed: Determine Next Steps to be Taken

- Chamberlain told the Board that the State of Wisconsin had chosen to amend their aerial manual to include info about UASs instead of doing rulemaking and that a copy of Wisconsin's manual was in the Board members' folders.
- Chamberlain gave the Board an excerpt from chapter 10 which defines aerial applicator. She deferred to Randlett who agreed that according to the BPC definition, an aircraft is not required to be manned. As the regulations are written an individual would be able to

operate a UAS with a commercial aerial license as long as they had met all FAA requirements. Any applicator would also need to have the category for the site they are applying to.

- Chamberlain also provided the Board with an article from Harvard that explained the regulatory hurdles on a federal level.
- Chamberlain told the Board that Chapters 22, 29, and 51 relate to aerial applications, and referenced a flow chart for the Board detailing pertinent items from those chapters. Notes of the discussions around UAS from previous board meetings was also included in the board materials.
- Chamberlain explained any potential applicators would need to meet all requirements detailed in Chapter 22, including creating a site plan, a site-specific application checklist, and 1000' buffer zones for sensitive areas likely to be occupied. Some requirements must be completed the day of the application and some beforehand. Drone operators would be required to comply with all regulations that an aerial applicator would need to do.
- Chamberlain told the Board that Chapter 51 includes requirements for notification, posting notification for aerial applications. They are specific depending on the target site.
- Adams asked Chamberlain if the aerial applicator would still be required to notify individuals on the registry when planning to make an application. Chamberlain responded that they are not required to if they are doing aerial applications.
- Chamberlain told the Board all Chapter 29 requirements, including regulations surrounding water quality and the portion regarding browntail moth, must also be complied with by drone applicators. An inquiry had been sent to all the state pesticide agencies; none replied that they have done any rulemaking around drones.
- Bohlen stated drones might be beneficial in making more precise applications of small amounts and therefore reducing overall use. He added that he did not view the existing rules as a problem in regards to putting individuals at risk, but they may actually become too prohibitive in the future.
- There was discussion about whether the notification requirements would really fit the precision drone applications.
- Bohlen would like more information regarding a drone's risk profile before discussing the best way to protect public safety.
- Flewelling stated he has been employing drones for observation. Morrill stated he also has a drone and is working out the insurance piece currently.
- Morrill stated the board maybe went into this thinking the rules weren't adequate or appropriate, but after Chamberlain's presentation they agree the rules currently in place are comprehensive.
- Randlett stated the Board often holds public info gathering meetings on topics. He added that the Board could advertise this to the public to come to the meeting to voice their concerns.
- Bohlen stated that from a risk management perspective he would like more information on the track record of drones, and on how carrying small amounts of product change the risk profile. He always would like to know if they are using higher concentrations, and any other pertinent information. Bohlen asked if staff could find more information. Chamberlain responded that the staff would continue to research and would share anything found.
- Morrill suggested revisiting this at the August meeting and put out a call to have an informational gathering session in the fall.

- Adams stated he is not aware of enough public information out there about the regulations we do have in place. He has concerns people may be making drone applications and have no idea it is illegal.
- Bohlen stated this is a good point because there is potential for someone to walk through all the rules and not know they are doing anything wrong.
- The board requested there also be included a statement in solicitation for public content that makes sure the public understands that using drones for spraying is not legal.
- Heather Spalding commented that she appreciated Adams suggesting that and that it is a solid deliverable to the general public.

4. Consideration of Consent Agreement with Black Kettle Farm of Lyman, Maine

The Board's Enforcement Protocol authorizes staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involves the application of a pesticide at a rate exceeding the maximum labeled application rate; lack of personal protective equipment; and failure to maintain OSHA safety data sheets at a central information display.

Presentation By: Raymond Connors, Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors told the Board that during a routine inspection with an organic farm in Lyman it was determined there were three issues that lead to a consent agreement. There were no Safety Data Sheets, there was a lack of proper label-required gloves, and the use exceeded the maximum allowable label rate. A \$150 consent agreement was paid.
- The Board discussed the maximum allowable label rate of the product.
 - **Flewelling/Bohlen: Moved and seconded approval of the consent agreement.**
 - **In Favor: Unanimous**

5. Consideration of Consent Agreement with Penquis, Bangor, Maine

The Board's Enforcement Protocol authorizes staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involves the application of an herbicide to a school playground by an unlicensed person and without authorization by the school's IPM Coordinator.

Presentation By: Raymond Connors, Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors told the Board that in the town of Milo, Penquis oversees a pre-kindergarden class at the Milo Elementary School and they own playground equipment. A Penquis employee sprayed herbicide in the pre-kindergarden area. The individual was not licensed and the IPM Coordinator did not authorize the application. The consent agreement is for \$250.
- Morrill asked if there was educational outreach to Penquis to ensure this does not occur again. Connors responded that he spoke with the applicator and a Penquis individual. He will include informational content when he sends the consent agreement back.
- Jemison asked why they did not just use a weed-wacker.
- Bohlen wondered if this happens often in situations where a group is running a program within a school. He added that Murray may want to let IPM Coordinators know that if they have any subleased areas on school property the IPM Coordinator should contact those individuals and let them know about the regulations around pesticide applications.
- Morrill stated it is also important to let groups using school grounds throughout the summer know this, and agreed that Murray should discuss this with IPM Coordinators.
- Bohlen asked that staff make sure Kathy Murray is informed this has happened.
 - **Adams/Flewelling: Moved and seconded approval of the consent agreement.**
 - **In Favor: Unanimous**

6. Consideration of Consent Agreement with Riverview Psychiatric Center, Augusta, Maine

The Board's Enforcement Protocol authorizes staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a willingness to pay a fine to resolve the matter. This case involves the application of an herbicide by an unlicensed person on the grounds of the Center.

Presentation By: Raymond Connors, Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors told the Board that a BPC staff member noticed an employee spraying ornamentals at the Riverview Psychiatric Center. They signed and paid a \$200 consent agreement.
 - **Bohlen/Granger: Moved and seconded approval of the consent agreement.**
 - **In Favor: Unanimous**

7. Consideration of Consent Agreement with White's Weed Control of Palmyra, Maine

The Board's Enforcement Protocol authorizes staff to work with the Attorney General and negotiate consent agreements in advance on matters not involving substantial threats to the environment or public health. This procedure was designed for cases where there is no dispute of material facts or law, and the violator admits to the violation and acknowledges a

willingness to pay a fine to resolve the matter. This case involves a broadcast application of an herbicide within 25 feet of water without a variance.

Presentation By: Raymond Connors, Manager of Compliance

Action Needed: Approve/Disapprove the Consent Agreement Negotiated by Staff

- Connors told the Board the Town of Newport had contracted with White's Weed Control to treat for poison ivy along a causeway that crossed Sebasticook Lake. A BPC Inspector met with officials from the town. There was no buffer around the water and Pat White stated he did spray the area of dead vegetation from the waterline to tar. White thought the town had applied for a variance to spray within the 25' buffer. The consent agreement was for \$250.
- There was discussion about whether a variance would have been approved. The Board would not have approved it with powered equipment and the toxicologist would have had to review the pesticides being used.
 - **Adams/Jemison: Moved and seconded approval of the consent agreement.**
 - **In Favor: Unanimous**

8. Other Old or New Business

- Letter from Lauchlin and request from Jesse O'Brien to be on the agenda.
 - Jesse O'Brien addressed the Board. He owns Downeast Turf farms and sells grass, seed, fertilizers, and some hardscapes. He stated that they have grown turf without pesticides or from seed to grass with little to no pesticides, but they cannot grow all of their turf in all fields without pesticides.
 - O'Brien was asked to be on the task force for the South Portland Pest Management Advisory Committee (PMAC). He stated that the new ordinance will be going in effect beginning May 1, including regulation of pesticide use on private property. O'Brien added that even though he was against the ordinance they asked him to participate in the PMAC.
 - The ordinance should be posted on the South Portland website within a week. O'Brien stated that one of the problem he has is that is that they do not use BPC and UMaine as resources for the website, and he thinks that is unfortunate.
 - O'Brien told the Board he finds there is a lack of leadership in the state on this issue from both the BPC and Cooperative Extension.
 - Flewelling asked O'Brien if individuals feel we are not doing our job or they do not like the job we are doing. He added that he thinks this is a sovereignty issue, not a pesticide issue, and the Board is tasked with making policy for the state, not municipalities.
 - Jemison added that citizens are not aware of the inspections and the safeguards in place, and it is frustrating that individuals are trying to do this correctly but not knowing the full extent of what is already in law and what is available.
 - Granger stated the BPC supports several ancillary positions, and there are a lot of sources of good info that could be addressed to help with issues of the town. Granger continued that when providing money to support these other positions the Board should be more detailed about what they expect be done with that money.

- Bohlen added that there is a relevance for the Board to decide how they are allocating resources. Bohlen asked that the Board remember these conversations when they begin discussing the Budget in the coming months.
 - Morrill stated the Board had seen a lot of turmoil in the last few years and it is his hope that they can return to some sort of normalcy with the next hire
 - Riley Titus, of Responsible Industry for a Sound Environment (RISE), was present to represent pesticide distributors and producers. He stated that the group has been following this issue as several towns have been discussing it.
 - Titus stated that pesticide registration fees provide a good deal of money for the pesticide program and some of these local issues seem to be in contradiction to the state policies. IPM is recognized in statute, and the definition includes cultural, mechanical, and chemical controls and he is seeing prohibition on those. He asked the Board how that plays into the state's authority, and if the towns have been reaching out to them for education. Titus commented that it appears municipalities are regulating further a product that is already highly regulated. He asked what the direction or guidance to these municipalities from Cooperative Extension looked like. Titus also stated that from what he has heard today it sounds like many people are looking for some information.
 - Titus told the Board that from the point of a registrant that pays a lot of money into the program, he would be happy to follow-up with any of his information.
 - Morrill said the BPC does have some wonderful resources and that the Board needs to figure out how to use these resources to their best use.
 - Jemison said part of the problem is that when people distrust science and government it will not make that much difference what the Board does. He added that the information is out there and available if people want it.
 - Adams asked if the general consensus in the PMAC group was that organic pesticides are safer. O'Brien replied yes; these products still kill things and it concerns him when he hears they are always safer.
 - Morrill stated he is concerned. There have been several town ordinances for years, but the newer ordinances are much more widespread and affect people on their private property.
 - Morrill suggested having a public forum to hear what the public would like the Board to do. The Board discussed Jim Dill's grant and how that may be an avenue where they can get some measurable results. Morrill said the Board needs to revisit this topic at the next Board meeting. Jemison suggested sending a request to the towns asking them to let the Board know what is and is not working.
 - Adams asked if the question was addressed. Is the perception that the Board is not responsive or effective? If this is not the primary issue, then what is? Should the Board request different deliverables in return for Extension funding. Alternatively, should the funding be differently allocated—possibly to the IPM Council, etc? What are the Board's expectations?
 - Morrill stated that the Board may find something towns are doing at the municipal level that may work, and should be instituted at the state level.
- Legislative Update – LD 1853
 - Spalding mentioned a letter Joint Standing Committee on Agriculture, Conservation and Forestry had received from the Joint Standing Committee on State and Local Government asking them to think carefully about the BPC and

how it is working. There were concerns raised regarding statutory changes in membership structure, related shifts in the balance of the Board, and lack of availability or interest to assist constituents by Board and staff.

9. Schedule of Future Meetings

May 18, 2018 and July 13, 2018 are proposed Board meeting dates in Augusta. August 24, 2018 has been proposed for a tour of Green Thumb Farm in Fryeburg and Weston's Christmas Tree Farm in Fryeburg followed by a Board meeting locally. The Board will decide whether to change and/or add dates.

Adjustments and/or Additional Dates?

10. Adjourn

- **Bohlen/Flewelling: Moved and seconded to adjourn at 11:25 pm**
- **In Favor: Unanimous**



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WALTER E. WHITCOMB
COMMISSIONER

To: Board of Pesticides Control
From: Kathy Murray, Integrated Pest Management Specialist
Re: Request for Funding
Date: May 18, 2018

The Integrated Pest Management (IPM) Program within the Bureau of Animal and Plant Health provides education, outreach, consultation and training to a wide variety of Maine audiences to safeguard health, protect the environment and promote economic benefits of IPM. This is a very small program consisting of one full-time entomologist (Kathy Murray), with occasional support from other Department staff members. The IPM Program provides mandatory training, consultation and tools to all K-12 schools in Maine. This takes about 50% of Dr. Murray's time. The other half of her time is spent writing and administering small grants that provide limited financial support for the program, giving presentations and trainings, maintaining websites, developing educational materials, pest problem-solving consultation for communities and the public, and serving as the staff member/coordinator of the Maine IPM Council.

In addition, the IPM Program has been actively engaged in recent years in developing mosquito surveillance capabilities in collaboration with the Maine Centers for Disease Control mosquito surveillance program. In Maine, mosquito control has historically been the responsibility of individual municipalities—almost none of which do any monitoring. Recognizing that individual towns are ill-equipped to mount an effective mosquito control effort to manage risk of life-threatening vector-borne illness such as Eastern Equine Encephalitis, the state legislature enacted a bill authorizing the State of Maine to conduct mosquito control activities if public health is threatened. In 2013, state legislation was enacted directing DACF to develop a written plan for improving readiness to respond to public health threats of mosquito-borne illness, using existing resources—no funding was allocated. Further legislation enacted in 2015 authorized DACF to conduct mosquito control activities in response to a public health threat—but again, with no funding allocation.

Since 2000, Maine has conducted a thrifty surveillance program for vector-borne disease concentrated in the southernmost part of the state through public-private partnerships led by the state epidemiologist within the state public health agency. Mosquito trapping is done primarily by a state-contracted provider (Maine Medical Center Research Institute) and subcontracts with local colleges and a commercial mosquito control company (Swamp, Inc.). Mosquitoes known to vector EEEV are collected from resting boxes and light traps weekly and submitted to the state health laboratory to be

RON DYER, BUREAU DIRECTOR
AGRICULTURE, FOOD & RURAL RESOURCES
90 BLOSSOM LANE, DEERING BUILDING



PHONE: (207) 287-3200
FAX: (207) 287-2400
WWW.MAINE.GOV/DACF

tested for arboviruses. This is a minimal surveillance program with a critical need for improvement. There are large areas of the state that are not being monitored due to lack of staff and resources and we are unprepared to respond in the event of a vector-borne disease outbreak. Therefore, DACF IPM Program has for the past three years redirected staff time to participate in mosquito surveillance activities. This project has three objectives:

- 1) develop in-house expertise and capacity for mosquito surveillance and identification;
- 2) develop GIS-based mosquito habitat mapping capabilities to precisely target surveillance efforts for maximum efficiency and effectiveness and to enable rapid response to a mosquito-borne illness 'outbreak'; and
- 3) expand and strengthen mosquito-borne disease surveillance in central Maine.

In 2016 and 2017, federal grant funding was available to hire a student to assist approximately 30 hrs/week. Those sources of funding are no longer available, therefore we are requesting funding from BPC to again hire a temporary field and laboratory assistant.

Budget Request:

Salary: \$6282

summer field assistant: 17.45/hr based on \$14/hr salary plus temp staffing agency fee x 30 hrs/week x 12 weeks

Travel: \$ 480

(will use dept-leased vehicles whenever possible). 200 mi/week x 0.20/mi x 12 weeks

Total \$6762

Deliverables:

- An updated GIS model of Eastern Equine Encephalitis vector mosquito habitat (optimized to identify priority sites for mosquito surveillance and rapid response to outbreaks).
- Season-end report detailing mosquito monitoring results (temporal and geographic distribution of vector species, disease testing results and habitat characteristics of surveillance sites).
- Training, resources and outreach to all Maine K-12 schools to improve awareness and utilization of vector-borne risk reduction strategies in schools and the communities they serve.



Always read the label first!

pesticides@maine.gov
thinkfirstspraylast.org
207-287-2731



<http://extension.umaine.edu>
1-800-287-0279
Cooperative Extension
MAINE
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State experts are available with free advice

Whether combating insects, weeds, or
critters, arm yourself with the knowledge
to help you find a safe, effective solution.



Got Pests? Using Pesticides?

Pesticide Sales Area

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1-800-287-0279
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COMMISSIONER

Memorandum

To: Board of Pesticides Control

From: Pam Bryer, Toxicologist

Subject: Question from June 6, 2018 Board Meeting

Date: May 18, 2018

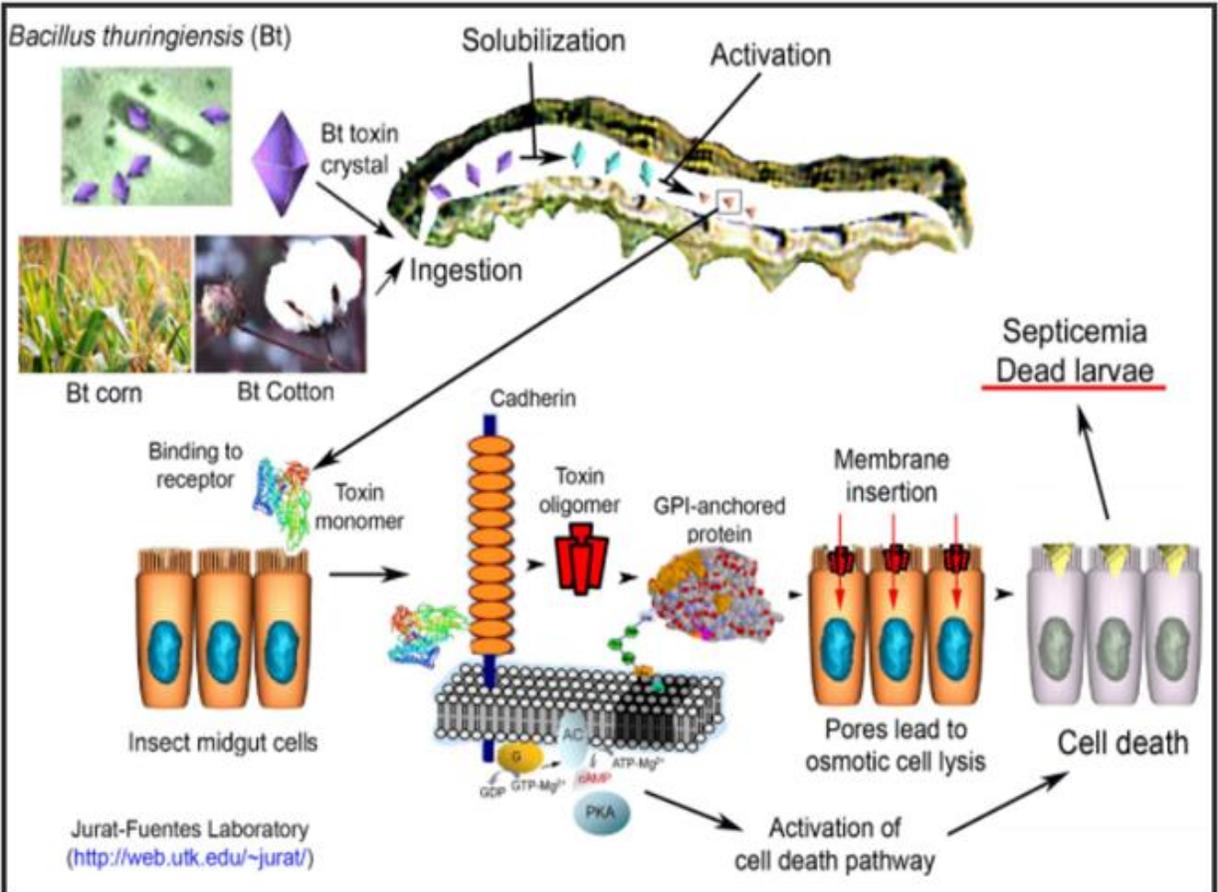
At the June 6, 2018 board meeting the question of whether *Bt* is toxic to lobsters was asked. Here is a brief answer to that question. Not surprisingly, the answer is we don't know.

Question: Is *Bt* harmful to lobsters?

Answer: *Bt* has not been tested on lobsters. Attached is a table based on available pesticide toxicity data for lobsters. Few compounds have been tested on any species of lobsters. Both lobsters and *Bt* are fairly unique entities so generalizations are not helpful in extrapolating to other pesticides exposure scenarios.

Reasonable follow-up question: Since *Bt* targets insects and lobsters are closely related can we assume that lobsters would be just as sensitive?

Answer: Typically, shared phylogeny could help predict toxicity, however, the marine environment places a different set of physical constraints on digestive physiology and since *Bt* is a stomach poison we should not speculate. Marine organisms typically have modified intestinal tracts to deal with maintaining the homeostatic balance of outside-saltwater to internal-body composition.



The above figure shows the uptake of *Bt* endospore into the larval gut demonstrating how *Bt*'s mechanism of action centers around cells lining the intestinal tract.

Table 1. Preliminary literature search results on the toxicity of pesticides on lobsters (*Homarus spp*)

Contaminant	Concentration (ug/L)	Duration	Experimental Notes	Primary Effects	Source
<i>Organochlorines</i>					
Endosulfan				-decr survival & metamorphosis	Bauer et al. 2013
Endosulfan	0.1	96h		-metabolic scope decr (-25%)	Daoud et al. 2014
<i>Organophosphates</i>					
Malathion	3.7	48h	16°C	LC ₅₀	Zulkosky et al. 2005
Malathion	38	96h		LC ₅₀	De Guise, Maratea, and Perkins 2004
	5			-decr phagocytosis	
<i>Pyrethroids</i>					
Mixed pyrethrins & PBO	4.42	48h		Stage I	Burrige & Haya 1997
	2.72			Stage II	
	1.39			Stage III	
	0.73			Stage IV	
Resmethrin	>1	96 h	adult	LC50	De Guise et al. 2005
	0.75	14 d		LC50	
	0.1			-phagocytosis decr day5; -CHH stress hormone elevated wk4	
	0.01			-phagocytosis decr wk4	
Resmethrin	0.26	48h	16°C	LC ₅₀	Zulkosky et al. 2005
	0.095	96h	16°C	LC ₅₀	
	0.1	96h	24°C	LC ₅₀	

Contaminant	Concentration (ug/L)	Duration	Experimental Notes	Primary Effects	Source
<i>Pyrethroids continued...</i>					
Permethrin				0.95 nM changed NO evolution in heart	Casares et al. 2006
Resmethrin				0.94 nM changed NO evolution in heart	
Sumithrin	>1	96h		-no immunotoxicity	Levin, Brownawell, and De Guise 2007
	>1	28 d		-no immunotoxicity	
<i>Insect Growth Regulators</i>					
Methoprene	10	48h	16°C	LC ₅₀ -1ppb lethal to Stage II; -5ppb lethal to Stage IV; -changes in chitinsynthesis; -hepatopancreas, nervous, epidermal bioaccumulation -90% mortality Stage IV at 50 ppb 3 days; -adult bioaccumulation at 50 ppb to hepatopancreas (1.55 ppm), gonad (5.18 ppm), epithelial (6.17 ppm), and eyestalk (28.83 ppm); -adult incr stress proteins	Zulkosky et al. 2005 Walker et al. 2005
Methoprene				-transcriptional changes (xenobiotic metabolism, structural, various)	Horst et al. 2007
<i>Flubenzurons</i>					
Teflubenzuron				LD ₅₀ -3mo 10 (mg/kg); -morphological abnormalities	Samuelsen et al. 2014
Teflubenzuron				-transcriptional changes 21 of 39 genes (xenobiotic metabolism, stress, molt); -moderate bioaccumulation; -low mortality	Olsvik et al. 2015

Contaminant	Concentration (ug/L)	Duration	Experimental Notes	Primary Effects	Source
<i>Avermectins</i>					
Emamectin benzoate				-prompts egg release	Aiken and Waddy 1989
Emamectin	0.5	1X	Recently	-no change;	Waddy et al. 2010
	0.25	2X	ovigerous pre-	-no change;	
	0.125	4X	molt female	-difficult molting & death;	
	0.06	8X		-difficult molting & death	
<i>Other</i>					
Temperature	19C	7 d		-larvae couldn't survive through to Stage IV though grew fast;	Waller et al. 2016
pH	<7.9		Larval <i>H. gammarus</i>	-pH no effect -no mortality or growth changes; -deformities (fused antenna, twisted legs, misshapen claw, curled carapace, puffy carapace, tail fin damage)	Agnalt et al. 2013

APR 26 2018

Maine Dept. of Transportation

16 State House Station
Augusta, ME 04333
Commissioner, David Bernhardt
Chief Engineer, Joyce Noel Taylor
Director, Environmental Protection, Judy Gates
Vegetation Manager, Bob Moosmann
Director, Community Services Division, Peter Coughlan

Maine Dept. of Environmental Protection, 17 SHS
Surface Water Ambient Toxics Monitoring, Barry Mower
Watershed Planning and Management, Donald Witherill

Board of Pesticide Control, 28 SHS

Mary Tomlinson
Raymond Connors

RE: Water pollution from broad roadside spraying

I am writing in response to Roadside Spraying of herbicides and pesticides in Waldo County, and in the state of Maine.

On October 17, 2017 I came upon DOT workers standing in a truckbed spraying herbicide onto the 137 roadside in Freedom from a very large hose. They were about 50 yards from the Sebasticook River Watershed sign.

My friends who walk along this roadside with their children and dogs, the pollinators and wildlife should not be exposed to Herbicides and Pesticides. Broad spraying of the entire roadside affects all life that comes in contact with that roadside. Application from a hose can also drift into cars and onto motorcycles, bicycles and pedestrians. The run-off takes these chemicals into streams, rivers and the ocean affecting all life along the way.

In the interest of public health and safety, our children, wildlife, and water quality, please reconsider putting these chemicals into our environment and please consider these other methods :

- fabric mulch that kills the plants because they can't get sunlight**
- planting low-growing native wildflowers and plants after mulch has killed the unwanted plants**
- horticultural white vinegar as an herbicide**
- with saplings, simply cutting them**
- if spraying is done, spot spray**
- Bareblaster weedburner**
- give towns the choice to use better methods along the State highways that are within the Town boundaries**

I realize that cost is a factor in a more labor intensive method. Consider training inmates in the Maine State prison system to learn about environmentally sound methods and to do the work of cutting, mulching, planting, applying vinegar. The roadsides are also littered with trash. Perhaps with each stretch of roadside that litter could be picked up as well. The amount of plastic that ends up in the ocean is another cause for concern. Also, if towns can take on the responsibility for state roads local residents who want a cleaner environment can volunteer their time and service.

I read the Maine Sunday Telegram article about Bob Moosman and am grateful to him for not spraying by organic farms, his concern for the pollinators and his ideas about replacing troublesome plants with native wild plants, however, I wonder if other methods of plant suppression have been considered for the clover and invasive plants, such as fabric mulch, instead of spraying toxic chemicals.

And in another MST article about the Painted Turtle whose habitat has been disturbed by a Toll Booth, DOT workers in southern Maine are walking the roads in an attempt to save turtles that have been damaged by cars and trucks. If they are poisoned by herbicides and pesticides that are broadly sprayed on the roadsides what then ?

From the Bangor Daily News:

*Penobscot County SWCD works closely with the Bangor Area Storm Water Group to help spread the word to residents, that in the Bangor Area, "Most of your neighbors don't use lawn chemicals, such as fertilizers and pesticides, on their lawns. Join your neighbors in helping to protect our families and community by reducing your use of lawn chemicals. **Volunteers visit neighborhoods spreading that message by stenciling pavement near storm drains to remind residents that stormwater flows unfiltered to streams and the Penobscot River.***

In 2015, the World Health Organization declared glyphosate (RoundUp) a probable carcinogen, which spurred a class action lawsuit brought by hundreds of victims who developed cancer after being exposed to the chemical.

In the interest of public health and safety, the wildlife who have no voice and the quality of our environment please consider methods that are more sustainable. I am surprised that this broad spraying of roadsides is still legal .

Sincerely
B.K. Keller
Northport, Maine

"Externally, the universe supports our physical survival. Photosynthesis in plants and plankton in the ocean produce the oxygen that we need to breathe. It is important to respect the laws that rule the physical universe because violation of these laws threatens our survival. When we pollute the ocean or destroy plant life we are destroying our support system and so are destroying ourselves." Marianne Williamson



Unmanned Aircraft Systems for Aerial Applications

LeadingEdge

 **YAMAHA**





- **Yamaha unmanned helicopters have been used commercially for spraying since 1991**
- **Yamaha has released 3 separate platforms:
R-50 (1991)**
- **RMAX (1997) & RMAX Type IIG (2003)**
- **FAZER (2014) & FAZER R (2016)**
- **Yamaha has produced over 5,000 helicopters and have over 2 million flight hours**
- **Yamaha unmanned helicopters spray over 2.5 million acres annually**



- **Currently over 40% of all rice paddies in Japan are sprayed by a Yamaha unmanned helicopter**



- **Currently authorized to be used in Japan, Korea, Thailand, Australia, New Zealand and the United States**







- **2017 was the first season offering commercial services**
- **Conducted active spray studies with UC Davis since 2015**
- **RMAX unmanned helicopter**
- **Viking VI that serves as our loading platform**
- **Roles**
 - **Pilot (per current California laws the pilot must be commercially rated)**
 - **Visual Observer (no requirement other than Yamaha training)**

SETUP (45 mins)

- **Unload equipment**
- **Prepare units**
- **Preflight checklist**
- **Morning briefing (huddle)**

SPRAY

- **1 – 3 acres per hour**
- **10 gallons per acre**
- **Includes time for mixing & loading**
- **Backpack areas not accessible by helicopter**
- **10-12 mph**
- **10' above canopy**



CLEANUP (30 – 45 mins)

- **Triple rinse**
- **Clean in field**



Autopilot

- **Exact terrain following allows for automated flight**
- **Reduce operator fatigue**
- **Allows for spot applications**
- **Will integrate into operations in 2018**

FAZER R

- **Type Certify FAZER R with FAA**
- **Lease FAZER R to qualified organizations**
- **Carries 8.5 gallons (double the RMAX)**
- **Plan to begin offering lease in 2019-2020**

AUTOPILOT PRECISION FEATURES



EXACT TERRAIN FOLLOWING



ACCURATE COURSE NAVIGATION



AUTOMATED CROP SPRAY



- **Multi-Rotor**
- **Yamaha introduced a multi-rotor unit in Japan (October)**
- **Under 55 pounds**
- **Battery powered with 2 gallon payload**



MG-1 and MG-1S Unmanned Aircraft System (UAS)

- 1 to 4 Teejet nozzles
- 22 pound payload
- 10 liter spray tank
- Gross weight 54 lbs.
- Flow rates 12 – 128 ounces / minute
- Variable rate flow control
- Autonomous or manual flight plan
- RTK –Real Time Kinematic GPS
- Absolute RTK correction
- Flight time duration 12-15 minutes
- Treat .5 - .8 acres per minute
- Fully integrated with real time tracking and positioning
- Variable rate flow control





If you are going to perform aerial applications, you better know your droplet spectrum, effective swath width and cross wind swath















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[JOBS](#) [FAQ](#) [CONTACT US](#)



Pacific Northwest

- Custom Forestry application for site prep
- Removes plant competition
- Seeding performed by Drones also
- Reforestation without extensive labor as in the past
- Operator can operate multiple drones at once

THE **FIRST** FAA APPROVED SWARMS FOR SPRAYING

We're working with commercial foresters to make reforestation more efficient. Offering a one-stop solution, our team of drones plants tree seeds and sprays fertilizer and herbicides to keep trees healthy.

Millions of acres of forestland are currently under-utilized. The availability of dependable workers, and the safety concerns of rough terrain, prevent trees from being planted and cared for. DroneSeed is a scalable solution to addressing this problem. This is the future of forestry - faster, safer, and more efficient.





UAS FAA Laws & Requirements

It's Complicated

14 CFR Part 107

- FAA promulgated rules in 2016 due to increase of Drone use
- sUAS Small Unmanned Aircraft System < 55 pounds for commercial purposes
- Can't carry or dispense hazardous materials
"Economic poisons"
- Can get waivers by FAA but can take along time to get.
Public entity COA faster

14 CFR Part 137

- Agricultural Aircraft Operations
- UAV > 55 pounds
- Same as traditional aerial applicators
- Can apply economic poisons
- Exemptions from wearing harness and certain maneuvers

- The FAA grants relief from certain sections of 14 CFR part 137 that are not applicable to small UAS
- Section 107.36 states that; a small unmanned aircraft may not carry hazardous material. For purposes of this section, the term hazardous material is defined in 49 CFR 171.8
- Knowledge and skill tests - Chief pilot supervisor of agricultural aircraft operations knowledge and skill regarding agricultural aircraft operations
- The test of skill consists of : Approaches to the working area, flare pullups and turnarounds.

Established comprehensive pilot and visual observer (VO) training

- A pilot proficiency demonstration;
- Supervised flight training including agricultural spraying;
- Droplet assessment
- Completion of the training program requirements including examination;
- Continued periodic training even after certification.

- One person who holds a current U.S. commercial or airline transport pilot certificate and rating for the aircraft to be used
- The remote PIC must hold a remote pilot in command certificate (RPIC) with a small UAS rating in accordance with 14 CFR part 107. However, when conducting commercial agricultural aircraft operations, 14 CFR part 137 requires the PIC to hold at least a commercial pilot certificate, and meet all requirements of 14 CFR part 137 unless exempted.
- When a person manipulating the controls of the small UAS is not the remote pilot in command, as permitted in accordance with § 107.12(a)(2), he or she must be supervised by a remote pilot in command who meets the applicable knowledge and skills requirement for agricultural aircraft operations

Recommendations for State Agricultural Policies:

Private applicators:

- Adopt Federal FAA requirements

 - Require FAA Part 137 Certificate

 - Pilot, sport, recreational pilot license

 - Chief pilot with Part 137 Credentials

 - FAA Part 107 sSUS pilot license

Public Agencies:

- FAA Part 107 sSUS pilot license

- Applicators license (ground)

- Operate as public use aircraft

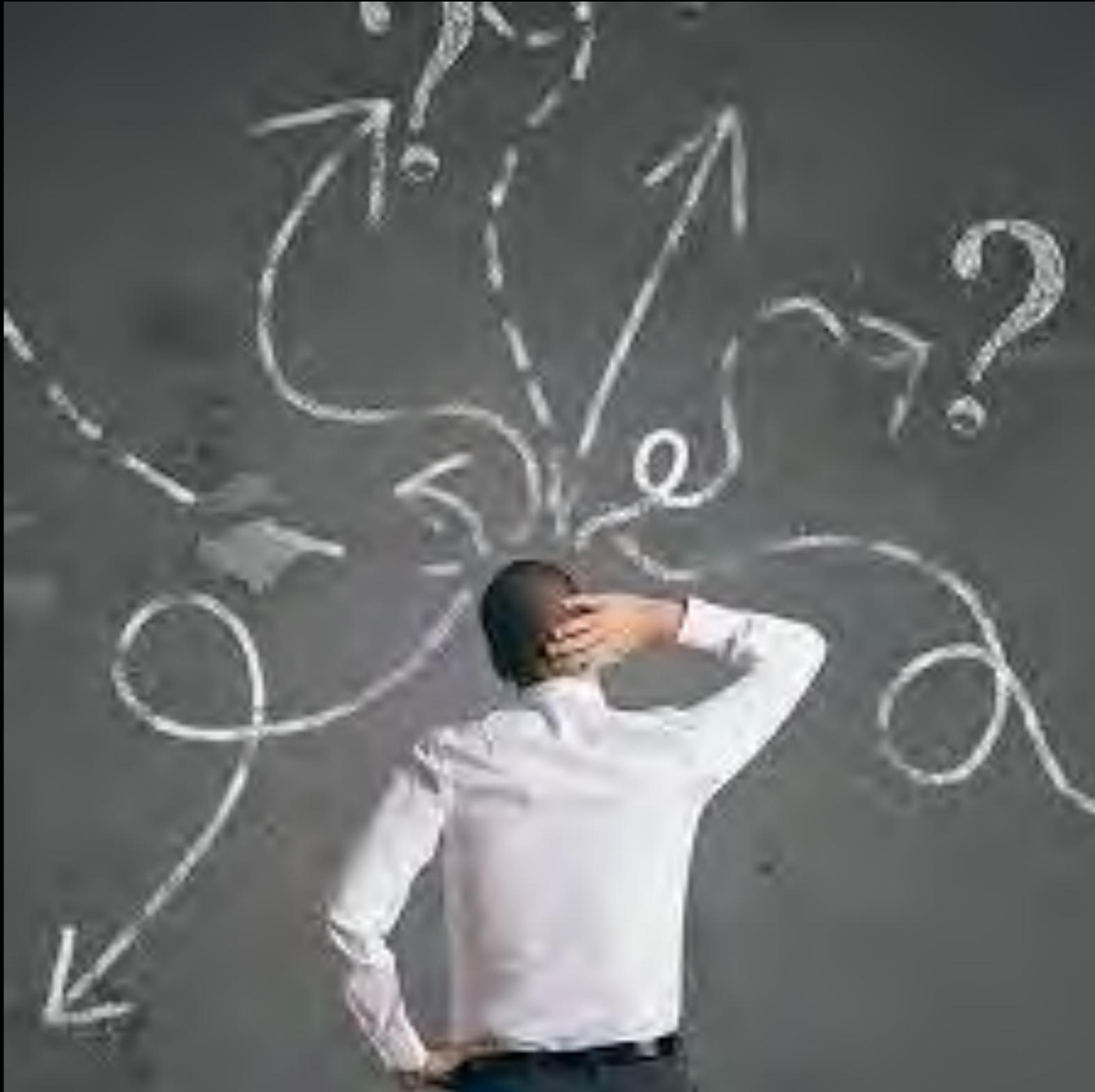
North Carolina Issues

- Must have Aerial Applicator license and Contractors license
- Specialty category (Forestry, Ag Pest Plant)
- Apprenticeship of 125 hours under licensed pilot
- No deposit zones (25 feet from road edge, 100 feet from residence and 300 feet from occupied business.
- Drones can be a precision application method, not practical for our regs

Other considerations

- Is a Drone a Helicopter?
- Does Aerial Application on the label cover it?
- Labels will need to specify
- Droplet size documentation
- Is a Drone safer thus minimizing risk. Less stringent no deposit areas.

Questions





STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

Andrew Powers
Vegetation Management Services, Inc.
2342 Main St
Athol, MA 01331

RE: Variance permit for CMR 01-026 Chapter 29, Biddeford Pool

Dear Mr. Powers:

You recently received a variance permit for Biddeford Pool Land Trust. It was mistakenly issued for one year. In 2013 the board adopted a policy allowing for the issuance of multi-year variances for the control of invasive species. In determining this policy the Board emphasized the need for a long-term plan for re-vegetation of the site, and demonstration of knowledge of efficacy and appropriate practices—the goal being to ensure that the site is reverted to native species, and not made available for another invasive species.

This letter will serve as your Chapter 29 variance permit until December 31, 2020 for the treatment of invasive species and poison ivy at the Biddeford Pool Land Trust property.

Please bear in mind that your permit is based upon adherence to the precautions listed in Sections V and X of your variance application. If it is determined that a different product needs to be used, you must contact the Board first and get a new variance.

If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Anne Chamberlain, Policy & Regulations Specialist



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

Andrew Powers
Vegetation Management Services, Inc.
2342 Main St
Athol, MA 01331

RE: Variance permit for CMR 01-026 Chapter 29, Great Pond, Maine

Dear Mr. Powers:

You recently received a variance permit for two sites in Great Pond, Maine. It was mistakenly issued for one year. In 2013 the board adopted a policy allowing for the issuance of multi-year variances for the control of invasive species. In determining this policy the Board emphasized the need for a long-term plan for re-vegetation of the site, and demonstration of knowledge of efficacy and appropriate practices—the goal being to ensure that the site is reverted to native species, and not made available for another invasive species.

This letter will serve as your Chapter 29 variance permit until December 31, 2020 for the treatment of invasive species and poison ivy at two sites in Great Pond, Maine: along Collar Brook and on the northeast side of King Pond.

Please bear in mind that your permit is based upon adherence to the precautions listed in Sections V and X of your variance application. If it is determined that a different product needs to be used, you must contact the Board first and get a new variance.

If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Anne Chamberlain, Policy & Regulations Specialist



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

May 3, 2018

Robert W. Moosmann
Maine Department of Transportation, Bureau of Maintenance & Operations
16 State House Station
Augusta, Maine 04333-0016

RE: Variance permit for CMR 01-026 Chapter 29

Dear Mr. Moosmann:

This letter will serve as your variance permit for Section 6 of Chapter 29 for weed control along state maintained roads and other transportation facilities.

The Board recently authorized the issuance of two-year permits for Chapter 29, therefore this permit is valid until December 31, 2019, as long as applications are consistent with the information provided on the variance request. Please notify the Board in advance of significant changes, particularly if you plan to use a different product from those listed.

Please bear in mind that your permit is based upon your agency employees and contractors adhering to the precautions listed in Section IX of your variance request.

I will alert the Board at its May 18, 2018 meeting that the variance permits have been issued. If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Anne Chamberlain
Regulations and Policy Specialist
Maine Board of Pesticides Control



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

May 2, 2018

Mr. Donald J. Dubois
Dubois Contracting
295 St. John Road
Fort Kent, ME 04743

RE: Variance Permit for CMR 01-026, Chapters 29 for Vegetation Control on the Fort Kent Levee

Dear Mr. Dubois:

This letter will serve as your variance permit for broadcast application of herbicides along portions of the Ft. Kent levee along the St. John and Fish Rivers.

The Board recently authorized the issuance of two-year permits for Chapter 29, therefore this permit is valid until December 31, 2019, as long as applications are consistent with the information provided on the variance request. Please notify the Board in advance of significant changes, particularly if you plan to use a different product from those listed.

Please bear in mind that your permit is based upon your company adhering to the precautions listed in Section IX of your application.

I will alert the Board at its May 18, 2018 meeting that the variance permit has been issued. If you have any questions concerning this matter, please feel free to contact me at 287-2731.

Sincerely,

Anne Chamberlain
Policy & Regulations Specialist

[Employment at UMaine](#)

Job Details

Position Title:

Pesticide Safety Education Program Professional (id:46597)

Campus:

Orono

Department:

Cooperative Extension

Bargaining Unit:

UMPSA

Salary Band/Wage Band:

41,000 to 47,000

Work Schedule:

University of Maine Cooperative Extension office hours are weekdays from 8:00 am to 4:30 pm

Location:

Orono, ME

Purpose:

The University of Maine Cooperative Extension invites applications for a Pesticide Safety Education Program Professional to begin work Spring, 2018 based in Pest Management Office located at the University of Maine in Orono. This position is full-time, contingent upon funding & adequate performance. The position will be responsible for delivering/coordinating educational programs in support of PSEP that align with the University of Maine Extension's mission and plan of work. The position is expected to work collaboratively with faculty, professional and classified staff. **Typical hiring range for this position is \$41,000 to \$47,000, commensurate with experience and qualifications.**

Essential Duties & Responsibilities:**Essential Functions**

- Edits, updates, revises, writes and adapts study material for use in Maine's PSEP program.
- Coordinates the daily aspects of the PSEP program.

- Delivers/coordinates educational programs in support of PSEP that align with the University of Maine Extension's mission and plan of work.
- Assists in the implementation of IPM programs in various commodities including outreach to communities.
- Assists in the design and implementation of a plan of work that addresses priorities in Pest Management, especially in PSEP.
- Coordinates the delivery of workshops, webinars, and short courses that enhance client knowledge and capacity for applied learning in pesticide safety, pest management including commercial, private, and the general public.
- Work collaboratively with other agencies, organizations, and citizen advisory groups to uniquely address priority issues with an emphasis on greatest potential audience impact through statewide and multi-state programs.
- Collaborate with Extension colleagues and other agency staff to deliver programs in community settings
- Assist and extend efforts in securing external grants and contracts for program expansion and sustainability.
- Create new or draw upon existing educational resources and materials for use in educational programs.
- Support faculty in assessing local needs as part of grant development and implementation.
- Serve on local, regional and state program development teams related to pest management/pesticide education.
- Serve on organizational development and governance committees.
- Report program activities and impacts on Plugged-In.
- Ensure compliance with affirmative action and equal employment opportunity guidelines.
- Develop and sustain a professional development plan in support of one's professional and organizational priorities.
- Maintains various aspects of the website for PMO programming in pest and pesticide education.

Secondary Functions:

- Participate in PMO Extension Staff meetings as a member of the PMO as appropriate
- Participate in organizational program meetings to support program development that reflects the PMO programs.
- Other duties as assigned that relate to UMCE Pest Management mission, especially as they relate to the PSEP program.

Knowledge, Skills & Qualifications:

- Master's degree in biological sciences or plant science related fields
- Skill in developing and delivering educational programs.
- Oral and written communications skills with demonstrated writing ability.
- Computer proficiency with experience in word processing and desktop publishing.
- Ability to work independently and as part of a team.
- Self-motivated and directed.
- Skill in working collaboratively with other agencies and organizations.
- Strong commitment to serving diverse audiences and supporting equal opportunity and affirmative action goals.
- Background and skills in supervising other preferred.

Work Environment:

The PSEP Professional is expected to:

- Work out of the Pest Management Office located in Orono, Maine with statewide and some multi-state responsibilities.
- Assume work responsibilities including evening and weekend commitments.
- Work with colleagues and appropriate agencies to create an annual plan of work that addresses the changing issues and needs of the citizens who benefit from Extension PSEP programs.
- In-state travel normally requiring a driver's license. Is required with reimbursement at the contract rate.

Work Schedule:

University of Maine Cooperative Extension office hours are weekdays from 8:00 am to 4:30 pm. The PSEP Professional will work a flexible schedule to meet the requirements of the position that may involve work beyond regular office hours.

Work Year:

The PSEP Professional is a regular full time position.

Performance Evaluation Schedule:

Performance evaluation will be conducted according to the UMPSA agreement.

Appropriate background checks are required.

All UMS employees are required to comply with applicable policies and procedures, as well as to complete applicable workplace related screenings, and required employee trainings, such as Information Security, Safety Training, Workplace Violence, and Sexual Harassment.

To apply, materials must be submitted via "Apply For Position". You will need to create a profile and application; upload a cover letter and a resume/curriculum vitae which fully describes your qualifications and experiences with specific reference to the required and preferred qualifications; and provide contact information for three professional references. You will also need to complete the affirmative action survey, the self-identification of disability form, and the self-identification of veteran status form. **Incomplete application materials cannot be considered. Review of applications will begin April 9, 2018 and continue until the position is filled.**

The University of Maine is an EEO/AA Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, sexual orientation, age, disability, protected veteran status, or any other characteristic protected by law.

Length:

Fiscal Year (12 Months)

Required Documents:

Cover Letter, Resume/CV