Testimony to House Agriculture Committee reference H688
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Thank you for the opportunity to comment.
I'm here today as a taxpayer, as a parent, and as a citizen of the community.
That's all just for the record. I do not golf, I do not farm for profit, I do not work in the world of grant-funding; I do not stand to gain financially from the outcome of your committee proceedings.
Thank you for creating a short-term PPC. It was a need; you met that need in 2016.
Thanks as well to all the people who served on the committee on their own time.

I believe the PPC did good work; it opened a lot of good, vital discussion. The membership was professional to my eye, which has always been equally true of the Vermont Pesticide Advisory Council as well. So I salute that, but I am here today to insist that the original intent in forming both the PPC and the VPAC be served. I look back at the original mandate behind VPAC and I see a desire to reduce overall pesticide usage. Reduction has not happened, I would probably be justified as well in stating that the general public has no more a clue today than it did 30 years ago regarding the impacts of everyday-use pesticides and their associated proper usage. That said, the VPAC has accomplished some really good work and has been a real service to Vermonters. I believe there is an equally solid justification for a standing PPC, but it needs to honor the full scope of its charge to the highest standard.

The very first charge laid out for the PPC was to evaluate causes and occurrences of pollinator decline. That mission quickly became side-boarded into a narrow focus on neo-nicotinoids. That's a problem, a huge problem, and a serious fail. It was certainly logical and necessary to address neo-nics, but in leaving out atrazine, dicamba, and glyphosate, we have cleared a path for continued use of these products, even accelerated use in the case of dicamba. This is again a fail. So while I see some real positives in the legislation here today, I also see a need for major improvements. Even Secretary Ross called for FULL exploration of all causes of pollinator decline while attending the NOV committee meeting. When we omit something from the conversation, we set the table for all future and follow-on actions. We pick and choose, perhaps subconsciously, but once a precedent is in place those decisions tend to dictate future focus areas (and future topics to be avoided / ignored).

Let me illustrate here WHY that full exploration is important. Dicamba's effects on insect populations is uncertain, and with industry making profits tied to sales of the product, we certainly shouldn't expect a rush to identify impacts. But beekeepers in Arkansas last year noticed serious hive issues in the areas where dicamba treatment had occurred. This is documented, and these are not hobbyist beekeepers; these are

businesses with thousands of working beehives. The bottom line is that dicamba use essentially shut down flowering for miles and miles around positioned beehives. There was no pollen, because the use of this chemical had essentially erased all viable habitat. No pollen means no protein, which means the queen of the hive stops producing young. The same businessman noted that regions without dicamba application actually had a reasonably good production year.
Why is this important to Vermont? Over the past two growing seasons, a company in central Vermont has begun offering treatment services to manage Galium or bedstraw. They use dicamba in that effort, a broadleaf weedkiller that's fairly non-specific. It kills a lot of plant species. Here's the problem: bedstraw is in virtually every pasture and hayfield in Vermont. If you don't have it, you're lucky, but you probably will have it soon and that's the end of that. Most field spaces in Vermont contain a fair amount of purple (crown) vetch, bindweed, creeping buttercup, and bedstraw. None of these are ideal for hay production, but our hands are tied because we will never be rid of these species until we change our management practices. We won't be doing that anytime soon, so we are stuck with these species. Biosecurity will never have any chance of success in our state as long as we continue moving equipment back and forth across landscapes. Therefore, to try eradicating or "knocking back" bedstraw chemically in single locations is insane and pointless. The plant even flowers twice in the growing season, to make control even more challenging. So how do we justify spraying fields to control a species that cannot reasonably be controlled? There is simply NO justification.

And yet we do it. I learned this last spring in a casual conversation with a very frustrated, absolutely devastated property manager who was seeing valuable, desirable broadleaf plants get hammered as a direct or indirect result of dicamba treatment. So with every single flowering plant in the pasture and woodline temporarily shut down or stressed, there was no flower source for pollinators. No clover, no alfalfa, no nothing. That's a big deal, regardless of whether the dicamba affects insects directly or not. It clearly has the capacity to erase entire regions of flowers and pollen, which equals habitat loss. I should mention here that the forecast for this year is a doubling of dicamba usage across the midwest, perhaps even a fourfold increase. That impacts Vermont in both rainfall contamination and product movement due to volatility.

The PPC has not given the above situation any consideration whatsoever, because it chose to focus on a single pesticide category, neo-nicotinoids. I could voice similar concerns regarding atrazine and glyphosate. In fact, the lack of interest regarding glyphosate amazed me. All complex organisms rely to some extent on symbiotic relationships with bacteria, and glyphosate was first patented as an anti-microbial. It does not get any more direct than that regarding effects on complex organisms. I could also add that glyphosate is now found in the majority of tested honey samples (FDA study from 2015); this is problematic because there is no allowable residue quantity permitted in honey. The presence of glyphosate is not permitted, therefore any amount

is a violation. The toxin has also been shown in recent experiments to alter honeybee navigation. Vermont is not an easy place to get around, so additional stress cannot be helpful to individual bees or the functioning hive as a whole. In the end, this all points to cumulative effects, a term one never encounters in Vermont.

All of that said, the PPC probably did as much as it could in the time that it had. The members explored issues in depth and arrived at meaningful conclusions. Again, they did not go wide in scope, but that needs to happen. I believe there was a request to extend the life of the committee, but perhaps we all might agree that a PPC needs to exist on a permanent basis. That cannot happen without funding, which brings me to the issue of registration fees. Vermont's state registration fees for “economic poisons” is ludicrously low. Doubling the annual fee would be completely reasonable and would offer funding for a standing committee and some degree of enforcement. I can sit here now and tell you that lack of enforcement on many fronts is a serious concern in Vermont. We can look at photos of herbicide treatment sites and dysfunctional management later if you like, although that probably puts me in an awkward spot.

If Vermonters had a high-functioning VPAC, PCC, and enforcement arm, both people AND pollinators would be much better protected than they are today. This is why I call all of us to a higher standard. Pesticides are dangerous substances; that's why they are regulated, even if poorly on a national level. And it is simply brilliant that Vermont has a Pesticide Advisory Council. But in the time that I've attended council meetings, there have always been member vacancies. UVM College of Medicine has a position on the council which has been unfilled for as far back as I've looked through the notes. Presently there are two positions from the general public that are unfilled. This is the unfortunate reality, because the council is well-led and does some truly good work. But we need to do better, and I'm sorry but a state IPPM center, as called for in the legislation is not the answer, not in my opinion. If UVM, as an example, was truly dedicated to furthering IPM, their three seats on the VPAC would always be filled. If UVM had an interest in land stewardship, which I'm told repeatedly that it does, we'd have a LAND Stewardship program. That program however was shut down in 2016. Why, you ask? Because it was too expensive to run. That's troubling to hear, but it was a simple short-term business decision.
But worse is the fact that Stewardship is an alien concept to most citizens. No one knows what it means or what it looks like. Indeed, the UVM LANDS page repeatedly associated conservation with stewardship. I don't disagree entirely, but the term needs to include a lot more than conservation. I looked at all the reports generated by the LANDS program since 2007. An impressive collection, except for one thing that stood out to me. The “action noun”, always derived from one of four or five verbs. Always the same root verbs, and all of them fairly passive and based on observation. The expressions I encountered over and over were: Assessment, Inventory, Survey, Monitoring, and of course Report. None of those are “action” verbs performing actual

land stewardship in the resource care-taking sense. There were never any DSRs (Doin' Stuff Reports). No, they are all associated with monitoring. We can argue this point all day, but allow me just to affirm one point. Monitoring falls under the Stewardship umbrella…. but monitoring alone is not stewardship. Conservation alone is not stewardship. We have a lot to learn regarding the notion of stewardship, and in doing so we need to broaden the conversation beyond the universities. We need to engage people who actually work the land and Certified B Corporations who pay real money to see how they can be positive environmental stewards.
I therefore oppose the notion of an IPPM center at one of our academic institutions. Three reasons: it would be redundant, it would bring a bit of exclusivity favoring academic viewpoints, and it looks backward at a concept we never truly mastered in the first place. Collectively, Vermonters and the agencies / legislators serving them need to look forward. Where do we want to be? Who is doing the good work now, and how can we build upon that? And how can we include ALL of Vermont, geographically speaking? So while I love the challenge that IPPM presents to IPM (a new paradigm), I see old notions carrying forward and interfering in true progress.

I suspect some of the people doing good work were at the PPC meetings in 2016. I am impressed that the golf course representative was on hand. I do not golf, nor do I particularly support golfing in terms of land use, but if golf courses can support pollinator programs, good for them. And let's recognize them for that. If I read between the lines, I see that bill H688 does not allow golf courses to deploy neo-nicotinoids. From their input to the committee, however, I understand the need and the issue they face. So if golf courses face higher costs to manage landscapes more responsibly, let us try to offset some costs with money from the product registration fees and monies supporting the “Vermont brand” advertising program. The Vermont brand would be well served if state golf courses were promoted for their good stewardship work and their support of pollinators. Golfers on the Wing, Golfers for Monarchs, Watch 'em Fly! Planting of wildflowers in appropriate spaces and reduction of harmful toxins deserves public recognition, and is a very efficient use of advertising (taxpayer) dollars. Same argument holds for those Certified B corporations doing solid work on their properties; celebrate their accomplishments, nudge them toward long-term programmatic change, help them with informational signage, and thereby move the needle. The positives to the Vermont “brand” would be significant.

So this IPM concept, or recommendation…. I have some points to share.
Integrated Pest Management means that we explore and maintain a range of valid options in our approach to situations, both the broader-based issues like EAB, and the perhaps site-specific scenarios, like a patch of poison ivy or an infested house plant. We can also take an integrated approach to the broader management of landscapes and to our educational pursuits like the engineering fields. IPM seems to hold us to an open-mindedness and even some degree of creativity. But IPM is in trouble – we've twisted

and destroyed an otherwise valid concept. We have to recognize that Marketing is king in the United States. Science is used to support marketing, why else would we be so far behind Europe on some of the environmental issues? Without that recognition, IPM is just a big happy sandbox for us to play in while corporations run the show elsewhere on the playground. NRCS and our mindless clinging to an antiquated, broken Farm Bill process are frankly part of that dysfunction; agencies and the land management establishment therefore cannot be the lead agent of change. With these flaws in IPM as a model, I have to question our ability to launch a real IPPM program. The learning curve would be huge, even if we did launch, but should Vermonters have to pay for that?

I have had many conversations around New England about IPM, which we do not have time for today. But I suppose I should support my claim above. If we worked in an integrated fashion, across disciplines toward the overall long-term good, we would:

- Remediate contaminated soil at project sites, rather than capping the sites or shipping the soil away to sit in a hole someplace else. EPA, really?
- Know where our soil came from regarding infrastructure rebuilds like the Post-Irene reconstruction of Route 14 in Royalton. Having sub-contracted for the cheapest option, we brought in fill with seed and rhizomes of six invasive species.
- See that the gender-confused fish reported in northen Lake Champlain in 2016 were similar to situation observed and studied in Great Britain. In the 1980s.
- Include pesticides as a consideration and an environmental hazard in developing the state Five Year Cancer Plan. Instead there is no mention whatsoever.
- Have incredibly advanced soil testing facilities to position our state as leaders in New England supporting understanding of soil conditions.
- Understand that sections of southern Vermont have suffered devastating environmental stress events recently. Individuals would not have to explain to others who really should be in the know, that some landscapes in Vermont have had deposition of 1-3' of silt during Irene (oxygen starvation of root systems) and a severe drought less than five years later (2016). That's a double stress over a short timeframe which serves to set up tree species for invasion by aggressive alien insects. Ergo, the wisdom of introducing yet another stress, herbicides, around these trees is…. What? Uninformed? Negligent?

To bring the disconnect even closer to home, I look to the Vermont legislature. Last year there was a hearing on atrazine usage and issues. This year there is a pollinator bill and potentially a glyphosate bill. There's a hazardous materials bill somewhere adressing PFOA / industrial contamination, but I did not see pesticides included. While the interest is much-appreciated, it also illustrates our collective failing to tie it all together.

One never hears about cumulative effects in Vermont, but that conversation needs to

begin. I tried to start the discussion last year, asking of the PPC why they focused ONLY on neo-nicotinoids. I got no answer, and worse, my question did not find a place in the committee notes. So you here today would never know to consider cumulative effects if I did not speak before you. You should be asking yourselves now: how does glyphosate behave in the presence of atrazine and road salt and other pollutants? How does atrazine get into well water and what are the breakdown products of all these toxins? What is the difference between degradation and immobilization of a product? If positive ions effectively immobilize a substance, are those ions no longer available to a plant growing in already-depleted soils? There are many more questions beyond those.

My final point circles around the notion of silo'd thinking or perhaps that lack of integration. This bill is actually progressive- it touches on pesticide usage, regulations, planning, and best practices for pollinators. But look at the RAPs that came out after years of input and development. I read those pages and saw only two issues addressed: manure management and siting of structures. That's it… an occasional mention of sidebar items, but literally two topics of focus showing virtually no appreciation of integrated approaches and desired outcomes. The water quality and climate change people work in silos of their own as well. It's truly costly for us and unfortunate that we go around in circles without overlapping into other realms. Thinking outside the box actually only serves to hold us back, OK perhaps inside a slightly larger box. Vermont does not need yet another university-driven initiative; there is already more information, more organizations, and more databases than we can presently work with. What we need is Integration, in the name of Stewardship, something to tie it all together. If we had that connectedness, the water people would understand that the soil people really do have a powerful message that could change the reality on the ground. Powerfully and visibly…

Are there organizations already doing the groundwork? Yes. Look at citizen science efforts everywhere, the Monarch Larva Monitoring Project, Nature Groupies and The Stewardship Network, Penn State University, Virginia Tech University, the New England Wildflower Association, University of New Hampshire, the Ecological Landscape Alliance, the Northeast Organic Farming Association, and the Northeast IPM Center. There are an almost equal number of databases. The pieces are in place; we need to now construct the puzzle. We have made little progress breaking out of our silos in the past fifty years. Very little, because Rachel Carson noted it as a major issue in 1962, saying: “This is an era of specialists, each of whom sees his own problem and is unaware of or intolerant of the larger frame into which it fits. It is also an era dominated by industry, in which the right to make a dollar at whatever cost is seldom challenged. (Silent Spring, p.23).

I welcome your questions and thank you for your time.
Michael Bald