

MCTF Best Practices Subcommittee Meeting Minutes 11 22 21

Minutes for the Mosquito Control for the Twenty-First Century (MCTF) Task Force Meeting

Subcommittee Meeting: Best Practices

November 22, 2021, 12:00 p.m. via Zoom

Meeting Topics:

- Open Meeting, Roll Call, Welcome, and Meeting Purpose (chair)
- Review the agenda and share info from other subcommittees (facilitator)
- Non-target impacts of insecticides on aquatic life (Helen Poynton)
- Brainstorm recommendation outlines suggested by subcommittee members (chair)
- Discuss Next Steps (facilitator)
- Closing Remarks and Vote to Adjourn (chair)

Roll call was conducted by Richard Robinson and a meeting quorum was established. Members in attendance included Russell Hopping, Heidi Ricci, Kim LeBeau, Priscilla Matton, Richard Pollack, Helen Poynton, and Kathy Baskin. Cheryl Keenan reviewed the agenda and referenced the drafting of questions for the MCD's, related to salt marsh management and adulticiding, which was open to all subcommittees.

- Non-target impacts of insecticides on aquatic life (Helen Poynton)

It was noted the research group looked at a number of different things including the impacts of pyrethroids on organisms, aquatic insects, and larvae. A study from last spring showed the shifts in use and toxicity of pesticides, which showed a decrease in toxicity, but an increase in toxicity in aquatic invertebrates. Fish were being impacted and recent work showed some pyrethroids could cause endocrine disruption in fish in low concentrations. It was noted that one thing that was heard was that lab studies were not predicting what was heard in the field. Helen noted that there were a lot of factors that could make lab tests less sensitive than the field.

When both lab studies and field work were taken into consideration it ended up that the lab studies did a good job of predicting field toxicity. Through the discussions it was noted that populations rebounded quickly and that was an important piece of biodiversity. Helen mentioned the National Science Foundation (NSF) considered three different factors in their assessment of biodiversity. Helen commented that she sent summary notes about a month ago regarding the field studies that were done to look at the impacts of mosquito control effects. Two studies were done in CA and one was done in MA.

Helen put together a few studies that were done in MA and layered what was known about pyrethroids. The content slide that Helen presented showed pyrethroids in all areas in red. It was noted that the slide depicted the state before the large spray event in 2019. Helen's group had been looking at resistant *Hyalella* and it was mentioned that their results would be out in a year or two. Helen noted there was no detection after 48 hours, so it was short lived in the water. Helen talked about the residential use of insecticides and noted that urban areas had seen a huge increase in toxicity levels and the belief was that it was due to residential use of insecticides. Helen noted that some other figures showed resistant *Hyalella* that were in areas that were not part of spray events and again the belief was this was due to the use of residential insecticides. Helen summarized her presentation by noting that Pyrethroids were already present and they were already capable of adverse effects in MA waterways. Spraying events could lead to toxic concentrations but they seemed to leave the area quickly, probably bonding to sediments. PBO was more water soluble than the pyrethroids and had the potential to synergize with the pyrethroids that were already present. Helen noted that the source of pyrethroids found was not from the MCD's but rather from residential/commercial use.

Helen asked a question of the committee: How can the State reduce the need for spraying or minimize the harm caused by spraying without increasing homeowner/commercial use? Helen commented that based on the number of individuals in Bristol County that requested mosquito spraying on their properties, if it was not the state doing it, then it would be a private mosquito control company doing it, which was less likely to use informed evidence about mosquitos in their spraying. Helen noted that this was a very important thing to consider.

Richard Pollack asked since we were seeing an improvement in analytical capability, should we be considering a threshold amount? Helen responded yes and commented that the map she showed was at a detection level that was high enough to show detection in Hyalella. Richard Pollack commented that the state does not do widespread adulticiding that frequently and it was his understanding that the more frequent you expose your target/non target then the more pressure you added to create a genetic bottleneck. The question was posed: do the MCDs spray enough to cause this issue?

Helen Poynton commented that Richard Pollack made good points and noted that you see this on the day after a spray event and then next day it was back to pre-spray levels. Hyalella were more likely to become resistant because of their habitat. Helen noted that she wished she knew more about pollinators, but it was outside of her area.

Heidi Ricci asked about PBO synergists and the measurements that were taken and about multiple and repeated exposures. Heidi Ricci acknowledged private owner and commercial application concerns with how pesticides were used. Heidi Ricci asked for Helen's thoughts as a scientist on reducing the load and burden of pesticides in the environment. Helen noted that she wished we had more information on truck-based spraying and would define that as a data gap. Heidi Ricci noted that there could be some data on the amount that MCDs spray annually. Richard Pollack responded that some projects do have data and have a GIS system to show when and where pesticides were applied.

Heidi Ricci asked Helen if she could talk about the role of large areas of refugia in the landscape and how populations and genetic issues Helen mentioned were affected. Helen noted it would be a great help for the flying insects that can easily fly around. For aquatic insects and crustaceans that cannot move around as easily it was not as helpful for them in their ecosystem as it was more isolated.

Kathy Baskin asked a clarifying question on the scatter plot Helen presented on the toxicity units versus mortality. Helen provided an overview explanation of the calculation related to toxic unit and how it related to concentration. Kathy noted that it was interesting to see the data. Kathy mentioned that there could be a recommendation for MA DEP follow up monitoring. Kathy discussed how DEP made decisions on where, when, and what to monitor for. DEP would want to know how those concentrations compare to a lethal dose. Kathy also referenced Helen's aerial spraying slide and noted that slide suggested more personal homeowner spraying.

Helen noted that it was not the charge of this committee to review residential use of all types of products. Richard Robinson interjected that it was well within our purview to say we have been charged with talking about application at the state level, but if there was another significant problem which also needs addressing it was well within our scope to recommend other areas of concern. Priscilla Matton thanked Helen for her presentation and commented on the last slide with the map and thought the use of pyrethroids was not driven by homeowner mosquito control, but rather homeowner defense to control ants and grubs. Helen commented that what Priscilla stated may have something to do with it. Priscilla noted that DEP does have representatives on the SRB and does make the decisions that risk was high enough to spray and where and when to spray. Priscilla mentioned that it would be easier using DEP data for where they could preplan. Priscilla mentioned that using the data to focus in on hot spot areas would be beneficial to align everything, to prevent rush at the end.

Heidi Ricci noted that Priscilla's suggestion was good, and Heidi saw a benefit in more advanced planning. Heidi mentioned that she heard about people scrambling to cover hives, move animals, and cover gardens and not having enough notice. Heidi also discussed the 2019 aerial spraying and noted that the DPH data showed that the

last three sprays had no significant reduction in target mosquito vector. Richard Pollack clarified that weather played an important factor. If it was too cold, windy, other factors may conspire to make the efficacy less than desired. Heidi Ricci asked Richard Robinson if she could show the DPH slide so the group could see what she was referencing. Richard Robinson agreed, and Heidi Ricci showed the slide of the aerial sprays to the group and added that it cost \$2.261M. Alisha Bouchard noted that those were September dates that Heidi Ricci was referencing and there were weather and temperature issues that did impact the sprays. Alisha added that as a best practice going forward, we would not be looking at September for those types of spray operations.

- Brainstorm recommendation outlines suggested by subcommittee members

Kim LeBeau identified a problem with communication. There was a need for more clear and active communication to public water systems. Also, there was a need for development of a QC and QA testing program which incorporated testing for all chemicals used for aerial spraying events and MCD applications.

Richard Pollack recommended that each MCD employ an entomologist to identify mosquitos and have access to a wetland biologist to oversee habitat modification efforts. He encouraged MCD's to focus adulticiding applications on neighborhoods based on objective data and aggregation of complaints. Individual property-based applications should be limited to municipal owned sites and in response to or anticipation of a defined threshold of mosquito activity. Also, would recommend and encourage SRB and MCD to formally define and adopt goals, establish thresholds for action, and set realistic expectations for the management of mosquitos and mosquito-borne diseases that considers the risks and benefits of action and inaction.

Heidi Ricci commented regarding IPM and having standards that include monitoring, protocols, thresholds for the various factions, standards for public outreach, and education. Heidi Ricci commented that she would like to see surveillance become available to every community, regardless of if they take part in routine spraying. Heidi recommended adding more standard procedures for protecting vulnerable populations and beneficial non-target organisms, even when spraying was warranted. Heidi commented on organic agriculture, making the opt out process more streamlined, particularly annual renewal and signage, thresholds for action when there was state intervention, and the possibility for allowing landowners to be excluded even if they were not certified organic.

Richard Robinson shared his screen and displayed his documented recommendations

- Recommended that the DPH be principally responsible for statewide education on mosquito management
- MCD's may continue to include education in their activities but would not be required to and would do so in coordination with DPH
- DPH would coordinate with MDAR, Fish and Wildlife, and other entities to present a comprehensive education campaign about source reduction and personal protection as the cornerstone of disease reduction
- In consultation with MCDs consider ways to reduce or restrict the number of individual requests for nuisance control
- Recommended offering the current opt-out option to all commercial farms
- Recommended codifying the current protected status for certified farms in legislation not just in department policy
- Recommended that aerial applications of adulticides be prohibited
- Recommended the declaration of a public health emergency regarding EEE and WNV be based on published, research based, quantifiable criteria established by a board set up to advise the DPH in this regard.
- Recommend to fund MDAR to collate and analyze pesticide application records from private applicators to understand the situation and develop possible recommendations for limiting use
- Consider recommending in part or in whole, the Hinds Bill

Russell Hopping noted the need to make a greater distinction between public health risk and nuisance control. Helen Poynton noted adding procedures to protect aquatic life and to expand the recommendation to test to areas on lakes and streams receiving run off from pesticide application.

Kathy Baskin added coordinating education efforts to ensure that DPH information is distributed to the public to minimize exposure to EEE. Therefore, we could minimize the need to spray in general. Kathy noted that she liked the idea of MCDs doing some of the monitoring after spraying. There were not many other labs in the Commonwealth that do this work. Kathy asked, how do we make sure capacity was there to do the analysis we recommend, because currently capacity was limited. Kathy Baskin added that a private applicator database would fill a huge gap for the importance of what we were dealing with and there must be funding available for MDAR to do that. There must be urgency and prioritization to get this done. Alisha commented that whatever the recommendation was, it would also make sense to provide funding and a deadline to ensure IT can meet the needs and so we can push the project up the priority list. Russell Hopping commented that as a licensed pesticide applicator it would be great to be able to submit this data online.

Priscilla Matton had a few questions related to the rationale of the recommendations that were made. Priscilla asked Kim LeBeau if there was a map that already existed on MA GIS that we could look at, as that would save time to reference GIS data and any application that took place in those areas. Kim responded that DEP would have a listing of all the public water systems and surface water supplies and perhaps it could be integrated together with MCD maps. Priscilla noted a benefit to having that data but asked how that communication would work. Kim noted that would require further discussion.

Richard Robinson noted that any recommendations made would have to have a level of discussion and planning. Our job was to figure out what was best, practical, and politically feasible. Priscilla noted that she was concerned that we were looking at a reactive approach to mosquito control and that DPH has taken more of a proactive approach. Priscilla noted that if disease was progressing there could be a good reason to spray. Priscilla cautioned against less IPM and more reaction.

Heidi Ricci commented that in protecting human health there needs to be more understanding of vulnerable populations. Heidi Ricci noted that there were thousands of people across the state that were at risk and if spraying was conducted where they lived, they would not be able to live there anymore. Richard Pollack noted that he heard what Heidi Ricci said about vulnerable populations but to keep in mind that people bitten by mosquitos were also part of a vulnerable population.

It was noted that the recommendations list would be organized and distributed to the group as soon as possible and that the group was working on all three directives simultaneously and the question was asked if the group should continue down that path. Richard Robinson noted to stay on the same path. Hearing no other comments, Richard Robinson entertained a motion to adjourn the meeting from Richard Pollack, seconded from Priscilla Matton. All in favor said aye. The meeting was adjourned at 1:56 p.m.