9.2.21 Mosquito Control Task Force (MCTF) Meeting #15 – Minutes

Beth Card called meeting to order at 12:02 p.m.

1. Like previous meetings, this meeting is being hosted as a Zoom webinar. All task force members and state staff are panelists and can participate freely. Everyone else is participating as attendees and can post questions through the Q&A function. No questions were raised about these Zoom logistics.
2. Will first vote on minutes, then present an update on the administrative support plan, and then hear from our colleagues at ERG on the MCTF study.

John Lebeaux moved to approve the minutes of August 10, 2021. Jennifer Pederson seconded the motion.

Minute approval vote: Kevin Cranston (aye), John Lebeaux (aye), Nicole Keleher (aye), Kathy Baskin (aye), Eve Schluter (abstain), no vote heard from Heidi Porter, Derek Brindisi (aye), Julia Blatt (abstain), no vote heard from Tanya Colpitts, Anita Deeley (aye), Russell Hopping (aye), Kim LeBeau (aye), Bob Mann (aye), Priscilla Matton (aye), no vote heard from Brad Mitchell, Jennifer Pederson (aye), Richard Pollack (aye), Helen Poynton (aye), Heidi Ricci (aye), Steven Rich (aye), Richard Robinson (abstain), Sam Telford (aye). Approved.

Updates:

Beth Card provided an update about administrative support for the task force. The contract with ERG has been extended to provide support with scheduling, drafting agendas and notices, supporting the subcommittees in mapping out the process for which recommendations can be made, helping the subcommittees write draft and final recommendations, supporting subcommittee chairs in developing materials for full Task Force review, helping to aggregate public comments and any additional strategic support we might need. We are working closely with ERG to map out the process going forward with an immediate next step being to schedule the subcommittee meetings.

Julia Blatt asked whether there is a list of the subcommittees and the chairs.

Caroline answered that the list is posted on the Task Force webpage.

Beth Card then introduced Dr. Lauren Brown to provide an overview of the ERG report. She noted challenges that were reported regarding mosquito policy, which included a concern about chemical treatment on private property, the difficulty of conducting mosquito control and surveillance on public lands, endangered species and critical habitat protection, and restrictions under the Children and Families Protection Act. Potential solutions received from respondents included increased awareness of management options and strengthened relationships with landowners to facilitate communication.

For the mosquito control opt-outs and exclusions report, ERG reviewed current policies and exclusion requests in MA and other states. No other NE states have comparable opt-out policies or exclusions. There is a similar process in MI but hasn't been in effect very long. 2021 was the first year for municipal opt-out process in MA. 35 municipalities submitted on-time requests, with 24 approved and 11 deemed moderate risk and denied.

For the pesticide composition, toxicity, resistance, PFAS, and frequency of use report, ERG conducted literature reviews, searched EPA databases and registration reports, among other actions. For toxicity, a full risk assessment was not conducted for this report. Ecological toxicity was the main concern for active ingredients and Dr. Brown discussed certain active ingredients (pyrethroids and spinosads) and their risks. She noted that many specific ingredients in the pesticides are not available to MDAR. She also discussed the finding of PFAS in pesticides and noted EPA testing indicated fluorinated storage containers as a possible source in Anvil 10+10. MA immediately stopped using the only pesticide found to contain PFAS upon having a positive test result. DEP and MDAR are currently testing different containers and trying to determine how contamination is occurring. Dr. Brown then discussed pesticide resistance in mosquitoes, which is typically related to overuse or misuse of a particular pesticide. ERG could only locate literature on *Culex pipiens* and *Aedes vexans* and noted that control programs can reduce resistance by monitoring populations, rotating pesticides, using non-chemical strategies, and avoiding the use of persistent chemicals. About half of MA mosquito control districts ("MCDs") did resistance testing in 2020.

For the integrated pest management and non-chemical controls report, ERG looked at studies on how control was implemented, its effectiveness over mosquito life cycles, applicability and limitations for MA use, and considerations for environmentally sensitive areas. All MCDs using chemical controls are following Integrated Pest Management, which integrates actions like stormwater management/source reduction and public education. Mosquito predator habitat management and other educational efforts not currently well coordinated across MA were also considered.

For the maximizing pesticide effectiveness and minimizing non-target impacts report, ERG reviewed literature and MCD reports and other agency reports, among other sources. ERG then juxtaposed the American Mosquito Control Association's ("AMCA") best practices against MA's to compare and found that many best practices are being used in MA, although not consistently across all areas, and that information sharing and monitoring of efficacy are limited. Many protective measures that were identified benefit multiple non-target receptor categories. Selecting the least hazardous pesticide is important and while the process is not well established for MCDs, municipalities, and private applicators, the report does provide suggestions. The report also presents numerous ways to minimize non-target impacts, including notifying about pesticide application events, location and precision, timing, and climate/weather considerations, all in addition to following label instructions.

For the public water system laws and regulations report, ERG reviewed laws and regulations relevant to drinking water supplies, public water systems, and pesticide applications. ERG also interviewed key agency representatives and summarized the available monitoring data and outcomes. Dr. Brown noted the regulatory framework offers multiple prongs of protection with levels of restrictions imposed for use, including limitations on levels that can enter the environment. Other NE states have developed similar pesticide and groundwater regulations, health-based standards, drinking water monitoring requirements, and source water assessment programs. Improvement could be made in leveraging existing programs to encourage collaborative partnerships with local watershed organizations, establishing a system in which pesticide applicators communicate spray plans to water system managers, and researching impacts of household pesticide use, pesticide use by private entities, and truck-based spraying activities on water quality. ERG also created a public health model to analyze human infections by level of control, relying on literature review of EEE and WNV infections, by using a decision tree model to estimate outcome of each infection with outcome specific distribution to find out

what the infection would cost. The model estimates that business as usual would result in 4 EEE deaths at an average cost of $16M and 12 cases with 0 deaths of WNV costing $194,232. If there were no mosquito control, however, the number of cases would nearly triple. Dr. Brown did also note that as mosquito control increased, there did seem to be diminishing returns for both EEE and WNV.

ERG then looked at the impact on agriculture and pollinators and didn't find evidence that currently used chemicals are having an impact on honey bees. Since 2019 reports of mortality were released, there has been no evidence of mortality higher than what would be expected, but the synergistic effects of pesticides could cause the increase. She said there was no literature discussing this problem and so it could not be evaluated. ERG did see a preference for the use of chemicals to reduce disease-bearing mosquitoes to reduce disease risk. ERG did not see a significant impact on fish and bird populations.

For the climate change impact report, ERG reviewed relevant literature and interviewed four experts on health impacts and vector-borne disease. They identified climatic variables linked to changes in arbovirus/mosquito habitat and model outputs attributing climate change factors to changes in habitat, among others. Dr. Brown said modeling based on temperature is the most advanced and clearly attributes temperature changes to a change in mosquito population and arbovirus occurrence. Bird migration patterns and sea level rise may affect these factors but require more study. ERG did not identify any studies attributing changes in EEE to climate change. She did note there is an increased risk of WNV in NE over time as well as an increased risk of disease from *Aedes albopictus* and *aegypti* mosquitoes in NE due to climate change.

Dr. Brown then opened the floor to questions. Beth Card first asked for questions from the task force members.

Heidi Ricci posed several questions to Dr. Brown. 1) The review of pesticides seems to say there is some evidence of human health impacts of pyrethroids that EPA says it still needs study; it seems like there's not a lot of information here on at-risk or particularly sensitive communities? Dr. Brown noted a 2015 report on topic of issues Heidi Ricci raised, and that in the report, it does state there are potential issues of concern that are still controversial and there isn't a firm conclusion on them yet. 2) As for the recommendations for minimizing human health exposures; no data on the extent to which people even receive those notices or even comply? Dr. Brown said she did not recall any. 3) Is there data on the impact of hundreds of native wild bees and other pollinators like moths that are out at night or other beneficial insects? Dr. Brown said ERG pulled in data from the EPA on lethal concentrations for non-target insects. ERG also pulled in information on ETI and some of the other complex ecological environmental factors. Heidi Ricci said she was surprised because there was a heavy focus on honey bees. 4) Overview question/comment; Dr. Brown was able to confirm some districts followed some practices for record keeping based on AMCA recommendations, but there is no centralized way to evaluate efficacy of statewide practices now? And in evaluating potential impacts of control on human health, was she correct in understanding that ERG took the percentage of mosquitoes killed by a particular spray event and applied that to effectiveness at preventing disease? Do we know there's any correlation there, because people avoiding bites might have more of an effect than killing 50% of mosquitoes? Heidi Ricci said she did not understand the modeling and did not think it's really valid. Dr. Brown said there is a discussion on additional considerations that need to be evaluated on that modeling exercise, and that given the data available, that was an assumption that needed to be made to quantify that.

Julia Blatt asked for further elaboration on pyrethroids and potential toxic impacts, noting it's really hard to avoid aquatic environments in MA. Dr. Brown said the data were based on a specific set of chemicals but that a representation was made that it's good for the entire class of chemicals. She pulled up a table that showed EPA classifications system based on toxicology studies ranking compound toxicities. Pyrethroids rank as very highly toxic. She believed EPA's current policy is to ensure their application is such that exposure would be very minimal.

Priscilla Matton asked for a list of individuals that were part of the assessment team. Dr. Brown said she will work with Caroline Higley to get that information out.

Russell Hopping thanked Dr. Brown for the presentation. He expressed concern about the lack of breadth for other pollinators included in this report. His main question was whether under the opt-out, some of the feedback made it sound like it created a challenge for spraying to be effective? Did that challenge relate to operations on the ground or that it wasn't actually effective in controlling mosquitoes or their diseases? Abby Burton explained that if you have too many folks opting out, it limits the geographic area where MCD can spray because they leave certain buffer zones. No one was identified as a severe challenge but it's one more thing to work around during spraying when dealing with excluded areas.

Helen Poynton thanked Dr. Brown for the report, saying it was well written and organized. She had a few requests for more information. 1) More information on resistance testing; Helen Poynton's own groups have done resistance in non-target crustaceans in MA, so she was really concerned about their existence. 2) What were the permethrin levels detected in drinking water samples? 3) The model presented at the end of the report on different tiers of control and how that would affect cases; could Dr. Brown go through it in additional detail? Dr. Brown provided more context and discussion on the model limitations.

Richard Robinson also thought the report was excellent. He asked about budgetary costs to adult mosquito control and breakdown of nuisance v. public health control, particularly at the adult stage. He reiterated that until we really know how much mosquito spraying is done just for nuisance control, it's hard to evaluate the data. He wondered if there are some data gaps the task force can try to fill and if there is any low hanging fruit that might be valuable to pursue. Beth Card said a link will be sent around and that she can circulate information as a follow up to the question.

Jen Pederson asked about the second report and its interview process. How did ERG focus on those particular groups and will those people interviewed be disclosed? Diana Pietri said identities were to be kept confidential so they could ensure full disclosure. She said ERG went for a cross section across MCDs and those who worked with related groups like local boards of health. ERG also wanted to speak to people at the Commonwealth level and part of EEA and MDAR as well as folks knowledgeable about the science. So, ERG created categories of types of individuals they wanted to speak with and reached out accordingly.

Jen Pederson then asked about informant bias, and Diana Pietri said this was a great question and that everyone has such bias, so that's why they aimed for a representative sample to counteract the individual perspectives and biases.

Heidi Ricci reiterated her labeling concern from the past meeting. Beth Card said she will discuss it with her team and would get back in touch. Bob Mann seconded the concern and said the pesticide subcommittee could discuss that issue.

Beth Card then read questions from Q&A. She noted there were many questions, and if she couldn't reach them all, she would follow up individually afterwards.

1. Cost of illness question and relation to comorbidities. Dr. Brown directed to underlying literature on what they cited.
2. Christopher Horton asked if positive rate analysis took into account the type of trap used to collect? Dr. Brown was not positive of the answer; she said she knew that in the first report, there was data on this analysis, but wanted to refer to that report for specific details so she didn't misspeak. She was not sure if ERG did it by type of trap; might be by type of mosquito.
3. David Brown asked if all pesticides used by MA have been reviewed and registered by EPA and are used according to label directions? Dr. Brown said yes, all registered by EPA. Heidi Ricci noted that she's questioning that with her comment made earlier and that there are deep flaws with the EPA registration process.
4. David Brown asked about mosquito control application rates. Dr. Brown said they were looking at inherent toxicity of these chemicals, not the amount of exposure. Helen Poynton did a quick calculation based on data in report and said she ended up with a very general number that shows the rate is closer to pounds per acre than ounces per acre.
5. Christopher Horton asked why was ERG looking at forces beyond EPA? Don't they do an ongoing review of scientific literature related to products? Dr. Brown said they wanted to make sure that if there were any data gaps or differing data available out there, that the realm was captured and as noted, there are interests in looking at other data sources.
    - ➔ ***Please note endnote with requested correction***
6. Question about how districts make stormwater management sites? Priscilla Matton said there are a significant number of sites and data are large, but you can ask any individual mosquito control for specific information.
7. David Brown asked about the cost difference between larviciding and adulticiding? He thought it was relevant to demonstrating that there aren't significant impacts to pollinators. Dr. Brown said they were reviewing those impacts and taking them into consideration in formulating a response.
8. Kyle Bennett noted EPA carcinogen question and whether it was reclassified? Dr. Brown said this is an errata/edit that needs to be made to the report and that ERG will make sure it's clarified.
9. David Brown said application techniques and impact on non-target organisms needs to be recognized and cited a list of publications and other resource information to review. Beth Card said they can read that and offer responses.
10. Christopher Horton asked why there was a focus on toxicity and pyrethroids in report? Isn't toxicity evaluated by EPA during registration and other risk assessment processes? Are EPA standards for product registration not satisfactory? Dr. Brown explained toxicity is a main concern as stated by EPA and they used EPA categorizations. ERG was looking at inherent toxicity of the chemicals and not risk. EPA does comprehensive risk assessments.
11. Patti Page asked, given the high level of toxicity to aquatic life, how can you protect non-target arthropods, especially with resistance in crustaceans? Dr. Brown referred to the sixth report that

outlined the best approaches to minimize the impact to non-target receptors. Patti Page followed up with concerns about impacts on lobsters and lethal effects on lobsters.

12. Jane Alessandra identified an error in report on p. 241, saying most window ACs do not have features to close out outside air. Beth Card said they can review and correct, if necessary, in the errata sheet.
13. David Brown said thank you, and Beth Card thanked him for his questions and comments.
14. Will video of this meeting be available online? Caroline Higley said the meeting was not being recorded and minutes will be posted as soon as the task force votes on them at the next meeting. She also said the presentation will be posted online.

Richard Robinson raised an additional question about being able to refer back to this Q&A and have it be distributed. Beth Card said she was not sure how it would be saved but was assured it would be. Richard also noted some errors to correct on the errata sheet and asked how to do it. Beth Card said those should be submitted by 9.17.21 directly to Caroline Higley if they're from task force members. Members of the public should submit through the public comment page.

Beth Card said that EEA would be collecting feedback and recommendations for clarifications and questions through 9.17.21. Errata sheet will be developed and shared and Q&A will be reviewed and saved. Next steps will be working to start getting some of the subcommittee meetings and full task force meetings scheduled.

Heidi Ricci asked for clarification about comment submission for the task force and public via the comment portal, or if task force members can submit them directly to Caroline Higley? Beth Card said yes, they will be submitted and then EEA will look to compile all the feedback received and that will be useful for subcommittees to have as they are deliberating as well. Caroline Higley also noted there's a difference between comments received related to perspectives/opinions and factual corrections. If task force members email her directly, it will be easier to parse apart, but the members can submit via general comment portal, too.

Beth Card then sought a motion and second to adjourn. John Lebeaux made the motion, which Jennifer Pederson seconded. Roll call ayes. Meeting adjourned at 1:58 p.m.

Requested Correction: After meeting ended, Helen Poynton indicated that the average amount of sumithrin sprayed during spraying events in MA (based on table 4.2 of the MCTF Report) is 0.0037 lbs active ingredient/ acre, and requests to amend Q&A response, to confirm that the public commentor was correct.