

Oliver Pierson, Lakes and Ponds Program Manager, Vermont DEC
Testimony to Senate Natural Resources Committee in Relation to House 31
April 27, 2023

Good Morning and thanks for the opportunity to speak to you today. My name is Oliver Pierson and I manage the Lakes and Ponds Program for the Vermont DEC. This program administers the statutory aquatic nuisance control (ANC) permitting program on behalf of ANR, monitors the health of lakes and ponds in our state, and manages these water bodies so that all designated uses in our Water Quality Standards, including swimming, boating, fishing, aesthetics, and aquatic habitat uses, can be enjoyed by Vermonters and our visitors.

I would like to address a number of points in relation to House 31 and ANC permitting in Vermont, namely:

- Aquatic Invasive Species in Vermont
- The process we use to adjudicate ANC permit applications for use of chemicals under 10 VSA 1455, including some information on how we assess public benefit
- Review of the impacts of Procetta Cor on the non-target environment
- Impact of treatments done to date on Lake Ecosystems
- The ANC Rulemaking Effort, that is ongoing and that the Lakes and Ponds Program is leading

I have also shared a number of documents with the committee, namely:

- Our ANC Permit Application Internal Review Procedures
- A document DEC published entitled “Permitting Aquatic Herbicide Projects in Vermont”
- Public Benefit Determination Process

Aquatic Invasive Species in Vermont

Aquatic Invasive Species or AIS are a significant threat to our lakes and ponds, the aquatic habitat they provide, the aquatic biota that reside in these water bodies, the recreational opportunities these water bodies provide, and the economic benefits to the state that are derived from these water bodies. AIS are now in over 100 of our lakes and ponds, and are increasing on annual basis, with three new water bodies infested by Eurasian Water Milfoil in 2022 alone. Water Chestnut, Zebra Mussels, Hydrilla, and Spiny Waterflea are a few other species of invaders that we are dealing with. Left uncontrolled, AIS can take over water bodies, dramatically change their composition, negatively impact habitat and recreational opportunities, and lead to decreased property values, all outcomes that we are working hard to avoid through our control efforts. We have a limited toolkit to prevent the spread of AIS and maintain existing uses in our infested water bodies, with education and outreach efforts being the most important and effective tool at our disposition. The ANC Permitting Program provides Vermonters with a number of well-documented approaches to controlling AIS, and we always seek to use the least intrusive feasible approach when permitting control projects. Indeed, approaches like bottom barriers, diver-assisted suction harvesting, and mechanical harvesting make up the vast majority of our control projects. However, these approaches are time-

consuming, expensive, can't really be implemented over large areas, and in the case of mechanical harvesting, can lead to increased proliferation of AIS. Therefore, in some cases, the only feasible alternative to control AIS and avoid all the negative impacts of these species on our lakes and ponds I just mentioned is to use the class of chemicals defined as pesticides in our ANC Statute.

Adjudicating ANC Permit Applications for Use of Pesticides, including herbicides and lampricide

In order to issue a permit for use of pesticides to control an aquatic nuisance, the applicant must demonstrate and DEC must agree that five statutory findings can be made:

- (1) there is no reasonable nonchemical alternative available;
- (2) there is acceptable risk to the nontarget environment;
- (3) there is negligible risk to public health;
- (4) a long-range management plan has been developed which incorporates a schedule of pesticide minimization; and
- (5) there is a public benefit to be achieved from the application of a pesticide or, in the case of a pond located entirely on a landowner's property, no undue adverse effect upon the public good.

DEC has processes in place to make these determinations, in collaboration with other state departments, and we believe this framework provides a suitable point of departure for making these determinations. Our ANC Statute also allows for rulemaking, an effort that has not been completed yet but has been begun, which I will talk about more later. But we have been using these five statutory findings to make evidence-based decisions about herbicide permit applications and incorporating feedback from experts in DEC, VDH, and FWD into the process. As Commissioner Beling mentioned yesterday, to help us make findings 2 and 3 above, we have voluntarily established the ANC Internal Review Procedures, where we actively solicit input from drinking water experts, toxicology experts, plant biologists, fisheries biologist, wetland ecologists, and limnologists. These procedures, which have been approved by all three relevant commissioners, constitutes the most participatory approach to a permitting decision that I am aware of in Vermont, and ensures that concerns across the spectrum of potential impacts are addressed. While these procedures clearly state that, as defined in statute, DEC has the final say on permitting decisions, they establish a framework for accountability around these decisions, and if we choose to not incorporate feedback from one of our sister departments, something that has not happened in my four-year tenure with DEC, we have to explain our rationale for this decision in writing. I believe this approach, with one entity in the lead for decision making but seeking input in a transparent and accountable manner from relevant experts is preferable to an approach where multiple state departments have to jointly make a decision, an approach that could lead to confusion or stalemate, reminding me of the phrase "how many ships do you know of that have more than one captain?" And our efforts to consult experts have been very useful in ensuring ANC control projects do not negatively impact Rare, Threatened or Endangered Species, preserve suitable habitat for fish and other species during and after a treatment so that we avoid long-term negative impacts, ensure drinking water

resources are protected and water quality standards are met, and ensure there is no significant risk to public health. And this feedback is incorporated into our actual permits as terms and conditions, and I encourage you to read one of these permits to see how this is done.

I understand there is some interest in how we make our determination that there is a PUBLIC BENEFIT to be achieved from a proposed ANC control activity. Here we used another piece of the existing statute, namely section 10 VSA 1458(c) on how to prioritize use of grant funds, to provide us with a framework for making the public benefit determination. This piece of statute tells us to consider the following elements:

- (1) public accessibility and recreational uses;
- (2) the importance to commercial, agricultural, or other interests;
- (3) the degree of local interest, as manifested by municipal or other contributions to the project;
- (4) local efforts to control aquatic nuisances;
- (5) other considerations affecting feasibility, probability of achieving long-term control, and necessity or advantage of the proposed work; and
- (6) the extent to which the control project is a developmental rather than a maintenance program.

Using this text, we developed a process to make the public good determination which I have shared with this committee.

Review of the impacts of Procella Cor on the non-target environment

House 31 seems to have originated out of concerns regarding potential use of an herbicide called Procella Cor to control Eurasian Water Milfoil in Lake Bomoseen. We first authorized use of Procella Cor in Vermont in 2019, and it has only been used on 10 water bodies in the state to date. Once Procella Cor was registered with both the EPA and the AAFM, DEC worked in collaboration with the Vermont Pesticide Advisory Council, the Vermont Agency of Agriculture, Food and Markets, the VDH, and the FWD on reviewing the technical merits of this new aquatic herbicide. After extensive review, ProcellaCOR was found to be an aquatic herbicide that could likely fit within the current suite of Eurasian watermilfoil management tools that are used in Vermont. After several years of permittees implementing ProcellaCOR projects, the DEC continues to assess ProcellaCOR as a Eurasian watermilfoil management tool to determine whether the assumptions made on ProcellaCOR were accurate and to determine if there needs to be any changes to how ProcellaCOR projects are permitted. To date, ProcellaCOR projects have been approved for the following reasons, and I share this information to demonstrate to the committee the serious and thorough review that takes place for an herbicide permit application under the current statute:

- ProcellaCOR is highly specific to controlling Eurasian watermilfoil, an aquatic invasive species, when used at low concentrations, which is the approach used to date in Vermont's waters.

- Negative impacts on beneficial native aquatic plants are anticipated to be minimal to none (i.e., an acceptable risk) while it's anticipated that there will be an overall benefit for the native aquatic plant community.
 - To evaluate this determination using data collected in Vermont, DEC's Lakes and Ponds Program conducted a pre- and post-treatment statistical analysis of the aquatic plant survey data from Vermont waterbodies treated with ProcellaCOR, which is available on our ANC webpage. In summary, the analysis showed that after a ProcellaCOR treatment, there was a statistically significant decrease of the lake-wide frequency of occurrence for Eurasian watermilfoil (target aquatic invasive species) and coontail (non-target native species) as well as there being a statistically significant increase of the lake-wide frequency of occurrence for the beneficial native species Illinois pondweed and American eelgrass. The impact on coontail was anticipated and, this impact has been determined to be an acceptable risk, largely because coontail populations have been shown to persist after a treatment, reover, and have not been extirpated from a waterbody.
- Regarding the statistically significant increase in several beneficial native aquatic plant species and the remainder of native aquatic plant species having no observable impact, this is viewed as a positive impact on the overall biological integrity of native aquatic plant community. These results demonstrate that targeted Eurasian watermilfoil control projects are not resulting in the suppression of all aquatic plant species lake wide, that native plant species can reestablish in areas once dominated by Eurasian watermilfoil, and that the benefits of the structural habitat provided by aquatic plants remain.
- ProcellaCOR rapidly degrades in the environment. Using a minimum concentration detection limit of 1 part per billion (ppb), nearly 100% of post treatment sampling found that ProcellaCOR is undetectable in the water 48 hours after treatment.
- The potential for acute and chronic risks to fish, aquatic invertebrates, amphibians, and other aquatic animals is considered low at application rates of 3 – 5 Prescription Done Units (PDU) / per acre-foot (range 5.79 – 9.65 ppb/acre foot). Any potential chronic toxicity of concern would be short lived due to dissipation in the environment. Acute and chronic risks are further limited by the functional solubility of the product.
- The potential for acute risk to macroinvertebrates is expected to be low, and this finding has been confirmed for invertebrates based on a study conducted by the New York DEC on a Peconic River ProcellaCOR treatment area. See this website for general information about the treatment and the specific study is available here.
- VDH has on multiple occasions provided a more favorable review of ProcellaCOR compared to other older herbicides that have previously been approved. This latest review that was performed by VDH's State Toxicologist in March 2022 in specific response to the Lake Bomoseen Association's Permit Application for ProcellaCOR, which includes the following statement: o Based on a review of the confidential statement of formulation, it is reasonable to conclude that human exposure to the inert compounds contained in ProcellaCOR at the concentrations that would result under the conditions proposed by the applicants, is not likely to result in an increase in the level of concern for public health.

- The DEC's Drinking Water & Groundwater Protection Division (DWGWP) acknowledges the presence of public and private drinking water systems that draw waters treated with ProcellaCOR as well as groundwater drinking water systems that may be adjacent to a treated. DWGWP does not have concerns with the use of ProcellaCOR provided the conclusions from VDH have not changed and that treatment concentrations do not exceed 5 PDUs.

So, as a result of all this information, we feel comfortable permitting Procella Cor projects in certain lakes and ponds and that the 5 statutory findings can be made. However, we have also denied herbicide permit applications as may have been mentioned, and we evaluate every application on a case by case basis.

Impact of treatments done to date on Lake Ecosystems

So what has been the impact of treatments done to date on the ten lake ecosystems where we have authorized use of procella cor? Well we know what is happening with aquatic plants thanks to the plant survey work I just mentioned, that Procella Cor is effective at controlling milfoil, it has no negative impacts on all other native plants except short term impacts on coontail, and two species of plants have increased in occurrence after treatments were made, which is the ideal outcome. In terms of the impact on Vermonter's ability to use lakes for recreation, I encourage you to listen to Pat Suozzi's detailed testimony in front of House Energy and Environment regarding the impact of the treatment at Lake Iroquois. The Iroquois Treatment required a lot of work and public consultation, and I won't go into a lot of detail, but prior to 2021, the lake was suffering from an extensive milfoil infestation that made swimming, boating, fishing, and other uses difficult or impossible in much of the lake. Other less-intrusive measures to control the milfoil there were not working. Use of the public beach and the public access area had both decreased significantly. So, 37 acres of the lake, out of a total of 247 acres or less than 15%, were treated with Procella Cor in 2021, and we did not find any negative impacts to the non-target environment after the treatment. More importantly, the lake recovered in a meaningful way, with increased frequency of occurrence of native plants, little to no milfoil found in plant surveys in 2022, no need for a follow-on treatment in 2022, and use at the access area tripled from 2021 to 2022. To me, these results indicate that the treatment on Lake Iroquois was a success and I believe this was due to the thoughtful and deliberative process that went into permitting the treatment under the current statute.

The ANC Rulemaking Effort

Finally, I want to speak about the ANC rulemaking effort that began in 2022. As mentioned, ANR has not done rulemaking under the ANC Statute, although this was envisioned by the legislature in 10 VSA 1460. After having gone through some difficult permitting decisions, we decided to prioritize this rulemaking effort in early 2022, and received the green light from leadership to begin working on it later last year. Given the significant interest in aquatic nuisance control in our public waters, we formed a pre-rulemaking focus group comprised of 21 representatives from a diverse array of interests, including fishing organizations, lake associations, municipalities, environmental groups, retail stores dependent on healthy lakes and ponds, state experts, a lake management expert, a university botanist, and legislators

(Chesnut Tangerman and Masland). To be transparent, we established a website where working documents and meeting minutes are posted for all to review. And we established clear goals for the pre-rulemaking effort, centered around three rulemaking themes:

- Theme 1: Develop definitions for terms used in the statutory findings (e.g., acceptable, reasonable, negligible) as well as refine definitions in statute (e.g., aquatic nuisance)
- Theme 2: Develop public good determination review criteria
- Theme 3: Better define permit application requirements and ANC jurisdiction

This group has met four times and we are still working on theme 1, and we will continue our work until the focus group has provided input on all themes and then reviewed and commented on the draft rule. As Commissioner Beling has stated, DEC believes that rulemaking gives us authority to address the concerns that have been raised around this statute, and we are poised to make important improvements this year.

However, if House 31 passes as is, our rulemaking effort may need to be put on some sort of pause, as it may not make sense to continue making rules for a statute that is about to change. From my perspective, I think the Vermonters would be better served by allowing this group of 20+ plus experts perform rulemaking to rapidly improve the existing statute than yet another study committee of only 4 legislators and 3 state experts working to make recommendations for statutory change that may or may not be enacted in the next legislative session. I will therefore conclude my remarks by asking this committee to allow us to continue our ongoing rulemaking efforts, implement these new rules, and if that doesn't address the concerns around ANC Permitting in Vermont, to then revisit the possibility of statutory change. Thanks for your time.