

**Vermont Endangered Species Committee (ESC)  
1-14-2021 Meeting Minutes**

**Attendees:**

**ANR Secretary:** Julie Moore

**ESC Members:** Allan Strong (Chair), Liz Thompson (Vice Chair by phone), Bryan Pfeiffer, Paul Wieczoreck, Jim Shallow, Alan Calfee, Louis Porter (Commissioner of Fish & Wildlife (FWD)), Mark Scott (FWD Commissioner's designee), Cary Giguere (Secretary of Agriculture, Food, and Markets designee)

**Non-members:** Jim Andrews (Reptile and Amphibian SAG), Bill Kilpatrick (Mammal SAG), Kent McFarland (Invertebrate SAG), Art Gilman (Flora SAG), Patrick Parenteau and Mason Overstreet (VT Law School), Jeff Parsons (Arrowwood Environmental), Chris Fastie (Salisbury, Forest Ecologist), Zygmunt Plater (Boston College Law School), Alan Graham (retired state entomologist), Catherine Gjessing (FWD General Counsel), Bob Popp (FWD Botanist), Will Duane (FWD Executive Assistant), Penny Percival (ANR Executive Assistant), Alyssa Bennett (FWD Small Mammal Biologist), Steve Parren (FWD Wildlife Diversity Manager), Patti Casey (Agriculture, Food, and Markets), Peter Maliky, Andrew Cliburn, Christopher Eaves, Judy Rosovsky, John Dillon, Gabriel Tempesta, Francis DiMora

**Scheduled ESC Meetings for 2021:**

9:00 AM – 2 PM (online)

22 April 2021

16 September 2021

**Call to Order:**

Allan Strong opened the online Microsoft Teams meeting at 9:10 AM. Allan introduced himself as did other ESC members. Thanks to Penny Percival for setting up the online meeting.

**Comments from the public not related to the agenda:**

None

**Additions, deletions, or changes to the agenda:**

None

**Approval of minutes from the 17 September 2020 meeting:**

**MOTION:** *By Bryan Pfeiffer, seconded by Alan Calfee, to approve the 17 September 2020 minutes with suggested revisions.* Minutes were approved.

**Approval of minutes from the 4 December 2020 meeting:**

**MOTION:** *By Paul Wieczoreck, seconded by Jim Shallow, to approve the 4 December 2020 minutes.* Minutes were approved.

**Secretary's Report – ANR Secretary Julie Moore:**

The Secretary acknowledged that Liz Thompson is stepping down from the ESC. The Secretary thanked her for her service and contributions.

The Secretary stated that she had consulted with staff and approved the following listings, delistings, and critical habitat designations.

List Rue Anemone as endangered.

List the American Bumble Bee as endangered.

Uplist Brook Floater from threatened to endangered.

List the Eastern Meadowlark as a Threatened species.

Designate three state-endangered Common Tern Nesting Islands as critical habitat.

Designate four Spiny Softshell Turtle nesting beaches as critical habitat.

Designate Aeolus Cave as critical habitat.

Delist the Bald Eagle.

Delist Canada Black Snakeroot

FWD met with Agriculture, Food, and Markets Secretary and staff with the focus being on Eastern Meadowlark and American Bumble Bee. Agriculture, Food, and Markets will suggest some draft text for the rule. VTrans employees have been notified by email and we are waiting for their reply. The Agency of Commerce and Community Development was notified, and they responded that they had no concerns. Forests, Parks, and Recreation (FPR) has indicated that they are okay with the proposal. Landowners and managers for all proposed critical habitat designations were contacted, including FPR.

Allan Strong asked if ESC and SAG members might be helpful to the rule-making public process. The Secretary indicated it would be helpful and Mark Scott will later provide the public hearing date. Staff will answer some questions during the hearing if they can be done briefly, but the purpose of the meeting will be to listen to public comments. Questions needing a longer, detailed response will be posted later on the Department's website, with other rule information. Steve Parren will give an overview at the hearing and mention link to the FWD website. People may ask questions online. Jim Shallow asked about Agriculture, Food, and Markets' suggested changes. Cary Giguere responded that the language will be similar to that previously added for earlier bee listings including working with farmers if land needs to be taken out of production for the Meadowlark.

**Action:** Mark Scott will provide the ESC with notice of the endangered and threatened species public hearing date.

Next step is to file rule with Interagency Committee on Administrative Rules (ICAR). This would likely occur either 2/18/2021 or 3/25/2021

If we file with ICAR on 2/18/2021

ICAR meeting Monday 3/8/2021

Secretary of State filing 3/11/2021

Posted Online 3/17/2021

Published in Newspapers 3/25/2021

Public Virtual Hearings the week of 4/19/2021

Deadline for Comment - No less than 7 days following last hearing  
File with Legislative Committee on Administrative Rules (LCAR) in late April or early May

If delayed and we file with ICAR 3/25/2021, it would push filing with LCAR into June.  
(Note: Filing with ICAR is likely to be 3/25/2021)

Steve Parren mentioned that adding a species to the process, as is being proposed today, could require more notifications. Mark Scott stated that LCAR most likely will be holding its meetings virtually, which are open to the public.

(Note: LCAR allows people to testify but they have to have contacted LCAR ahead of time to get on the schedule. LCAR does not recognize people in a meeting.)

Act 250 modifications are the ANR's focus of this Legislative session. Commissioner Louis Porter is the ANR point person. A wildlife permit is being proposed. This may help us engage in forest fragmentation issues. The modifications will also include concentrating development in downtowns and addressing recreational trails with FPR taking the lead on that. The Governor will give his budget address on 1/21/2021 and the state budget is not as bleak as feared, but still challenging. The State Parks fund is especially challenging.

The Vermont Climate Council met three times. Greenhouse gas reductions and resiliency will factor into the climate plan.

**Commissioner's Report – FWD Commissioner Louis Porter:**

Commissioner Porter thanked Liz Thompson for her ESC involvement. He thanked her for the Wetland Woodland Wildlife book co-authorship with FWD staff and also for her involvement with deer hearings, addressing how trees are impacted. The FWD has the same number employees as when Governor Scott started, but asked to do a lot more. Increased hunting and fishing participation is good but also increases staff workloads. CARES Act funds allowed for enhanced public access projects within a 2.5-month timeframe. There was a very tight timeline to qualify for the funds. A Fish and Wildlife app was developed that will help people access FWD information.

We have not done an endangered and threatened species virtual hearing before and it will likely reach a large audience, but it is different than in-person hearings. Having people from the ESC participate who know the background would be helpful. Legislators ask, "what are you doing about it". Listing can be educational, but it is important to take actions.

The FWD is very involved in the A250 process and a lot of prefile work occurs with applicants to review project design and minimize impacts. Staff discuss projects with A250 Commissions. FWD gets no funding for this and therefore hunters and anglers are paying for our involvement. The Legislature did not support providing FWD funds for this in the past. We are proposing a Wildlife and Riparian Habitat Permit to cover work FWD staff are already engaged in. Consistent, effective involvement that is funded is our goal. We are hard pressed to continue the FWD involvement without funding. Jim Shallow applauded this effort and suggested robust public engagement that would benefit the process. Commissioner Porter stated that this change will increase public engagement in a formal manner. There would be a presumption of compliance if a wildlife permit is issued. Bryan Pfeiffer asked about how the

funding would work. There would be a permit fee or a bill back approach. Language changes to the Act 250 criteria might include fragmentation of forests and riparian areas and habitat connectivity. Vermont Conservation Design (VCD) engagement is expected via the FWD. A rebuttable presumption of compliance would be expected if a wildlife permit were granted. Jim Andrews stated he was in support of a permit fee and also supports other user fees for wildlife-related activities. Commissioner Porter responded that the FWD has been lucky to get more General Fund, but a permit fee would be related to scale of the project and bill back would related to time spent.

### **Discussion of mosquito spraying and bats:**

Allan Strong suggested four components should be followed regarding interactions/dialogue:

Suspending judgement

Identifying assumptions

Listening

Inquiry and reflection

### **Mark Scott - Brief introduction**

Mark Scott thanked the ESC for putting together the meeting agenda. FWD goes through a permitting process that strives for consistency and transparency. Sometimes upper-level management needs to get involved in permit discussions. We have reflected on the discussions and materials shared so far. We have had internal meetings with staff. We work for the Secretary and provide her advice as staff.

Commissioner Porter added we wanted the ESC to hear directly from the people who are involved in the internal process. Mark Scott stated that reaching out to others is a real plus for our staff on biological issues. It is not the role of staff to develop policy, but to provide the science.

### **Alyssa Bennett - Science as it relates to pesticides and bats**

Alyssa Bennett is a FWD Small Mammal Biologist who is focused on bat conservation and management, and disease response (WNS and Covid virus). She stated that she is not an expert on pesticides and their effects on bats so her review on this subject is based on the available scientific literature and her more extensive knowledge of bats and the mosquito district where she has trapped and tracked bats and worked with homeowners and landowners. Bat colonies are monitored in the spray district. Alyssa stated that she appreciated the work that Mr. Parsons put into assembling the literature on this subject. She told the ESC that she continued to look into the information presented, including reading many of the referenced sources as well as additional research and publications on these insecticides. Spot checking of several research references in the Parsons' report led to erroneous references, secondary sources, and misrepresentations of the information or research results presented by the authors and primary researchers on several occasions including Hernandez-Jerez 2009, O'Shea and Clark 2002, Wray et al. 2018, and Kannan et al. 2010.

Alyssa stated the following regarding Malathion and bats.

- I could not find in either the EPA or the references in the Parsons' report, any direct research, survey work, or data collection indicating the effects of Malathion on bats in a laboratory or field setting.
- Malathion is not known to greatly accumulate in fat tissue, one of the main concerns about pesticides and bats.

- Sparks 2006 looked for organophosphates in bats in Indiana submitted for rabies testing. They found low levels of other insecticides, but specifically not Malathion or any pyrethroid insecticides.
- The EPA biological evaluation determined that Malathion could have high risk to Indiana and northern long-eared bats by affecting aquatic phase insects that bats could eat and affecting bat behavior by interrupting locomotion, grip strength, and feeding behavior. The evaluation indicated high confidence in the risk assessment regarding prey (though Mr. Parsons agrees that prey abundance is not a limiting factor for the low populations of endangered and threatened bats), but only medium confidence in the behavioral effect, with the conclusion based on the fact that all the research has been done on other orders of mammals, not bats. Substantial differences in how bats respond to toxins as compared to rodents or other orders of mammals (either more or less) was evident in several laboratory studies and papers on this subject.

Alyssa stated the following on Permethrin and bats.

- Does bioaccumulate in insects and fat tissue. Detectable in a handful of little brown and northern long-eared bats in Missouri caves (McFarland 1998).
- Claim that Permethrin impairs ability of little brown bats to fly was incorrectly referenced to a secondary source summarizing this information (O'Shea and Clark 2002). The original laboratory study (McFarland 1998) was not referenced in the letter. In McFarland's thesis work, a laboratory dose of twice the field grade impaired flight in 50% of the bats.
- Permethrin could not be detected in tissue of bats roosting in permethrin-treated bat houses according to Shore et al. (1991). Racey and Smith (1986) also treated plywood with various insecticides and fungicides and specifically found no noticeable effect of Permethrin or any of the synthetic pyrethroids after 16-22 weeks in contact with the treated wood.

Alyssa provided the following general information about impacts of pesticides and other contaminants on bats.

- The Parson's report outlines evidence of other contaminants or pesticides being transferred through mother's milk, and the potential for pesticides to impact bats through wing membrane tissue, inhalation, and grooming, but there are no references specific to Malathion or Permethrin that I could find. In fact, the authors that are referenced for these potential sources of harm ***(Hernandez-Jarez et al. 2009) actually conclude that we do not have enough information to assess the level of risk from these methods of transmission.***
- Malathion is an organophosphate insecticide and Permethrin is a pyrethroid insecticide, yet several of the references used in the Parson's report to draw conclusions about the potential impacts of these toxins on bats refer to a different class of pesticides called organochlorines. Many organochlorines, such as DDT were later banned because they are highly persistent organic pollutants in the environment, as opposed to organophosphates, which degrade rapidly when exposed to light, air, and soil. Organochlorines such as endrin and dieldrin have been highly studied and shown impact gray bats and Indiana bats in the 1970s and 1980s, but do not appear in these high concentrations in most of the recent sampling efforts, suggesting lower environmental presence in recent decades due to banned use (O'Shea and Clark 2002). They studied little brown bats in the lab with high doses.
- Lab work does not always reflect field effects. Permethrin is measurable in the brain tissue of sacrificed bats and organophosphates, which could include Malathion, can be inferred based on measured inhibition of cholinesterase in the brain. This type of field research/collection is likely

rare due the inherent challenges of such work, including sacrificing rare, threatened, and endangered species.

Regarding local population trends, Alyssa stated:

- Our best information is on summer populations, post-WNS, of little brown bats. After nearly a decade of monitoring summer maternity colonies with the help of volunteers, we have observed colony sizes stabilizing or in some cases increasing slightly in the Champlain Valley, including towns within the district.

Additional references not cited in Mr. Parsons' letter, but referenced here:

McFarland, C.A. (1998). Potential agricultural insecticide exposure of Indiana bats (*Myotis sodalis*) in Missouri [Unpublished Master's Thesis]. University of Missouri-Columbia.

Shore, R.F., D.G. Myhill, C. French, D.V. Leach, and R.E. Stebbings. 2001. Toxicity and tissue distribution of pentachlorophenol and permethrin in pipistrelle bats experimentally exposed to treated lumber. *Environmental Pollution* 73(2):101-118.

Sparks, D.W. 2006. Organophosphate insecticide residues in bats from Indiana. US Fish and Wildlife Service Biological Report. February 2006.

Results later published as Eidels R.R., J.O. Whitaker, and D.W. Sparks. 2007 Insecticide residues in bats and guano from Indiana. *Proceedings of the Indiana Academy of Science* 116(1):50-57.

Racey, P.A. and S.M. Smith 1986. The residual effects of remedial timber treatments on bats. *Biological Conservation* 35(3):205-214.

Alyssa commented that we have identified pesticides as a potential threat to bats in our Wildlife Action Plan and it is possible they may be one of many factors leading to cumulative effects on bats.

They have been some references to organochlorines, but these are not the pesticides being used in the spray district. Paul Wieczorek asked about the acute toxicity of Malathion. Alyssa found no information on impacts to bats. Paul also asked if chemicals are less expensive than biological controls. Alyssa responded that she did not know. Cary Giguere stated that the bacillus products are larvicides and are not spray treatments for adults. He said that Permethrin costs about \$200/gal and that Malathion costs about \$20/gal. Bill Kilpatrick asked about little brown bat population stability due to recruitment from outside. Alyssa stated that counts are made before and after pups fly, but this is not a robust method for measuring recruitment. Pooling data from multiple colonies does indicate a stable or slightly increasing trend overall. Some work is occurring at a Newfane colony by a PhD student using mark-recapture to answer the recruitment question. Bill Kilpatrick also asked about variability among organophosphates. Alyssa responded that only one paper mentioned Malathion specifically (Sparks 2006). Jim Andrews asked Cary Giguere about the district spraying being paid for by towns and larvicides paid for by the state. Cary Giguere replied that his agency does fund the spray districts \$70,000 for larvicides. The BLSG Spray District conducts town votes each year on the spraying.

Allan Strong asked about the EPA risk assessment result of adverse risk and why was Alyssa less confident. She replied that assessment is a first step and usually additional steps are needed. When the process continues the results often drop species from that of the initial model results after specific

species are considered. Bats and mice are physiologically different. She shared that she had a hard time finding specific findings relating to bats. Catherine Gjessing added that pesticide registration is complicated with different standards than a permit and their assessment of “may affect” leads to another step including consultations with other agencies. Jeff Parsons stated that Alyssa was right about the assessment. The next phase does not include field work and is limited to more detailed lab applications. The original assessment found that Malathion was likely to have an adverse effect on long-eared and Indiana bat species. Bryan Pfeiffer asked Alyssa about Catherine Gjessing’s memo stating, “reasonably likely” and when is there a transition from “possible” to “reasonably likely”. Alyssa stated she was surprised that bats in roost boxes did not appear to be negatively impacted when Permethrin was sprayed directly into a box. Cary Giguere stated that “for public health” the Health Department and the Agency of Agriculture, Food, and Markets are jointly charged with vector surveillance and it is not the responsibility of spray districts. Jeff Parsons added that he was also surprised about the roost box study. He went on to say that bat wings are a pathway for pesticide absorption, and they have a large surface area compared to body size.

### **Steve Parren – Relationship to past takings permit decisions**

Steve stated that he is a FWD biologist who has been involved with the conservation of endangered and threatened species, including the review of endangered and threatened species permits for three decades. He told the ESC that his role has been to evaluate possible impacts of proposed activities on listed species and make recommendations to the permitting authority (Commissioner and Secretary) for issuance and conditions of a permit. He shared that he also reviews FWD applications for federal grants needing Section 7 compliance consideration for potential impacts to federally listed species. FWD staff often solicit the advice of other biologists and the SAGs. Steve stated that he has provided advice about if a permit is needed a few times. FWD staff use the best available information, knowledge of our permitting history, and our professional judgement to determine if there is a reasonable likelihood of take compared to acceptable activities that we expect to normally occur (e.g., driving a car or cutting firewood). Steve stated that staff try to be both fair and consistent but operate in an environment where the combinations of species and proposed activities often present unique situations. If a proposed activity includes wading a river where a listed mussel may occur, staff might consider the likelihood that people legally fishing might wade the river also.

Steve indicated that as a FWD biologist, he considers how likely it is that a listed species will be injured, killed, or seriously impacted in a manner that could impact its long-term survival or possibly impact the local population. There is no algorithm or equation that computes an outcome of grant the permit or do not grant the permit that can be uniformly applied in all cases. Staff try to provide protection for the listed species while being reasonable in our recommendations. If an activity can be modified in such a manner that staff feel an impact is unlikely to occur or be serious, we may decide a permit is not needed. Steve shared that he once reviewed a bridge repair project within the broad summer range of the Spiny Softshell Turtle. It was decided that if the workers checked cofferdams each morning to be sure no turtles had become trapped, then no permit would be needed. If an activity can be changed or moved in such a way that a species will not likely be impacted, staff might not recommend a permit. In the Section 7 compliance arena this is referred to as “species present, not likely to adversely affect”. Steve stated that he tries to compare what is being proposed to activities we encounter in our daily lives. Someone wading a river might step on and damage a freshwater mussel. Someone driving a car might run over a listed snake. Someone power washing their house might flush bats out from under a shutter. Cutting a small dead elm might dislodge a bat roosting under loose bark, something he personally witnessed.

Steve went on to say that FWD staff did recommend issuing a permit for opening up an abandoned slate quarry. FWD staff documented bats were roosting in the slate piles and would be impacted by the operation of a quarry. Bryan Pfeiffer asked about bats in houses and incidental take. Steve deferred to Catherine Gjessing who said she would get back to the ESC on this question. Alyssa Bennett added that a response is dependent on potential rabies exposure. Bryan Pfeiffer asked if homeowner would be exposed to rabies? Alyssa stated that some bats in homes do test positive for rabies.

**Action:** Catherine Gjessing offered to get back to the ESC on the question about how homeowners with bats in their homes are covered for incidental take by the General Permit.

Allan Strong asked a hypothetical question: if the spray district had asked FWD directly if a permit was needed, what would FWD have done? Steve responded that FWD staff try to be fair and consistent but others with policy and legal backgrounds are involved. Mark Scott added that the EEE spray issue resulted in meetings with the Agency of Agriculture, Food, and Markets and the Health Department to discuss the issue. Catherine Gjessing stated that we sometimes persuade someone not to apply because the permit is not likely to be issued. The FWD has an avoidance and minimization approach and can impose mitigation. Jim Andrews talked about Steve's example of cutting a tree or walking across a river that would be challenging to regulate, but the spraying is by the district covering several towns that are known to have bats. Permits we have reviewed include road work and the laying of a cable and Jim indicated that the district spraying feels similar to him. Bill Kilpatrick stated that several thousand hectares are exposed to pesticide spraying. Cary Giguere added that the spray district is not the only entity that sprays for mosquito. It might happen at a public event like an outdoor graduation. The district has a spray license for control of mosquitos. The public can purchase Malathion.

### **Catherine Gjessing - Legal standards involved**

Catherine Gjessing stated that the ESC advises the Secretary. There are times the Secretary may want to review third party requests. In 2010, the EPA and USFWS requested a National Academy of Sciences risk assessment. Vermont has an endangered species law that has language that is similar to the federal jeopardy language. Vermont's taking definition is different and includes "risk whether or not injury occurs" that applies to harassing, wounding, and similar language used for hunting, fishing, trapping regulations. Permitting is based on analysis of something that has not yet happened. Life is risky and you might run over a listed species. We need a reasonable indication of impact. Alyssa Bennett did a lot of research and there is possible risk, but it is not reasonably likely based on the evidence we have today. The concept of nexus follows that there is some relationship between intent and impact. The state is interested in protecting bats, but impacts are unclear.

Allan Strong referenced Catherine's memo that lists 5 criteria that seem to constrain how risk is determined. Catherine said there is discretion because there may not be certainty. Is there likely to be an adverse impact? Allan followed up about risk and uncertainty. How many individuals need to be impacted? Catherine responded that if bats are in a slate pile and you move the slate, it is likely bats will be impacted. One individual bat being killed is an adverse impact. It is less certain that spraying will clearly impact bats. Bryan Pfeiffer asked if we need to see a dead bat. Catherine replied no, but we need to think a take is reasonably likely to occur. Bryan Pfeiffer referenced the memo and criteria, and he stated an incidental permit is not prohibited by what is contained in the memo. Permitting allows for avoidance and minimization. Are you concerned by not permitting you are setting a precedent and is

there another way to constrain the spraying? Catherine asked, is spraying a taking? That is what we are discussing and what is the level of risk needed for a decision that a permit is needed? Precedent is always a concern and it can set a precedent in either direction, being too strict or too lenient. Commissioner Porter stated that this goes beyond legality and is a policy consideration. Professional judgements from staff are considered. Alyssa Bennett stated that these are challenging questions, and the literature may not provide all the clear answers we would like. She indicated she struggled with the slate quarry and the information gathered from survey work added to our understanding of how many bats might be in the quarry.

### **Mammal SAG – Science as it relates to pesticides and bats**

Bill Kilpatrick stated that the information needed to address risk is not easily available, and it may never become available based on bat lab studies. Risk models are not comparable to terrestrial mammals. Large wing membranes is one difference relating to pesticide exposure. Fur grooming is also a concern. Pesticides do not kill all insect and bats may forage on them. Spraying is not a rare occurrence in a localized area known to have bats. Bill concluded that there is a high likelihood of adverse impact. Field studies are more likely to catch survivors, not those that die. Paul Wieczoreck stated bats may have different physiology and these could make bats less susceptible to Malathion. Bill stated he would expect bats to be more susceptible due to energy expenditure and respiratory rates when foraging. Bats immunology related to WNS has been examined. Alyssa Bennett did not find information on Malathion related to bats in literature.

### **Patrick Parenteau – “Risk of injury” and precedence**

Zygmunt Plater and Patrick Parenteau were both available at the meeting. Patrick Parenteau stated that scientific uncertainty is often the case. FWD has plenty of expertise, but the Legislature set up the ESC to offer advice. A mix of science and law are involved in the discussion. Patrick Parenteau stated that he would focus on law, both state and federal. He stated that he believes that Vermont’s law is dramatically different than federal law. Vermont’s law does not require proof of injury or the likelihood of actual injury. Vermont law is designed to prevent injury. The risk of spraying pesticides is not speculative. It would be a precedent if a permit were not issued. Spraying presents a risk that is foreseeable and a discrete event. Lack of studies should not be a reason to not regulate. The goal of Vermont’s law is recovery. It would be a good precedent to issue a permit. Laying a cable in Vermont was permitted without direct evidence of a taking. Absence of evidence is not evidence of absence. Patrick Parenteau stated that he did not believe that Alyssa Bennett’s analysis undermined Jeff Parsons’ report.

Zygmunt Plater stated that he has national experience with endangered species law. He posed the question “how do you bring objective science into the process?” You do not always have definitive results and you need to use the information you do have.

### **Alan Graham – Options for avoiding and minimizing risk in mosquito spraying**

Alan Graham stated that he has collaborated with the Agency of Agriculture, Food, and Markets. He has identified nuisance mosquito species and the risk of disease transmission. The BLSG Spray District deals with nuisance species. Larvicide can be effective if well done. The number of mosquitos in District wetlands is huge. Adulticide and larvicide programs could be improved. An Integrated Pest Management approach was implemented for the larvicide program. The Agency of Agriculture, Food, and Markets would like to do this for the adulticide program. Two pesticides are used to try to prevent development of resistance in mosquitos. The Arrowwood (Jeff Parsons) study did not include wetland

restoration projects in Vermont. Reduction of reed canary grass can help control mosquito abundance. Wetland restoration reduced mosquito abundance and fish abundance, which are insect predators, increased. He suggests testing of rabies bats for pesticide levels.

Cary Giguere asked about the PCR testing that Alan had mentioned. Alan clarified that bats could be identified to species using PCR.

(Note: Discussion of mosquito spraying continued after lunch.)

Cary Giguere stated that people who were concerned about pesticides were advised to talk to their select boards. A suit by the Center for Biological Diversity has delayed EPA action on listed species for years. The Agency of Agriculture, Food, and Markets could institute a permit program. The Agency never likes to rely on one pesticide due to the potential for mosquitos to develop resistance. The Agency supports details of Catherine Gjessing's memo. Paul Wieczorek asked how the adulticide program could be improved? Alan Graham responded it could be an Integrated Pest Management approach, including when to apply adulticide. Conditions including stream flows need to be monitored. Cary Giguere shared that when Alan retired, the work continued under Patti Casey at the Agency of Agriculture, Food, and Markets. Jim Shallow asked how issuing a permit would impact the Agency of Agriculture, Food, and Markets. Cary Giguere responded that if an endangered and threatened species takings permit was issued, the Agency of Agriculture, Food, and Markets would consider how this could modify application under their authority.

Allan Strong asked FWD if anything said today has influenced their decision not to issue the permit. Commissioner Porter said no. Catherine Gjessing responded that she does not want to respond on science. She did indicate that she disagreed with Patrick Parenteau's assertion that any risk to a species requires a permit. Alyssa Bennett stated that she presented what she learned from the literature but that she does not see her role as more than that. Why isn't there an effort to reduce risk rather than have a permit issued?

Allan Strong asked each ESC public member to comment on what they thought could be next steps. Alan Calfee stated that he had no suggestions for next steps. Bryan Pfeiffer stated that he was not ready to recommend a permit until he thinks more and hears more from FWD, but he indicated he is leaning toward recommending a permit. Jim Shallow stated there was a lot to take in, and he was wrestling with next steps and what is the trigger for a permit. He indicated that he is leaning toward recommending a permit. Liz Thompson indicated that she was also unsure, conflicted about requesting a permit application but leaning toward recommending a permit. Paul Wieczorek stated that he struggles with how this issue is different than the lampricide permitting and is leaning toward recommending a permit. Allan Strong also indicated that he is leaning toward a recommendation to have a permit application submitted.

Bryan Pfeiffer said he was wondering if a different means to protect bats exist. Cary Giguere stated that he thinks protections for bats can be built into an Agency of Agriculture, Food, and Markets process without a takings permit. A draft Agriculture, Food, and Markets process is under internal review and

there will be a public process. The Agency of Agriculture, Food, and Markets is unlikely to implement a new program before next spring but likely by the following spring.

Jim Andrews urged the ESC to recommend that the Secretary request a permit application that explains how risks to bats will be minimized. Bryan Pfeiffer added that the ESC is advisory, and it may not make sense to ask the spray district without support from the Secretary. Jim Andrews clarified that he was suggesting a recommendation to the Secretary.

Allan Strong asked if the ESC wants to make a motion and figure out how to craft a memo to Secretary or have a follow-up meeting. Liz Thompson indicated she would be hesitant to take an action without giving FWD the opportunity to respond to today's meeting.

Action: Allan Strong suggested that he work with Mark Scott to set up a discussion with the Commissioner and Secretary. Mark Scott agreed to work with Allan Strong on this.

**New additions to the Invertebrate SAG:**

Michael Lew-Smith  
Michelle Graziosi  
Declan McCabe  
Savannah Ferreira

Bryan Pfeiffer shared with the ESC that Declan and Savannah attended the last SAG meeting and contributed.

**MOTION:** *By Bryan Pfeiffer, seconded by Alan Calfee, to accept Michael Lew-Smith, Michelle Graziosi, Declan McCabe, and Savannah Ferreira as new member of the Invertebrate SAG.* Motion was approved.

**New addition to the Flora SAG:**

Michael Duffy

Bob Popp mention that Michael helped with the herbarium BioBlitz and has a strong plant background. Art Gilman added that it is good to have a SAG member from southern Vermont.

**MOTION:** *By Jim Shallow, seconded by Liz Thompson, to accept Michael Duffy as new member of the Flora SAG.* Motion was approved.

**Proposal to list Houghton's Sedge as Endangered – Bob Popp:**

The Listing Subcommittee has reviewed and provided feedback on the listing proposal Allan Strong asked how the transplantation has progressed? Art Gilman stated that he is a consultant on the project. It is the only known population and some plants were moved in advance of construction. There are three subpopulations, and one was moved because it was in an area that would be disturbed. It is a relatively robust plant, and Art indicated that he thought it will transplant well. Bob added that Art moved half the

stems in the population, and this occurred as a voluntary action by the developer. Paul Wieczorek asked if this plant is a single clone and if seeds were sown and how? How much genetic diversity exists, and can it be enhanced? Art stated that the three subpopulations are separated, and all seeds collected were moved to a large transplantation site.

**MOTION:** *By Bryan Pfeiffer, seconded by Liz Thompson to recommend the listing of Houghton's Sedge as endangered. All ESC members vote in favor except Mark Scott who abstained as a member of the ANR.*

Steve Parren asked that the ESC formally forward this recommendation soon as it will impact rule-making notifications if this proposal is accepted by the Secretary.

**Adjourn:**

*The meeting adjourned at 2:08 PM*

Respectfully submitted: 1/25/2021, revised 1/26/2021

Steve Parren  
Fish & Wildlife Department

Approved: 4/22/2021

Allan Strong, Chair Endangered Species Committee