



State of Vermont

ANR Office of Planning & Legal Affairs

1 National Life Drive – Davis 2

Montpelier, VT 05620-3901

[phone] 802-923-6647

Agency of Natural Resources

MEMORANDUM

TO: Julia S. Moore, Secretary, Agency of Natural Resources

FROM: Jennifer Mojo, Senior Planner, Office of Planning

DATE: October 5, 2023

RE: Agency Comments Regarding Endangered Species Committee Recommendations on the Lewis Creek and Poultney and Hubbardton Rivers Lampricide Permit Takings Applications.

The Endangered Species Committee (ESC) met on April 25, 2023, to discuss the 2023 Lewis Creek, and Poultney and Hubbardton Rivers Lampricide Permit applications submitted by the United States Fish and Wildlife Service (USFWS, Applicant). The ESC recommended that the two permits be granted provided the following conditions are included as outlined below. Additionally, the Agency placed both permits on public notice between September 1, 2023, and October 2, 2023. The Agency did not receive any public comments.

Agency staff reviewed these recommendations and considered them in preparing the Takings Permits for your review and signature. Our responses are summarized below.

- 1. Require the permittee to conduct a post-treatment non-target mortality and sub-lethal impact survey for the entire treated area where the bottom is visible and provide a mortality count following every chemical treatment. Post-treatment surveys of known mussel beds covering the entire treatment area using snorkel or SCUBA gear should be conducted immediately after the treatment by a third party with expertise in mussel surveys.*

The ESC requested USFWS perform non-target mortality and sub-lethal impact surveys for all visible portions for the entire treated area of the rivers, and provide mortality counts following every treatment. USFWS' survey methods used for post-treatment monitoring have been discussed and reviewed in prior Takings permit and Aquatic Nuisance Control (ANC) permit applications. USFWS proposes surveying predetermined sections of the rivers rather than surveying the entire treated reaches. The Applicant has used this subsampling design since 2012 and the surveyed area represents about 23% of the surface area of each reach. USFWS provided statistical information which demonstrated that census-sampling the entire length of

visible treated river does not yield better data than what could be obtained by sampling a portion of the river.

Post-treatment surveys are conducted the next morning following the lampricide application, with surveying of the application point conducted <14 hours after conclusion of chemical addition. Sites are progressively sampled downstream until the tail end of the block is met and results in fewer hours between block passage and surveys as the team moves downstream. Chemical block progression is monitored during the daylight hours with the only exception being unsafe high-water conditions. The 2023 Takings Permits include conditions for survey methods as requested by USFWS.

- 2. Population-level surveys should be conducted by a third party annually to monitor the status and trends of threatened and endangered mussels in all the treatment rivers to understand the status of non-target mussels more fully in Lewis Creek, Poultney River, and Hubbardton River, Additionally, recovery plans for these should be implemented as soon as possible.*

This recommendation was not included as a permit condition. Population monitoring reflects all influences on the population versus just those impacts associated with the lampricide treatments. Results of post treatment monitoring surveys of the Poultney and Hubbardton Rivers (8 treatments in 21 years) and Lewis Creek (8 treatments in 22 years) have not yielded any observed State-listed species mortalities. The permits include conditions requiring USFWS to report mortalities of listed species to the Agency following treatments.

Development and approval of recovery plans is the responsibility of the Agency. The Agency's Department of Fish and Wildlife develops the plans. Plans are then reviewed by the ESC and referred to the Secretary for signature.

- 3. The Hubbardton River should not be treated because no Sea Lamprey were captured in the pre-treatment population survey. Treatment may occur if eDNA testing conducted prior to the proposed treatment shows the Sea Lamprey presence; If eDNA testing is not conducted the applicant may use TFM bars or a block net at the mouth of the Hubbardton River to prevent Sea Lamprey from seeking refuge during the treatment of the Poultney River.*

USFWS has stated they will consider the fact no lamprey are present when making decisions regarding treatment, and that the Hubbardton River will not be treated if no lamprey are found prior to the treatment.

- 4. Reduce treatment levels to 1.0 x MLC to be protective of non-target organisms. Reduce treatment levels to 1.2 x MLC as a minimum.*

USFWS proposed to treat the rivers at the lowest concentration above the minimum lethal concentration (MLC) to achieve a successful treatment. The Applicant notes that treatment

concentration levels may change at the time of application given real time conditions. A concentration of 1.3 x MLC allows for variance in site conditions to achieve success if a higher concentration is deemed necessary given site conditions. Previous treatments in the Poultney (1996) and Winooski (2012) Rivers at 1.0 x MLC resulted in ineffective treatments. Within Vermont, USFWS treats rivers at a lower concentration of lampricide than in the Great Lakes Regions, where treatments typically occur at a concentration of 1.5-2.0 x MLC.

5. *USFWS should continue Eastern Sand Darter and Channel Darter sampling efforts that were conducted on the Poultney and LaPlatte rivers between 2017-2019.*

Following the 2016 Lampricide permitting process, discussions with USFWS and ANR resulted in establishment of an interdepartmental workgroup to plan long-term monitoring and reporting of threatened and endangered species population levels in the rivers for which USFWS has been issued permits to use lampricide. The Agency's Department of Fish and Wildlife (Department) was tasked with conducting surveys and conducted Eastern Sand Darter and Channel Darter surveys between 2017 and 2019 on seven Lake Champlain tributaries (Lamoille, LaPlatte, Lewis, Missisquoi, Otter, Poultney, and Winooski). Findings of the surveys are reported in *Channel Darter and Eastern Sand Darter Sampling Using Trawls and Seines T&E Permit ER-2017-14 2018 Annual Report (Pientka and Good 2019)*. The report identified that future sampling efforts should focus on the LaPlatte River the Poultney River for channel darters specifically. The Department obtained a Takings Permit to continue darter sampling efforts and will sample the Poultney River in 2024.

6. *Purpose of Treatment: "Incidental Take" versus "Enhancing the propagation of a threatened or endangered species."*

The purpose of the treatments was changed to "incidental take" in the permit. While the lampricide treatment may support propagation of a threatened or endangered species, lake sturgeon as identified in the application, the primary purpose of the treatments for past Takings Permit applications was listed as "incidental take." Success of the lampricide program is assessed using lamprey wounding rates for Atlantic salmon and lake trout versus lake sturgeon. While lake sturgeon and other species benefit from the treatments generally, the primary purpose of the Lampricide Program has been focused on restoration of salmonids and sportfisheries.

7. *Mudpuppies: The reptile and amphibian SAG does not recommend the approval of this permit due to concerns regarding the treatment's impact to Mudpuppies. If permission is granted, the SAG recommends the following conditions.*

- a. *That permits cover only a single one-time application of lampricides on a given river so that target and non-target mortality is assessed and reported on, prior to the next permit application.*

- b. That non-target mortality surveys cover as large a portion of the treated rivers as is possible and that any and all dead Mudpuppies be collected and stored in such a way as to allow future sexing and genetic analysis.*
- c. That the applicant (USF&W) performs the needed research to show the current distribution and abundance of Mudpuppies in Vermont and provide the research to show the pre- and post-treatment population sizes of Mudpuppies in treated and untreated rivers in Vermont over a multiyear period.*
- d. That the applicant will add the concentration of lampricide used (in percent minimum lethal concentration (MLC) in the nontarget mortality summary table for all past treatments so we can see if there is any relationship between Mudpuppy mortality with the allowed percent of MLC used.*
- e. That the applicant report Mudpuppy mortality by size class and include that information in all non-target mortality reports and summaries of past treatments.*
- f. That a certain percentage of the applicant's funding for all future treatments be allocated to determining and elucidating the factors that may be causing increased predation, or increased numbers of sea lamprey.*
- g. Explanation of why other strains of salmonids that are more capable of coexisting with sea lamprey are not stocked rather than the larger, more susceptible strains.*
- h. Investigation of long-term habitat improvement projects that might help salmonids become self-sustaining in Lake Champlain without the need for regular biocide treatments.*

The ESC's recommendations for permit conditions regarding non-target species that are not listed as threatened or endangered, mudpuppy specifically, are beyond the scope of this permit and are addressed through the Agency's Department of Environmental Conservation (DEC) Aquatic Nuisance Control (ANC) Permits. ANC permits are issued for the use of pesticides and herbicides to control aquatic nuisance species and address lampricide application, monitoring, and reporting requirements for non-target species. The ESC's recommendations were shared with the Agency's ANC Program for consideration in the parallel ANC permit processes.