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MEMORANDUM

TO: Julie Moore, Secretary, Agency of Natural Resources

FROM: Jennifer Mojo, Senior Planner, Office of Planning

DATE: September 28, 2020

RE: Agency Comments Regarding Endangered Species Committee Recommendations on the USFWS Takings Permit Applications for Lampricide Treatments in the Lamoille and Missisquoi Rivers

The Endangered Species Committee (ESC) provided written comments on June 29, 2020 regarding the two 2020 United States Fish and Wildlife Service (USFWS) Takings Permit applications for lampricide treatments in the Missisquoi and Lamoille Rivers The ESC recommended that the two permits not be granted due to unacceptable risks to non-target species, as well as a lack of information on short and long term implications from lampricide use on non-target threatened and endangered (T&E) species. If a permit were to be granted, the ESC recommended inclusion of additional conditions in the permit.

The Agency posted the two draft permits for public comment on its website between August 12 and September 24, 2020, and held a virtual public informational meeting on September 17, 2020. No public comments were received on either application. Agency staff reviewed the ESC recommendations, and considered them in preparing the permit for your review and signature. Our responses are summarized below.

General Concerns

ESC Comment: *The ESC continues to be concerned about long-term effects on populations of T&E species such as mussels, as noted in the white paper provided by the Invertebrate SAG in 2013 (included with the ESC recommendations). Additionally, the ESC's notes there are negative effects on non-target species that are not listed as threatened or endangered but are in S1 or S2 categories (critically imperilled or imperilled). Given the concerns about water quality in Vermont, particularly in the Champlain Basin, the ESC feels adding toxic chemicals to state waters is an out-dated approach to fisheries management. The ESC also urges the US Fish and Wildlife Service to consider seriously the*

possibility of keeping one river system free from lampricide treatment; they suggest the Lamoille River as an excellent choice for such action.

Response: The ESC's concerns regarding non-target species that are not listed as threatened or endangered 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 application, monitoring and reporting requirements for non-target species.

The option of not treating the Lamoille was not considered by the Applicant. Leaving sources of uncontrolled larval populations in the Lamoille would result in larvae recruiting to parasites and exploiting host populations. Leaving areas untreated may also result in a disproportionate, compensatory recruitment and higher parasitism rate. Maintaining larval suppression from all sources maintains limited recruitment and minimizes resulting parasitism. The larval survey conducted in the Lamoille River in 2019 showed that a sizeable larval sea lamprey population was present. To meet management objectives and target wounding rates, USFWS will need to treat the Lamoille to control the large larval population identified in the pre-treatment survey.

Requested Condition Specific to the Missisquoi Treatment

ESC Comment: *The lampricide application point shall be located downstream from the Swanton Dam in the area directly below the hard bottom reach.*

Response: This recommendation was not included as a permit condition. Chemical application points are chosen based on the River's ability to mix the chemical quickly and produce an even concentration. This prevents "hot-spots" which may result in unnecessary non-target mortalities, and ensures a uniform and lethal dose of lampricide reaches the sea lamprey. The physical characteristics of the River below the dam (width, flow, and channel morphology) does not allow for even mixing of lampricide to occur and could potentially render the treatment ineffective. To address potential impacts of lampricide on stonecats which reside in the riffle section below the dam, the Agency is including the following permit condition:

The USFWS shall set up a station for recovery of distressed stonecats where they will be held in freshwater until the chemical block has cleared the first monitoring station. The USFWS will have one person walk the accessible shoreline on either side of the river for 250 meters downstream of the Swanton Dam (along the prime stonecat habitat) at least once every 3 hours during the chemical application. The USFWS will not place its staff or operators in a situation where their safety is compromised, or where they will unnecessarily be exposed to pesticide. Any distressed stonecats will be netted and placed in fresh water to recover. After the treatment, the stonecats will be returned to the riffle section.

This condition was also included in the 2012 Missisquoi Treatment Takings Permit.

Requested Conditions for Both Treatments

ESC Comment: *The post-treatment non-target mortality survey be conducted at each survey location no later than the next daylight period following the lampricide block passage.*

> **Response:** This request was not included as an explicit condition, but a response provided by the USFWS clarified their existing post-treatment survey protocols. 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.

ESC Comment: *The USFWS increase its sampling intensity to provide more precise estimates of larval lamprey populations in rivers that are scheduled for lampricide treatment.*

> **Response:** This request was not included as a condition. The Standardized Quantitative Assessment Sampling (QAS) protocol developed by the Great Lakes Fishery Commission is the method used to conduct larval sea lamprey surveys. Sampling is standardized, but the total amount of habitat sampled during each survey may vary based on conditions at the time of sampling. QAS estimates do have wide confidence intervals; however, in its prior experiences, USFWS finds a more precise population estimate is not necessary to establish the presence and extent of lamprey in the river system used to justify treatments. As stated above regarding leaving the Lamoille untreated, the Program set goals for sea lamprey wounding rates of Atlantic Salmon and Lake Trout. Because the lamprey wounding rates are still above those established by USFWS, the need for the lampricide treatments remains.

ESC Comment: *Treatment should be conducted during the latter part of the period proposed in the application to minimize impact on young-of- the-year Lake Sturgeon.*

> **Response:** Through inclusion and reference of conditions in the ANC permit, the permits allow for two treatments to occur between Labor Day and December 31st. Treatment after Labor Day allows for increased growth potential of young-of-year sturgeon prior to lampricide exposure, which in turn increases tolerance to TFM. The 2012 Missisquoi application indicated that based on prior studies, the expected size range of young-of-year in fall is within the 217 mm (183-255 mm) size class, which has a TFM NOEC of 1.0-1.3 x MLC. As growth rates decline with decreases in water temperatures, it is USFWS' position that delaying treatment an additional 2 to 4 weeks, does not provide meaningful added protection. The distinction in juvenile sturgeon protection based on size is made between treating in the fall rather than in the summer where young-of-year are expected to be in smaller size classes.