September 4, 2025

David Shelberg
President, Moodus Reservoir Preservation Group
89 Hilltop Road
East Haddam, CT 06423

RE: Triploid Grass Carp for Moodus Reservoir

Dear Mr. Shelberg:

You recently submitted an application to import/liberate triploid Grass Carp into upper Moodus Reservoir, East Haddam on behalf of the Moodus Reservoir Preservation Group. I am writing with a status update on the feasibility of using triploid Grass Carp to control nuisance aquatic vegetation in that waterbody. The Department's opinion is that the speculative benefits of this endeavor do not outweigh the risks described below.

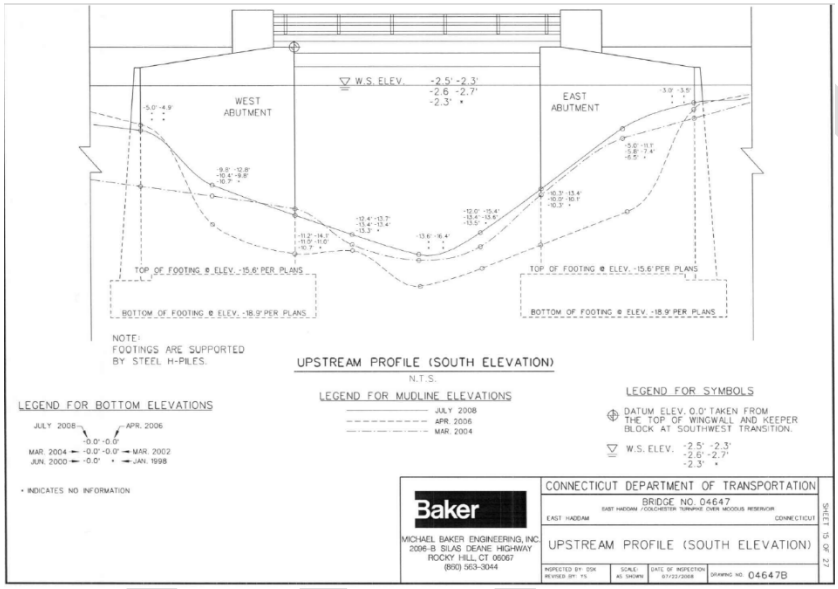
Triploid Grass Carp can only be introduced into water bodies that are ecologically isolated or can be rendered ecologically isolated in accordance with Section 26-55-1(i)(3) of the Regulations of Connecticut State Agencies (RCSA):

> *The Commissioner shall not issue a permit for the liberation of triploid grass carp into any waters unless the outlet and inlet of such waters are, in his opinion, adequately screened so as to prevent the emigration of such grass carp or unless such waters are ecologically isolated. For the purposes of this subsection, ecologically isolated means any waters from which, in the opinion of the Commissioner, the emigration of such grass carp will not significantly impact public waters or waters of another, or from which there is no surface water outflow.*

The liberation of triploid Grass Carp into Moodus Reservoir cannot be supported by this office for several reasons, chief among them is the fact that the watershed of upper Moodus Reservoir is greater than one square mile (7.48 mi^2) in size. The Fisheries Division has found that it can be difficult or impossible to effectively achieve ecological isolation when the contributing watershed exceeds 1 sq. mile, as is the case with Moodus Reservoir. Moodus Reservoir and the proposed screening location are also located within FEMA Flood Zone A and the reservoir is known to overtop roadways. There are no measures proposed or in place to prevent the carp from entering tributaries of Upper Mooodus Reservoir, such as Pine Brook. It is the opinion of the Fisheries Division that triploid Grass Carp cannot be effectively contained within this waterbody and their introduction would violate RCSA Section 26-55-1(i)(3). Though your interest is in stocking only Upper Moodus Reservoir, we are also of the opinion that ecological isolation could not be achieved if you were interested in introducing these fish into the entire reservoir, i.e., including Lower Moodus Reservoir.

Another challenge is that the bridge at which your group proposes to install an emigration control screen is owned by the Town of East Haddam and maintained by DOT, which may require a permit from the East Haddam Inland Wetlands and Watercourses Commission, and possibly the CT DEEP's Land and Water Resource Division (LWRD). The Fisheries Division has identified several additional concerns related to the proposed screening:

1. The proposed net has a mesh size of 2” and the Fisheries Division requires a mesh size that is no greater than 1.5” for the size of Grass Carp commonly stocked in our state.
2. Connecticut General Statutes Section 26-134 prohibits preventing the passage of fish in any stream or through the inlet or outlet of a pond or stream. The proposed emigration control screen will prevent the passage of fish and other aquatic animals at this location. Access to the different habitats in both basins of the reservoir may be important for promoting survival and growth of fishes living in both basins of the reservoir during different life stages and across variable environmental conditions.
3. Given the unevenness and dynamic nature of the lake bottom (see image below), it is not clear how the screen will be anchored into the lake bottom to prevent Grass Carp from swimming under it.



4. Other concerns about the screening include a maintenance schedule and logistics, as well as any potential effects on water exchange, hydraulic capacity, the risk of the roadway overtopping, and DOT’s ability to perform inspections and maintenance of the structure.

The triploid grass carp permitting process also includes public outreach requirements for waterbodies abutted by multiple property owners as per requirement RCSA Section 26-55-1(i)(2):

The Commissioner shall not issue a permit for the liberation of triploid grass carp into any lake or pond where multiple individuals or entities own the property immediately abutting the lake or pond, unless:
(A) the applicant provides notice to the owners of record of each property immediately abutting the lake or pond by mail to the owner’s address on the most recent grand tax list of the municipality in which such properties are located or by personal delivery and receives written agreement to such liberation from such owners; or
(B) at least thirty (30) days prior to the Commissioner issuing the permit:
(i) the Commissioner publishes a notice of the application on the department’s web site; and
(ii) the applicant provides a notice of application to the chief executive officer, as described in section 7-193 of the Connecticut General Statutes, for each municipality in

which the lake or pond is located. The notice of application may reference the notice published on the department's website but shall, at a minimum, contain the heading "Notice of Application to Liberate Triploid Grass Carp"; the name of the applicant; the location of the proposed activity by the name of the lake or pond and the municipality or municipalities in which the lake or pond is located; and the address, telephone number and e-mail address of the applicant. In addition to such notice, and prior to issuing any permit for such liberation, the Commissioner may require the applicant to attend a public information meeting conducted by the department regarding the application to be held in any municipality in which the lake or pond is located.

There are practical reasons why Triploid Grass Carp should not be introduced into Upper Moodus Reservoir beyond the regulatory issues discussed above. Moodus Reservoir boasts a vibrant plant community not often found in Connecticut's lakes. Shallow depths, stratification and available nutrients all contribute to the abundance of plants in Moodus Reservoir and have since at least the 1930s. While Triploid Grass Carp can be a useful tool in managing aquatic plants, especially when combined with other methods such as aquatic herbicides, their use does not come without risks. For one, they will feed on the plants they find the most desirable, which may not coincide with the plants that we desire them to eat, e.g. invasive species, causing shifts in the plant community. **Aquatic plant surveys in Moodus Reservoir have documented 37 different plant species, only three of which are invasive.** Of those three invasive species, only one (curly-leaf pondweed) is a preferred food source for Grass Carp and that species was only rarely encountered during the Connecticut Agricultural Experiment Station plant surveys in 2012 and 2016. Triploid Grass Carp would likely reduce species diversity by foraging on desirable, native species before feeding on less desirable variable-leaf watermilfoil and fanwort. This could result in an increase in invasive plant coverage.

It is also incredibly difficult to achieve a balance between excessive plant growth and carp feeding, and the result is typically an all or nothing scenario, where there is either little control or a near complete removal of vegetation from the lake, as has recently occurred in Candlewood Lake, Squantz Pond, and Ball Pond. A drastic reduction in vegetative biomass would likely increase algal production in the lake and negatively impact vegetation-dependent fish species such as the state-listed Bridle Shiner, which are present in Moodus Reservoir. Invasive watermilfoil may reduce suitable spawning habitat for Bridle Shiner, so a more targeted approach to remove this aquatic invasive plant species may benefit Bridle Shiner. To reduce the risk of excessive plant control, the Fisheries Division could consider authorizing a low stocking rate, however, negative outcomes are likely to occur at any stocking density. As mentioned above, at a low density, triploid Grass Carp are likely to only forage on preferred species (i.e., not the problematic invasive ones), thereby reducing biodiversity without addressing nuisance plant growth. Targeted herbicide treatments can be a feasible and prudent alternative to selectively managing nuisance species without the negative effects described above. Sportfishing quality in Upper Moodus Reservoir is considered to be poor at this time. Reducing plant stem density may improve foraging efficiency and growth for Largemouth Bass. It would also improve habitat quality for Smallmouth Bass, which previously occurred at low densities in Moodus Reservoir and could conceivably be reintroduced if habitat suitability were to increase. It is the opinion of the Fisheries Division that these speculative benefits of introducing Triploid Grass Carp into Upper Moodus Reservoir do not outweigh the risks described above.

Please feel free to contact me should you have any questions. If you still wish to continue pursuing a permit to authorize the liberation of grass carp into Upper Moodus Reservoir you can contact me to discuss next steps.

Sincerely,

Shalyn Zappulla
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Reference:

Bugbee, G.J. and J.M. Fanzutti. 2016. Moodus Reservoir East Haddam, CT: Aquatic vegetation survey, Water chemistry, Aquatic plant management. Connecticut Agricultural Experiment Station Department of Environmental Sciences.