

Clean Waters Consulting, LLC

Memo/Transmittal

VIA EMAIL

To: Deal Lake Commission
From: Stephen J. Souza, Ph.D.
Subject: Environmental Concerns Raised by Public Following April Meeting
Date: 18 April 2020

The following memo was prepared at the request of the Deal Lake Commission (DLC) to respond to **public comments regarding**

1. The Planned Weed Treatment of Terrace Pond
2. Turtle Sunning Habitat

1. Weed Treatment of Terrace Pond – During the 16 April meeting of the DLC, the DLC approved the treatment of two area of Deal Lake, Terrace Pond and the western end of the Sunset Arm. The combined acreage of the two targeted areas totals approximately 8 acres, which is about 5% of the total lake surface. The two areas have been targeted for treatment based on input and comment received over the past three years from the public, as well as my personal inspection of both sites, once again conducted over the past three years.

As the commissioners and the majority of the public are aware, neither I nor the DLC has promoted the widespread, indiscriminate application of herbicides. When herbicides have been used the total area targeted for treatment has been minimal, the treatments conducted by NJDEP licensed applicators under a permit reviewed and approved by NJDEP, and using herbicides having very low biotoxicity for fish, amphibians, reptiles, mammals and birds. Additionally, these treatments are intended to control non-native invasive species, and the herbicides that have been approved for use in the past have no effect on emergent plants, such as water lilies (*Nuphar* and *Nymphaea*) and the majority of native plants (*Vallisneria*, *Utricularia* and most of the native *Potamogetons*).

There are no pre-emergent aquatic herbicides. Meaning that a treatment cannot occur until the targeted plants are actively growing and there is a fair amount of weed growth has occurred. Additionally, NJDEP prohibits the application of aquatic herbicides before 1 April. The timing of the treatments can be tricky for Deal Lake, given its hydrology, turbidity and characteristically when invasive species begin actively growing. Treatment of the Terrace Pond area is further complicated by the irrigation use of lake water by the golf course. The most ideal time to treat the targeted invasive species (Eurasian watermilfoil, Parrot feather, and Coontail) is typically late spring (between 15 May and 30 June). Unfortunately, this can overlap with the spawning period for bass and various sunfish. If the treatment is delayed into the summer the density of weeds is too great to treat without resulting a potential dissolved oxygen impacts caused by the die-off and subsequent bacterial decomposition of the dead plants. Additionally, treating later in the summer can trigger, sustain or exacerbate an algae bloom (including a harmful algae bloom – HAB), due to the rapid release of large amounts of nutrients from the decaying, dead plants. Also, treating in the summer increases conflicts with the golf course's use of the lake water for irrigation.



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The DLC and the contracted herbicide applicator (Solitude) take into consideration the lake's fishery. As noted, any herbicide used to treat the lake's invasive weed community has low biotoxicity to fish. Also, treatments are not conducted without first evaluating flow rates, referencing weather and rain forecasts, and testing the lake's oxygen levels and pH. All of this is done to ensure that the proper environmental conditions exist for the treatment. The product that is scheduled for use, Clipper, is a fast-acting contact herbicide; it will only affect the plants that it actually contacts. It will be applied at a concentration of between 2 ppm and 4 ppm (parts per million). The potential for downstream drift is also minimal given that the applicator does not broadcast the product but rather only directs it to areas where the targeted plants are observed.

However, given the comments raised by the public concerning the possible (although unlikely) impact to spawning fish, the DLC will instruct the applicator to refrain from spraying any plants growing within 10 feet of the shoreline. This is where most bass and sunfish create their nests. The combination of using a low toxicity, fast acting, contact herbicide, not spraying any water lily and treating at least 10 feet from the shoreline should lessen the potential for conflicts between the control of invasive weeds and fish spawning.

2. Turtle Habitat – It was recently (17 April) brought to the attention of the DLC concerns regarding the removal of tree falls and woody debris from the lake. We recognize the importance of tree falls and woody debris, in terms of the habitat provided for fish, reptiles, amphibians and even wading birds. I along with the DLC have repeatedly cautioned residents in the past about removing tree falls and woody debris, altering riparian vegetation or clearing wetlands and emergent vegetation. Conversely, we have encouraged and supported the removal of tree falls and woody debris, but only when the material poses a navigation hazard to rowers and boaters, or when the material is impacting the free flow of water. Overall, our messaging over the years to the public has been very clear on this matter. It should be noted that residents are permitted by NJDEP to conduct routine shoreline maintenance. This is covered under Flood Hazard Regulations (NJAC 7:13) in the form of various Permit-By-Rule authorizations. Specifically, in keeping with the limits clearly established within the noted sub-section of NJAC 7:13:

7:13-7.1 Permit-by-rule 1 – normal property maintenance

7:13-7.2 Permit-by-rule 2 – repair of a lawfully existing structure

7:13-7.3 Permit-by-rule 3 – in-kind replacement of a lawfully existing structure

7:13-7.4 Permit-by-rule 4 – removal of any lawfully existing fill or structures

7:13-7.5 Permit-by-rule 5 – removal of accumulated sediment and debris from a regulated water by hand

The public, as well as municipal authorities, including local business departments, have been provided in the past by the DLC with this information. Once again, our messaging over the years to the public has been very clear on matters pertaining to the alteration of the shoreline and removal of riparian vegetation.

However, we can reinforce this messaging through the DLC website, reminding the public of the habitat value of tree falls and woody debris, and asking them to conduct any removal of this material only after:

- Consulting with the DLC,
- Only if the tree falls and woody debris constitute a navigation hazard or is impeding flow, and
- To only conduct such work in a manner consistent with NJDEP regulations.