Invasive Aquatic Species Program

Date: 27 February 2020
To: Interested Parties
From: DEP Division of Environmental Assessment, Invasive Aquatic Species Program
Re: Program considerations with respect to herbicide use on established invasive aquatic plant populations

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Summary
The State of Maine, through its Department of Environmental Protection (DEP) Division of Water Quality Management, has authority to regulate discharge of herbicides into public waters.

A separate DEP division, the Division of Environmental Assessment, coordinates state efforts to control invasive aquatic plants through the Invasive Aquatic Species Program (IASP). In rare cases when the benefit of rapid response to control an incipient invasive species exceeded the risk to the environment, the IASP has contracted for the application of herbicide treatments exclusively for the purpose of restoring biological communities affected by the invasive species, with the goal of habitat restoration and eradication of the invasive species.

For established infestations where eradication isn't feasible, lake associations often conduct manual plant removal programs to limit the impacts and prevent spread. Several lake associations have sought IASP support to use herbicide as a tool to complement ongoing mechanical invasive plant control efforts.

This document presents background and context for when the IASP may consider herbicide use on established invasive plant populations.

Background
Only the DEP or the Maine Department of Inland Fisheries and Wildlife (DIFW) is authorized to use aquatic pesticides, including herbicides for the management of invasive aquatic plants in Maine state waters. *See* 38 MRS § 465-A.1.C.2 (governing Class GPA lake and pond waters).[1] As of this writing, DEP, through the IASP, has contracted six herbicide treatment projects to control two infestations of hydrilla (*Hydrilla verticillata*), three infestations of Eurasian water milfoil (*Myriophyllum spicatum*) and one infestation of of European naiad (*Najas minor*). These treatments were conducted under permits issued to the IASP, most recently under the IASP's General Permit.

Maine statute limits such treatments in lakes and ponds to the restoration of biological communities. The IASP staff generally justifies herbicide use on an incipient invasive plant population when the opportunity exists for restoring a water body to conditions prior to the infestation by suppressing the infestation in its early stage of growth, limiting spread within the waterbody and – ideally – eradicating the invasive species.

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[1] *See also* 38 MRS § 465 (containing various provisions governing aquatic pesticide or chemical discharges in Class AA, A, B, and C waters). The use by DEP or DIFW of aquatic pesticides must comply with Maine law, including all applicable provisions in Maine's Water Classification Program, 38 MRS § 464-470, and DEP's Rule, Chapter 514, Regulations Concerning the Use of Aquatic Pesticides.

Components of an herbicide treatment generally include the following:

- plant identification
- risk assessment
- herbicide treatment planning
- permitting
- risk communication
- public notification
- on-site treatment oversight
- water quality and herbicide concentration monitoring
- pre- and post-treatment plant surveying
- post-treatment plant control with mechanical techniques

In 2006, three lake groups asked the IASP to consider use of herbicides to control variable water-milfoil (*Myriophyllum heterophyllum*) in their lakes. At that time these lake groups were developing mechanical plant removal programs. In each case, variable water-milfoil was already established when discovered, often with dense populations in multiple areas of the lakes.

Historically, the IASP has generally not supported herbicide use in these situations because eradication of such established populations is very unlikely. Without a robust mechanical removal program following an herbicide treatment, recurring herbicide treatments would be needed to suppress the infestation, and this scenario generally does not conform to the intent of restoration of biological communities.

DEP and the IASP explained to these lake groups in 2006 that herbicide treatment could not be supported at that time. IASP staff also wanted to learn what level of plant control and organizational capacities could be built locally, and what degree of progress could be achieved with mechanical methods, before considering the use of herbicides. *See* DEP Rule, Chapter 514 § 2(D) (allowing aquatic pesticide use only upon a demonstration that pesticide control offers the only reasonable and effective means to achieve control of the target species).

Beyond rapid response: guidelines for herbicide use on established infestations in Maine
Today, many citizen-driven lake stewardship organizations now have multi-year histories of non-chemical invasive aquatic plant management. With funding support from state and federal agencies, some of these groups continue to grapple with extensive variable milfoil infestations. They have committed significant funding and in-kind resources with the objective of reducing invasive plant growth to a density that can be managed with a lower level of effort. This is expensive and time-consuming for these groups, many of which are all-volunteer.

Several lake groups engaged in multi-year manual plant removal projects have determined they cannot significantly reduce certain invasive plant populations solely with mechanical control. Asserting that site-specific herbicide treatment is needed to reduce a portion of the infestation to a density that can be maintained by mechanical removal techniques, groups have requested that DEP and IASP consider an herbicide treatment to substantially knock-back the population to allow a sustainable level of mechanical removal in following years.

Considering all that has been learned since 2006, DEP and the IASP may in its sole discretion consider a limited herbicide treatment for established infestations in accordance with Maine law when the following pre-conditions are sufficiently met to DEP's and the IASP's satisfication. Any

request to DEP and the IASP for such a limited herbicide treatment must be made by a lake association or similar organization in writing and be accompanied by the following information.

Pre-conditions to be met by requesting lake organizations (the following information must be provided in advance for DEP and IASP consideration of any request for herbicide treatment):

1. Document that the infestation affects aquatic habitat and that the treatment will restore biological communities in the lake or a portion thereof.

2. Provide evidence that the infestation affects public recreational use(s) of the lake or a portion thereof. The lake group must submit a description of the waterbody and uses affected, and the location and degree of impact.

3. Demonstrate that the treatment offers the only reasonable and effective means to achieve control of the infestation, and report outcomes of three or more consecutive full seasons of significant non-chemical attempts to control the infestation site(s) proposed for herbicide treatment. These efforts must be demonstrated to have been organized, persistent, and required a substantial input of local funds, volunteer time, or other resources.

4. Develop a five-year management plan for controlling the plant in the lake for DEP's and the IASP's review and approval. This integrated management plan is a comprehensive document addressing prevention, early detection, and control. Guidance can be found in *Maine Citizens' Guide to Invasive Aquatic Plant Management* available online (http://www.mainevlmp.org/wp-content/uploads/2014/03/MMI-Citizens-Guide-For-Web.pdf) or in hardcopy available from DEP.

The plan submitted to DEP and the IASP for review and approval must include the following at a minimum:

- Overall goal for management of invasive aquatic plants in the lake;
- Map(s) showing infested areas and density of infestations, updated annually; electronic format similar to Google My Maps is preferred;
- Results of a plant survey in the waterbody within the last two years including a list of native aquatic plants;
- Priority sites for management, reasons for selection of each, and management objective for each site;
- Specific plant control techniques that will be used each year at each priority site;
- Description of resources and level of effort needed and how resources will be deployed to manage the infestation in the lake, particularly with respect to manual control work in years following the herbicide treatment to maintain the gains achieved by the treatment;
- Procedure for surveying plants in the year of herbicide treatment (YOT) and for two years after YOT. Objectives of the survey are to assess efficacy of the treatment on the target plant and impact of the treatment on native aquatic plants;
- Written commitment describing financial and technical capacity of an association or other organization dedicated to this effort to conduct the proposed plant removal for the duration of the management plan. The plan should also describe financial and technical capacity to perform tasks associated with a potential herbicide treatment;
- A communication plan to inform affected publics of the plant removal program.

5. Written commitment by the requesting lake organization to fully reimburse DEP and the IASP for all costs, direct and indirect, incurred by DEP and/or the IASP for any herbicide treatment and concentration monitoring, including post-treatment herbicide concentration analysis, and to undertake all actions requested by DEP and the IASP to assist with any aspect of the treatment and monitoring as an agent under the direct supervision and control of DEP and the IASP. DEP and the IASP may require that such commitments and/or other requirements, or other payment or grant arrangements, be further documented in a Memoradum of Understanding (MOU) or similar agreement drafted to DEP's and the IASP's satisfaction.

DEP and IASP deliberation of the request

If the above information is sufficiently provided and all pre-conditions are met to DEP's and the IASP's satisfaction, DEP and the IASP may consider some or all of the following factors to determine, in their sole discretion, whether or not a limited herbicide treatment is warranted:

1. The degree to which the lake organization's report on the results of the non-chemical plant control efforts indicates no reasonable non-chemical method exists to reduce invasive plant growth to a level where these alternatives are effective to restore habitat and/or uses to an acceptable condition(s).

2. The degree to which information provided by the lake organization shows the proposed use of herbicides is essential to allow future successful plant suppression by acceptable physical or biological means without repeated herbicide applications.

3. Whether control of the target plant in the area(s) proposed for herbicide treatment is necessary to allow a feasible lakewide management program to be carried out. For example, continuing with non-chemical control of dense growth may make it infeasible for the lake association to control lower density growth, possibly resulting in losing ground in the overall management effort.

4. Whether the herbicide program proposed in specified and discrete areas within the lake achieves the goals of the management plan.

5. Whether IASP staff can manage the proposed herbicide treatment in the context of overall program demands and priorities, and the general availability of DEP and IASP resources.

If, upon consideration of some or all of these factors, DEP and the IASP determines that herbicide treatment is warranted, DEP, through the IASP, may in its discretion elect to apply for coverage under the General Permit as the licensee and oversee and direct the requested treatment project. Additional tasks associated with the herbicide treatment may be required by DEP and the IASP of the lake organization as an agent under the direct supervision and control of DEP and the IASP. Any such additional tasks may be included by in a MOU or similar agreement as referenced above.

For more information, please contact the Maine DEP Invasive Aquatic Species Program at this email address: Milfoil@Maine.gov.