

Response to Public Comments on the Strategic Analysis of Aquatic Plant Management in Wisconsin

June 14, 2019

The Wisconsin Department of Natural Resources (department) has conducted a strategic analysis of aquatic plant management (APM) in Wisconsin. A draft of the analysis report was made available for public review and comment between December 11, 2018 and January 25, 2019. The department received public comments from 45 individuals and organizations, as well as the Great Lakes Indian Fish and Wildlife Commission. These comments are summarized below, along with the department's responses.

I. Overall Comments on the Document and Strategic Analysis Process

- **Comment:** The strategic analysis report was long, complex, and included language that may not be easily understood by all audiences and stakeholders.
 - **Response:** The length of the report and use of technical language is a function of the scope of the analysis and complexity of the subject matter. To aid readers, the document includes a glossary and a list of acronyms and abbreviations. The digital version includes hyperlinks, tabs, bookmarks and cross-references to enable readers to quickly locate and navigate between sections and topics that are of particular interest. The executive summary was also edited to improve clarity.
- **Comment:** The analysis includes a very wide range of alternatives, including some that do not seem realistic or likely to be implemented.
 - **Response:** Alternatives were based on suggestions made by stakeholder interviewees, reviews of the scientific literature, and additional discussions with APM stakeholders and department staff. A discussion of the scope and intent of management alternatives is provided in the introduction to Chapter 8.
- **Comment:** The document lacks a focus on aquatic invasive species (AIS) prevention, which is critical and should be a top priority.
 - **Response:** Aquatic invasive species prevention is outside the scope of the strategic analysis. This topic is covered by the Wisconsin Aquatic Invasive Species Management Plan, the final version of which is scheduled to be released sometime in 2019. Clarification on this has been added under *To the Reader*.

- **Comment:** The Midwest Aquatic Plant Management Society did not have time to make specific comments but offered to provide connections to the latest peer reviewed literature and its members as future resources to support the strategic analysis process.
 - **Response:** Thank you for the offer. We cited a list of over 600 peer reviewed publications but are interested in receiving any pertinent literature we may have missed. Many of the Society’s Wisconsin members did provide comments.
- Several comments were received regarding minor errors and proposed text edits throughout the document. Responses:
 - The caption for Figure 2.5 was updated to better reflect the content of the figure.
 - An error was corrected in Chapter 5, page 31 (“with” changed to “within”).
 - A definition for anthropogenic was added to the glossary.
 - References to the number of lake associations and lake districts in Wisconsin were edited for consistency and accuracy in sections 4.1 and 5.
 - A grammatical error was corrected in Collaboration alternative 10.
 - A mistyped number was corrected in S.3.5 (Biological Control), page 170. 38 was changed to 138.
 - An error was corrected in S.2.1, page 120 (“comment” changed to “common.”)

II. Technical and Non-Programmatic Comments

The following section summarizes and responds to various technical comments received, as well as other feedback submitted on topics other than program policies or regulations.

Comments on descriptions of chemical treatments and effects

- **Comment:** The analysis does not explain how the purchase of herbicides is currently regulated.
 - **Response:** Additional language has been added to Section 1.2. All pesticides sold in Wisconsin must be registered by the Environmental Protection Agency (EPA) and licensed by the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP). While DATCP does not have any specific regulations on the sales of aquatic herbicides, sales of any pesticide in Wisconsin must comply with the general requirements in Section ATCP 29.41, Wis. Admin. Code. There are no currently registered aquatic herbicides that are restricted use pesticides (RUPs), which would require certification to both purchase and apply these products.
- **Comment:** Several commenters discussed the characterization of herbicide resistance and methods for managing this issue.
 - **Response:** The topic of herbicide resistance is covered in Section 7.5 and includes the most current scientific information available on this evolving and complex issue.
- **Comment:** The document should address how long-lasting herbicides have different effects on target and non-target species.
 - **Response:** The topic of herbicide impacts on both target and non-target species for a variety of different herbicides (including long-lasting herbicides) is discussed at length in Supplemental Chapter 3.3.

- **Comment:** The analysis and management alternatives could better address potential impacts of chemical treatments on lakes, including long-term and sublethal impacts.
 - **Response:** The topic of potential impacts of chemical treatments on lakes, including long-term and sublethal impacts is summarized in Supplemental Chapter 3.3, and includes the available scientific information on the topic at the time of publication. The strategic analysis report summarizes current information on APM but does not establish department policy for the review of specific APM projects or proposals. Rather, it is intended to serve as an informational resource to help decision-makers and the public to better understand the topic, and to aid in the crafting of future policy.
- **Comment:** Several commenters asked how department staff make decisions about permits for chemical treatments. For example, the strategic analysis does not explain how staff make decisions on spot treatments and repeated treatment of lakes, or whether grant-supported and non-grant supported chemical treatments are evaluated differently.
 - **Response:** Section 1, *Legal Authority for Aquatic Plant Management in Wisconsin* includes a discussion of the laws and policies that the department must consider in issuing a permit. As cited at the end of Section 1.2, *Manual Code 3261 Procedures for Processing Permits...* directs staff on how these laws and policies are consistently considered in the review of a site-specific permit. As noted, however, the Manual Code has not kept up with changes in APM practice. Section 8.6 *Consistency in Evaluating Permit Applications* states, “There is no explicitly-defined permit review process.” That section goes on to discuss various ways this deficiency could be addressed.
- **Comment:** If the department approves a lake management plan, does this mean that it must approve a permit to do what is stated in the plan?
 - **Response:** No. A management plan may inform a permit decision or serve to establish eligibility for a grant program but does not dictate permit issuance. For mechanical harvesting, a harvesting plan may be required and attached to the permit when a multi-year permit is sought.
- **Comment:** The analysis states that a wait-and-see strategy “...is appealing because it may require a smaller financial investment up front and extensive cost savings in the long-term if abundance and impact remains low.” This is not entirely accurate and should be modified with a caveat that additional research is needed.
 - **Response:** Comment noted. This language was modified within Section 7.3 to better reflect the variability which has been observed across lakes that have taken this ‘wait and see’ management approach.
- **Comment:** The definition of a large-scale treatment is dependent on the total acreage of the lake (analysis references 10 acres).
 - **Response:** Comment noted. The legal and ecological definitions of a large-scale treatment are outlined in Section 7.4. From an ecological standpoint, large-scale treatments are those in which the total quantity of applied herbicide is anticipated to have a lakewide effect on plants, which is dependent on the overall total acreage of the lake. However, large-scale treatments are legally defined in under Section NR 107.04 (3), Wis. Admin. Code as those exceeding 10 acres in size or more than 10% of the littoral zone.

- **Comment:** Aquatic plant management considering seasonality of some species runs counter to the consideration of stratification. Planning early treatments for curly-leaf pondweed or Eurasian watermilfoil (EWM) because these species are active early is at odds with planning treatments later in the season to allow a lake to stratify and thereby minimize the quantity of herbicide applied. This should be explicitly acknowledged and resolved.
 - **Response:** Comment noted. This is a complex issue that will be further considered in future discussions of APM strategies and policy development. There have been many documented cases of early season, large-scale herbicide treatments successfully conducted during the window of time when target plants are young and most vulnerable to the effects of herbicide – and while early season thermal stratification is simultaneously present – allowing a more limited quantity of herbicide to be applied. While this window of time can be challenging to plan for, achieving an early season epilimnetic treatment after stratification has set in has been successfully implemented on numerous lakes across the state (i.e., see Nault et al. 2018).

Comments on descriptions of non-chemical control methods

- **Comment:** The strategic analysis generally emphasizes chemical treatment and should better discuss non-chemical techniques.
 - **Response:** Comment noted. Section S.3.3 notes that herbicides are currently the most commonly used method of aquatic plant control in Wisconsin. Chemical treatments are a major focus of public interest and recent research. An overview of non-chemical techniques is provided in Section 2.2, and Sections S.3.4 through S.3.8 discuss these techniques in detail. Mechanical harvesting is well described and harvesting technology and methods have not changed considerably since early evaluations. Diver-Assisted Suction Harvesting (DASH) is a relatively new management approach and preliminary information on this technique is discussed in the document.
- **Comment:** Diver/snorkel hand-harvesting should be included alongside DASH as they are similar to DASH, but do not require a permit. Hand removal techniques are not only suitable for shallow water.
 - **Response:** Comment noted. Section S.3.4.1, *Harvesting: Manual, Mechanical, and DASH* was divided into two sections, one containing information on manual and mechanical cutting, and one containing information on hand pulling and DASH.
- **Comment:** The analysis could include discussion of using harvesters to "top chop" EWM.
 - **Response:** An overview of mechanical harvesting is provided in Section S.3.4.1, and the depth and frequency of plant cutting are variables discussed within this section. An additional citation (i.e., Breck et al. 1979) that summarizes numerous historical mechanical harvesting studies was also added to this section.
- **Comment:** The analysis needs to acknowledge additional issues related to non-chemical methods including the scale at which manual techniques are effective, timing, and potential AIS dispersal.
 - **Response:** Timing of non-chemical methods is discussed for mechanical harvesting within Section S.3.4.1. DASH is a relatively new management approach which is currently being assessed and information on optimum timing and effective scale of treatment is not readily available. NR109 states that any plants which are cut/dislodged using non-chemical methods (i.e., mechanical harvester, raking, hand removal, DASH, weed rollers, etc.) need to

subsequently be removed from the water and properly disposed of. Cutting of plants without subsequent removal is not permitted under NR109.

- **Comment:** The description of non-chemical approaches mixes recognized useful strategies with those that are unapproved, which makes these sections less useful.
 - **Response:** Comment noted. The strategic analysis report aims to present all of the information on APM techniques, including ones that are permitted in other areas of the Midwest, but not permitted within Wisconsin (e.g., grass carp).
- **Comment:** The analysis report does not provide enough detail about the use of shoreland plantings for nutrient management.
 - **Response:** Comment noted. Extensive detail about this topic would be beyond the scope of the analysis. See Section 7.8 for a discussion of the role of nutrient management in APM. The benefits of shoreline plantings are also highlighted in Other Topics - Alternative 1 in Section 8.8. “Creating and maintaining healthy, natural shorelines and implementing watershed protection plans to prevent additional sediment and nutrient runoff from reaching the lake should be part of a plant management strategy.”
- **Comment:** The description of drawdowns as a management approach does not align with some stakeholders’ experiences.
 - **Response:** Comment noted. Section S.3.4.5 notes that “this management technique is not effective for control of all aquatic plant species” and discusses various factors that can affect the outcome of drawdowns.
- **Comment:** The analysis notes that more research is needed on the efficacy of using control as an AIS containment strategy. It should be possible to answer the question of efficacy through literature review or existing department data.
 - **Response:** Comment noted. While both suggestions are valid first steps, we believe that substantially more effort and research would be required to reach meaningful conclusions about efficacy under various conditions relevant to Wisconsin. This level of analysis would be beyond the scope of a strategic analysis.

Comments on economic data and analysis

- **Comment:** The estimate of average household willingness-to-pay for APM to control aquatic invasive plants is questionable because it is based on assumptions and extrapolations.
 - **Response:** This estimate is based on empirical data collected via a nationwide survey of 1,400 randomly-selected households (McIntosh et al. 2010). Assumptions and extrapolations were necessary to reflect current conditions in Wisconsin, as opposed to the total-invasion scenario presented to survey participants. As noted in Section 4.2, the resulting estimate is likely to be conservative.
- **Comment:** Estimates of the “indirect” economic benefits of APM, particularly those related to tourism and property values, should be further refined.
 - **Response:** Comment noted. Strategic analyses rely on the best available data and existing research. In the case of APM’s impact on tourism, no empirical research has been conducted to date. Several studies have analyzed the effect of Eurasian watermilfoil on property values, but as noted in Section 4.2 these have various methodological limitations. The list of management alternatives in Chapter 8 includes conducting a more comprehensive economic analysis of APM in Wisconsin (Section 8.4, alternative 2.)

- **Comment:** Several commenters expressed general support for additional economic analysis, although one questioned the value of investing limited resources in economic analysis instead of other activities and alternatives.
 - **Response:** Comments in favor of and opposed to additional economic analysis have been noted. Such analyses would not necessarily be conducted by the department, nor would they necessarily use resources that would have supported other APM-related activities.

Comments on monitoring

- **Comment:** The strategic analysis report does not include an evaluation of various monitoring methodologies.
 - **Response:** A discussion of aquatic plant monitoring techniques and their applicability was added in Section 2.4. While there are many aquatic plant sampling methodologies that have been implemented over time (i.e., transect surveys, biomass surveys, SCUBA surveys, quadrat surveys, visual surveys, etc.), the department has implemented a standardized and repeatable point-intercept based sampling methodology from 2005 to present (Hauxwell et al. 2010; Mikulyuk et al. 2010), which allows for quantitative data to be collected in a standardized way to allow for comparisons of aquatic plant community data across both time and space.

Comments on APM survey

- **Comment:** The survey used in the strategic analysis is based on responses from a limited set of stakeholders, and the discussion of results does not fully address concerns raised about economic impacts of AIS.
 - **Response:** Section 6.1 describes how the survey was developed to determine a valid representative sample size and to gather a wide variety of stakeholder interests. We believe the summaries accurately represent the range of stakeholder concerns including the costs and benefits of APM.

Other comments

- **Comment:** Cyanophytes and cyanobacteria are only briefly discussed.
 - **Response:** Comment noted. An overview on Cyanobacteria and Algae Management is provided in Section S.3.6, but the commenter is correct that this is not a primary focus of the strategic analysis. While APM may influence algae and cyanobacteria, they are not the primary target of APM.
- **Comment:** No information is provided about how invasives behave or are controlled in their natural habitats, or natural conditions causing EWM die-offs.
 - **Response:** Comment noted. Very little published information is available on how species that act invasively in the U.S. behave in their natural native range. A summary of studies which examined long-term data on unmanaged Eurasian watermilfoil populations is included in Section 7.3 (Strategies for Managing Non-Native Aquatic Plants).

- **Comment:** Avoiding impacts to special concern species is not legally required by either the state endangered species law or the federal Endangered Species Act. Optional edits to this section were proposed.
 - **Response:** The suggested edits were incorporated into Appendix B under the section titled “The permitting sequence.”
- **Comment:** The discussion of control methods for woody species doesn’t accurately characterize the state’s woody plant communities.
 - **Response:** Section 3.3 (Herbicide Treatment) includes information on a variety of approved chemicals for aquatic/riparian use, as well as information on the type of plant growth forms (i.e., submerged, floating, emergent, herbaceous, woody, etc.) which the product is labeled to control. Section 3.3 does not advocate for control of any particular type of plant group, but rather is intended to provide factual information on usage of each individual chemical.
- **Comment:** The analysis should include discussion of compliance/enforcement.
 - **Response:** An additional note about enforcement authority was added to section 1.2.
- **Comment:** Overall, only economic benefits of APM are described. A case is not made for the resource-based benefits.
 - **Response:** Sections 7.1 and 7.2 describe a variety of goals and benefits of APM for different stakeholders and discuss the ecological rationale for APM.
- **Comment:** A comment was received about whether a particular interview conducted by department staff was included in the final document.
 - **Response:** The map in section 6.1 was corrected to accurately show all stakeholders interviewed for the strategic analysis. The topics discussed in section 6.2 and the interview quotes provided in Appendix E reflect an effort to summarize the wide range of interviewee viewpoints and key issues raised. All interviews (including any not directly quoted in Appendix E) were used to inform the strategic analysis.
- **Comment:** The strategic analysis should address climate change as it relates to APM.
 - **Response:** A discussion of climate change and its potential impacts on aquatic ecosystems was added to section S.2.4.
- **Comment:** Managing invasives is more important than managing native plants, but much of the strategic analysis focuses on APM in general.
 - **Response:** The scope of the strategic analysis was APM in Wisconsin. The department is simultaneously updating a statewide Aquatic Invasive Species Management Plan. A final document is expected to be released later in 2019, but a draft version can be viewed at <https://dnr.wi.gov/news/input/documents/guidance/AISPlanDraft.pdf>. The *To the Reader* page at the beginning of the strategic analysis report has been edited to note this.
- **Comment:** Would the department’s Recreational Boating Facilities (RBF) program cover the cost of a boat for a lake group, if that boat is used as a work platform/transport barge for EWM Control?
 - **Response:** Transport barges for plant harvesting programs are grant eligible under RBF. It is not clear what is meant by a work platform.

III. Comments on Specific Management Alternatives

Many individuals and organizations expressed their support for- or opposition to specific management alternatives listed in sections 8.1 – 8.8. Many of the comments focused on alternatives related to grant processes, permitting, and ensuring department consistency.

Overall response to comments: Alternatives were based on suggestions made by stakeholder interviewees (see Chapter 6 and Appendix E), reviews of the scientific literature, and additional discussions with APM stakeholders and department staff. Every alternative suggested by stakeholder interviewees was included in Chapter 8. As is the case with all strategic analyses, the department is neither prioritizing nor advocating for any particular alternative. For this reason, comments on individual items were noted but no alternatives were altered or removed from the final document. However, the department appreciates the time and effort many commenters invested in reviewing the extensive list of alternatives, and will retain this feedback to help inform future policy development and discussions about the direction of APM in Wisconsin. A discussion of the scope and intent of management alternatives is provided in the introduction to Chapter 8.

IV. Policy Recommendations and Other Programmatic Comments

Many comments focused on policy or regulatory issues addressed in the management alternatives listed in Chapter 8, as well as the department’s APM policies in general. These comments are categorized and summarized below.

Overall response to comments: Comments regarding policy issues can help the department identify ideas in the strategic analysis that are of particular interest or concern to stakeholders. The department and its partners will use this feedback to inform discussions about APM strategy and to support future policy development. However, it is important to note that the strategic analysis report itself does not establish policy. Any future regulatory changes would include opportunities for public review and input on specific proposed policies.

Comments on the grant program

Numerous comments focused on recommendations for the surface water grant program. The department is currently in the process of revising and consolidating the administrative codes governing this program. Comments received during the APM strategic analysis comment period were shared with department staff managing the code revision, but interested stakeholders are also encouraged to participate in upcoming opportunities for public engagement in that process. For more information, please visit <https://dnr.wi.gov/Aid/nr193.html>.

- **Comment:** Many commenters believe State funding of APM activities should be sustained or increased. Some commenters suggested that increases in funding could increase department workloads and wouldn’t necessarily resolve issues related to the distribution of grant funds.

- **Comment:** Concerns were expressed about management alternatives that describe reducing or eliminating grant funding for APM. Some commented that the department should provide all of the funding, rather than requiring matching funds from stakeholders.
- **Comment:** User fees could be considered to sustain grant funding. Other suggestions included a tiered grant system for different types of applicants, or a loan option for applicants that have previously received grant funding but have not demonstrated success with their control methods.
- **Comment:** Many comments addressed potential ways to distribute grant funding. Several commenters said that funding should not be limited based on an applicant's past grant awards, although some thought this may be a fair approach.
- **Comment:** Some commenters said that the grant process has become very competitive, and said that they now need to include expensive supplementary elements in order to receive funding. Some said that watershed-level approaches and partnerships should be encouraged but not required.
- **Comment:** Several commenters expressed some frustration with the distribution of grant funding, the competitive nature of grants, and how grant scoring does not always align with priorities or seems to disadvantage smaller lakes. Pros and cons to setting clearer criteria for grants were described. Commenters suggested that the grant program needs consistency and strategic direction moving forward.
- **Comment:** A workgroup of stakeholders who have received or applied for grants could support decision-making on the future of the grant program.
- **Comment:** Surface water grants should not be allowed for wetlands where more than one-third of the work occurs on private property.

Comments on overall APM strategy

- **Comment:** Various concerns were expressed with using a "wait and see" approach to AIS control, and the department's approach to spot treatments.
- **Comment:** Comments were mixed on actions that might lead to a reduction in herbicide use. Some said that the department should put less emphasis on herbicide use overall, while others emphasized that chemical treatment is the best tool for APM, and that less herbicide use could result in increased AIS.
- **Comment:** The department should set objective thresholds that warrant APM (e.g. density of affected areas), rather than establishing a bias for or against any particular AIS management method.
- **Comment:** There should be more flexibility in APM to control native as well as invasive species.
- **Comment:** There was positive feedback for options that address runoff, encourage ecological stewardship, and support a wide and flexible range of solutions to APM issues.
- **Comment:** The State should do more to encourage and support the formation of lake districts.
- **Comment:** Comments were mixed (for and against) existing and potential new regulation of private ponds.
- **Comment:** When deciding if a treatment was successful, the department should consider biomass and AIS impairment reduction, rather than just frequency of occurrence .

Comments on chemical treatments

- **Comment:** Chemical control strategies should include some degree of field-based, alternate day-of-treatment options, when these are warranted by conditions.
- **Comment:** Requirements for posting notices of chemical treatment are, in some cases, burdensome or excessive.
- **Comment:** Many lake plans establish “triggers” for chemical treatment. A commenter suggested that such triggers are acceptable for assessing the plan, but not for initiating chemical treatment.
- **Comment:** Could lakes with high native-plant diversity be off-limits to treatment with long-lasting herbicides (e.g. fluridone), with the expectation that many natives are likely to be negatively affected and that lost natives are likely to be replaced by AIS?
- **Comment:** The idea of a DATCP certification for some consultants or department staff received mixed feedback. Some said it would be helpful, while others noted that it may be unnecessary or duplicative.

Comments on non-chemical control methods

- **Comment:** Mechanical- and hand harvesting of aquatic plants in accordance with established guidelines should be allowed under a general lake permit. Harvest monitoring should be handled by County AIS Coordinators with department oversight.
- **Comment:** IPM is important, but certain methods (such as DASH) should not be mandated in cases where they will not be effective.

Comments on permitting, and concerns about policies that seem to take a “one size fits all” approach

- **Comment:** While efforts to streamline department processes or improve consistency are generally a good idea, the department must ensure that the unique qualities of different waterbodies, communities, and regions are taken into consideration.
- **Comment:** Flowcharts or other decision-making tools must acknowledge differences between lakes. Some commenters noted specific characteristics like size, region, AIS history, or public access. Some said that if decision-making tools are used, they should be guidelines rather than strict rules.
- **Comment:** Some commenters expressed concern that increased permitting consistency could make it more difficult to obtain permits or lengthen the process.
- **Comment:** Any new policies to increase consistency should make realistic allowances to grant exemptions, waivers, and alternative management plans.
- **Comment:** Permit processes and decision-making tools should separate invasives from non-invasives.
- **Comment:** Mixed feedback was provided on permit fees, with some commenters supporting future increases, some opposed, and some unsure about whether increased fees would help workloads.
- **Comment:** Mixed feedback was provided on multi-year permitting. Some commented that it could be beneficial in some cases (e.g. DASH, private ponds, stormwater ponds) or reduce workloads, while others expressed opposition to this idea.

- **Comment:** While some commenters supported the idea of establishing a limited application window for permits, several noted that the need for a permit may arise unexpectedly or at different times of year. Comments suggested that a set time window should include allowances for extenuating circumstances or new AIS populations.
- **Comment:** The department should change alum permits from NR109 to NR107 permits.
- **Comment:** For lakes where there is an association, there should be a consensus of the Board as well as a majority of the association members agreeing to chemical treatment before a permit is granted.
- **Comment:** The department should change the requirements for large-scale permits (NR107) from 10% or 10 acres of littoral zone, to 20% or 20 acres, or stop requiring large-scale permits altogether.

Comments on department staffing and operations

- **Comment:** Bureaucratic restrictions can be an annoyance and should be streamlined or eliminated where possible. Well-trained staff should have flexibility and not be limited in their work by statewide mandates. Simplified processes are generally supported.
- **Comment:** Several commenters noted that staffing is an important component of implementing a strong APM strategy. Some provided suggestions for future staffing, such as prioritizing permanent and/or regional staff. Many expressed support for increased staffing or training, but some note that workload issues may be more effectively addressed by streamlining existing processes.
- **Comment:** The department should not depend on contract employees making permit decisions reserved for department personnel.
- **Comment:** A technical review team is valuable in APM decision-making. However, an objective, experienced APM coordinator can provide structure to the team and should ultimately be the decision-making authority.

Comments on communications, outreach, and collaboration

- **Comment:** Commenters were generally supportive of activities related to better communications and outreach, although concerns were raised about any efforts that might burden processes, invite disruption from the public, or create unnecessary work.
- **Comment:** Increased collaboration or opportunities for public input can be positive, as long as they do not become cost-prohibitive or impact the efficiency or effectiveness of APM work.
- **Comment:** The department should work to improve its relationship with lake organizations and other stakeholders, including resorts and those whose livelihoods are dependent on the state's aquatic resources.
- **Comment:** Industry should be involved in efforts to improve outreach and engagement.
- **Comment:** How do staff deal with the impression that some citizens have that department is "not letting them treat?" This could potentially be addressed in outreach alternatives or efforts.

Comments on monitoring

- **Comment:** Policies or regulations requiring additional or very extensive monitoring could be cost-prohibitive for stakeholders and a burden on the department.
- **Comment:** Some commenters believe that monitoring requirements described in some of the alternatives were already covered under existing regulations.

- **Comment:** If monitoring should be conducted season to season, there should never be a situation where a lake is treated with herbicides two years in a row – since it would not be possible to establish the effectiveness of the treatment. This runs counter to the often-cited usefulness of treating curly-leaf pondweed many years in a row.

V. Great Lakes Indian Fish and Wildlife Commission Comments

In addition to the public comments described above, comments were provided by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC).

- **Comment:** The analysis should acknowledge the *LCO vs. Wisconsin* case and tribal consultation requirements for activities that may impact certain species.
 - **Response:** Comment noted. Section 1.4 Wild Rice has been updated to elaborate on this.
- **Comment:** The analysis states that DMA *formulations* of 2,4-D are not considered toxic to fish or invertebrates, but acknowledges that preliminary results of studies on native fish embryos and larvae indicate negative impacts. This undermines the original conclusion, perhaps a caveat could be added.
 - **Response:** See Section 3.3, Herbicide Treatment (pg. 128-129). An assessment of ecological risk data is required by EPA to register a product for use in the environment. Herbicide products are re-evaluated by the EPA approximately every 15 years and take into account any new information which is available at the time of re-evaluation. The herbicide 2,4-D was last re-evaluated for re-registration in 2005, and the estimated registration review decision date was in 2017 (but has yet to be released). Recent information regarding the preliminary results of studies on potential fish impacts have been shared with EPA for their consideration in the re-registration review process.
- **Comment:** GLIFWC biologists note that there is literature that points to potential impacts to wild rice from 2,4-D.
 - **Response:** Comment noted. A sentence summarizing the findings of Nelson et al. 2003 regarding the potential impacts of 2,4-D on wild rice was added to Section 3.3.2.
- **Comment:** The section on Endothall fails to mention that the dipotassium salt is toxic to early life stage fish, especially walleye.
 - **Response:** Laboratory studies have shown the dimethylalkylamine formulations are toxic to fish and macroinvertebrates, but the department is not aware of any studies which indicate that the dipotassium salt formulation is toxic to early life stages of fish. The product labels for the dipotassium salt formulations do not mention toxicity towards fish (but do state toxicity towards mammals). If there are studies which GLIFWC is aware of that indicate otherwise, the department would be interested in reviewing those materials.
- **Comment:** The strategic analysis report refers to “a formal review process designed to help evaluate proposed APM actions and potential impacts to treaty reserved rights...” GLIFWC and department staff collaborate when APM permit applications are submitted, but there is no formal, written process. Developing such a document that memorializes current aspects of the process that are working well and clarifies other less well-defined aspects of the process, would be very helpful.

- **Response:** Comment noted. The word 'formal' was removed from this statement within the APM SA to reflect the current review process.
- **Comment:** GLIFWC supports work that would increase the electronic data-sharing of management activities, allowing for the ability to track APM permits through the years, permit decisions, and both pre- and post-treatment monitoring reports.
 - **Response:** Comment noted. The department is currently working towards making all APM permits and treatment records publicly available via an online database.