

Appendix Z: Response to Comments

Major Modification of the Aquatic Plant and Algae Management General Permit and Aquatic Noxious Weed Control General Permit

Ecology received comments from 15 commenters regarding the major modification of the Aquatic Plant and Algae Management NPDES and State Waste Discharge General Permit (APAM permit) and the Aquatic Noxious Weed Control NPDES and State Waste Discharge General Permit (NOX permit).

Ecology assigned a reference key number to each commenter based on the date each comment was received. See Table 1 below. The number assigned to the commenter is used as a key to determine which comments the commenter submitted. Each comment/response pair has a list of the commenter reference key numbers at the beginning.

Ecology summarized comments during development of this Response to Comments (RTC). Thank you to all commenters for your input. Ecology considered each comment in its permitting decision.

The following links are provided for your reference:

- APAM permit document (requirements that must be followed):
<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Aquatic-pesticide-permits/Aquatic-plant-algae-management>
- NOX permit documents:
<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Aquatic-pesticide-permits/Aquatic-noxious-weed-control>
- Chapter 90.48 Revised Code of Washington – Water Pollution Control:
<https://app.leg.wa.gov/rcw/default.aspx?cite=90.48>
- Chapter 173-226 Washington Administrative Code – Waste Discharge General Permit Program:
<https://apps.leg.wa.gov/wac/default.aspx?cite=173-226>

Table 1: List of Commenters

Reference Key Number	Commenter Name, Affiliation
1	Anonymous
2	Anonymous
3	Alan Chartrand
4	Douglas Dorling, Northwest Aquatic Ecosystems
5	Shellie Dow
6	Marc Eylar, Kittitas County Noxious Weed Control Board
7	Travis Fuller, SePRO
8	Larry Garcia, Seattle City Light
9	David Kluttz, Lakeland Restoration Services
10	Koenraad Marien, WA State Dept. of Health
11	Ben Peterson, King County Noxious Weed Program
12	Don Russell
13	Teresa Scott, WA State Dept. of Fish and Wildlife
14	Randi Thurston, WA State Dept. of Fish and Wildlife
15	Tom Warmuth, BioSafe Systems

Comment 1: 1

Ecology needs to verify permit applicants have authority to have a waterbody or area of waterbody treated.

AND. . .

Ecology should only issue permits for areas where there are impacts from aquatic invasive plants. Treating other areas shouldn't be allowed for access or aesthetics.

Ecology Response:

Thank you for your comments. Addressing these types of changes is beyond the scope of the major modification of the APAM and NOX permits. Such comment are appropriate during the comment period for the full reissuance processes in approximately 2020 and 2021.

Comment 2: 2, 5

Ecology should require use of non-chemical methods of aquatic plant control.

AND. . .

Ecology should not add herbicides to the APAM and NOX permits.

Ecology Response:

Thank you for your comments. The APAM and NOX permits can only require controls on the use of herbicides, algacides, and phosphorus inactivation products where a discharge to water occurs. Without a discharge, as in the case of physical/mechanical methods of aquatic plant control, Ecology permits such as the APAM permit do not regulate the activity.

Each active ingredient that Ecology adds to the APAM and NOX permits is assessed through the development of an environmental impact statement (EIS). In 2017, Ecology completed a supplemental EIS that assessed the new active ingredients (e.g. aminopyralid, topramezone) along with updating the assessments on already allowed active ingredients (e.g. triclopyr TEA, endothall). The EIS is an additional step for determining if there may be impacts from an active ingredient. This step would not exist if a permit were not required for aquatic pesticide use. Without a permit the only regulation on the use of these pesticide products, or assessment of their potential impacts, is the EPA product registration process. The EIS identifies potential significant impacts and suggests possible mitigation measures for the impacts, which Ecology may incorporate into the APAM and NOX permits.

Based on the 2017 EIS, Ecology did not find potential significant impacts to non-target species. However, due to one active ingredients (aminopyralid) having a long effective time in the soil, Ecology is requiring additional monitoring to determine the length of impacts to plant regrowth. See response to Comment 13 for additional information. The 2017 EIS document may be accessed here: <https://fortress.wa.gov/ecy/publications/SummaryPages/1710020.html>

Comment 3: 4, 9, 15

Please approve the use of liquid formulations of products such as Phycomycin, PAK 27, or GreenClean 5.0. These products are easier and safer for my operation to apply.

AND. . .

Ecology used the incorrect active ingredient name for GreenClean 5.0.

Ecology Response:

Thank you for your comment. Ecology decided to include the active ingredient peroxyacetic/peracetic acid plus hydrogen peroxide in the APAM permit as part of the major modification.

Ecology corrected the active ingredient name from sodium carbonate peroxyacetic acid to the actual International Union of Pure and Applied Chemistry (IUPAC) chemical names of the active ingredient combination: peroxyacetic/peracetic Acid plus hydrogen peroxide.

Comment 4: 6, 7

Adding aminopyralid and topramezone to the APAM and NOX permits will be helpful in targeting certain invasive aquatic weed species with greater selectivity while minimizing non-target impacts.

AND. . .

Ecology should also add florpyrauxifen-benzyl to the NOX permit.

Ecology Response:

Thank you for your comment. Ecology has decided to add aminopyralid and topramezone to both the APAM and NOX permits

Originally, the request to include florpyrauxifen-benzyl was for Eurasian watermilfoil control work, which, because this type of work is in-water it could only be authorized under the APAM permit. However because the product label includes riparian/shoreline uses, and because the public notice for both the APAM and NOX permits included the active ingredient, Ecology decided to add florpyrauxifen-benzyl to the NOX permit.

Comment 5: 7

Lanthanum-modified bentonite clay has multiple use patterns and can be dosed to target phosphorus specifically in the water column, sediment, or both. Lanthanum-Modified Bentonite Clay is less dense than water and settles rapidly where it increases sediment stability (Egomose, 2010). Re-suspension of Lanthanum-modified bentonite clay does not render it ineffective as a phosphorus sequestration tool. If active binding sites are still available, Lanthanum-modified bentonite clay will actually bind more phosphorus in the water column before quickly re-settling on the bottom.

Egomose, S., Reitzel, K., Andersen, F. Ø, & Flindt, M. R. (2010). Chemical Lake Restoration Products: Sediment Stability and Phosphorus Dynamics. *Environmental Science & Technology*, 44(3), 985-991. doi:10.1021/es903260y

Ecology Response:

Thank you for your comments. Adding additional restrictions to alum is beyond the scope of the major modification of the APAM permit. Ecology has reconsidered the requirements in APAM permit special condition S4.D Table 4 for Lanthanum-modified bentonite clay and removed the

restrictions that were in the draft permit. Ecology may consider additional restrictions on all phosphorus sequestration products in the future as resuspension information becomes more available. Ecology is only able to authorize short-term (hours or days, WAC 173-201A-410) exceedances of water quality criteria (such as that for turbidity) without adding additional requirements. If resuspension increases turbidity, further actions may be necessary.

Comment 6: 8

One of the new adjuvants proposed for inclusion in the APAM and NOX permits appears to contain 4-nonyl phenol, an alkyl phenol ethoxylate. Alkyl phenol ethoxylates should not be allowed in either permit because they are persistent, bioaccumulative, aquatic toxins.

Ecology Response:

Ecology has not included any adjuvants in the APAM and NOX permits that contain alkyl phenol ethoxylates.

Ecology consulted with WSDA Pesticide Program staff about adjuvants listed in the APAM and NOX permits that appear to include 4-nonylphenol, an alkyl phenol ethoxylated. Due to how adjuvant chemicals are listed on product labels, it is possible to mistake which chemical is actually included in the adjuvant. WSDA reviewed the adjuvant formulations and determined that the adjuvant does not contain any alkyl phenol ethoxylates.

Comment 7: 10

Aminopyralid, florypyrauxifen-benzyl, peracetic acid plus hydrogen peroxide, and topramezone are all newer active ingredient chemistries for aquatic use, with limited data available for potential human health impacts from exposure to treated areas. Product labels have limited information on public exposure restrictions to the treated areas. Ecology should take a cautious approach when including these new active ingredients in the APAM and NOX permits to minimize public exposure, inform the public when they are used, and where they are used. It would be prudent to include at least a couple hour re-entry restriction on required sign postings for aminopyralid, florypyrauxifen-benzyl, and topramezone in order to allow for dilution in the treated water. Because peracetic acid plus hydrogen peroxide is an oxidizer, this is especially important to protect water users from eye irritation.

Ecology Response:

Thank you for your comments. Ecology does not have the authority to prevent individuals from the public from going into treated areas if they choose. However, Ecology requires sign posting and includes re-entry times where appropriate on required shoreline sign postings to notify the public that treatment has occurred. This is to provide the public the opportunity to make an informed decision before entering treated areas.

Many aquatic use product labels do not include instructions on re-entry times, and even less have instructions on re-entry times for non-applicators. This makes setting suggested re-entry times for required shoreline sign-postings a challenge for Ecology. Re-entry times are Ecology's best effort to include a time to minimize public exposure should individuals choose to follow the suggestions on the signs.

Comment 8: 11

It would be helpful to have the APAM and NOX permit special conditions for The Application of Products sections of the permits to be more similar. This may make compliance with the permits easier for those who work under both permits.

Ecology Response:

Thank you for your comment. The suggested changes are beyond the scope of the major modification of the APAM and NOX permits. However, Ecology made note for the full reissuance processes that it may be easier for those who work as permittees under the APAM permit and limited agents under the NOX permit if the language and formatting in The Application of Products special condition were more similar.

Comment 9: 4, 12

APAM permit special condition S1.A.4 appears to conflict with the requirements in special condition S4.D Table 4. S1.A.4 specifies specific phosphorus inactivation products, but powdered iron is not included as it is in S4.D Table 4. Also, do the requirements of special condition S6.B also apply to powdered iron?

Ecology Response:

When Ecology included powdered iron in S4.D Table 4, the same change was not made to S1.A.4. Ecology has corrected the language in S1.A.4 to include powdered iron and lanthanum-modified bentonite clay.

Comment 10: 11, 13, 14

If Washington Department of Fish and Wildlife (WDFW) has changes to the treatment timing windows that are necessary based on new information, how should WDFW go about updating the treatment windows with Ecology?

AND. . .

WDFW is concerned about effects of pesticide application on fish and other priority species when air temperatures, and therefore water temperatures, get high. WDFW has witnessed some fish die-offs associated with aquatic pesticide applications under high-temperature conditions and we want to work with you to determine how applicators can best respond to these circumstances.

Ecology Response:

Thank you for your comments. Ecology looks forward to continuing to partner with WDFW to determine the best way to protect sensitive species and still allow treatment to protect all designated beneficial uses of Washington's waterbodies.

Treatment timing windows are determined by WDFW external to Ecology permit requirements. If, at any time, WDFW determines that an updated timing window is more appropriate for a waterbody, or portion of a waterbody, based upon new information, then Ecology will use the updated timing window. Generally, the process that Ecology has followed to determine a new treatment timing window is:

- Ecology receives a request for a waterbody specific timing window from a permittee.

- Ecology consults with the WDFW regional wildlife biologist.
- Based upon WDFW's decision about whether sensitive species are present, or when they are present, Ecology update's the list of timing windows we maintain and notifies the permittee of the new timing window.

A holistic change to the APAM permit to address temperature is beyond the scope of the major modification. However, Ecology has made note of this request to consider during the next full reissuance process in 2021 and 2022. Treatment timing windows could be used to address high temperature to protect a sensitive species or life-stage as a way to limit additional stressors during that time. However, in some circumstances, this limitation would need to be balanced with the need to treat harmful algae blooms which can be a threat to public health.

Comment 11: 13, 14

APAM permit special condition S4.B.4 Table 3: Permittees should check the treatment timing windows table for species other than fish. This is important because no toxicity data for aminopyralid, Topramezone, florypyrauxifen-benzyl, or peracetic acetic plus hydrogen peroxide is available for amphibians from the pesticide registration process.

Ecology Response:

Thank you for your comments. The EPA pesticide registration process includes an assessment of toxicological risk to aquatic and terrestrial organisms. However, some organisms like amphibians are not tested directly. EPA requires the use of surrogate species to determine amphibian toxicological endpoints. Birds are the surrogate for terrestrial life stages, fish for aquatic life stages. A summary of EPA's ecological effects characterization may be accessed here: <https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/technical-overview-ecological-risk-assessment-0>

Ecology has the authority to regulate discharges to waters of the state. Permittees are required to check for treatment timing windows before applying active ingredients subjects to timing windows. Where a timing window exists, and the active ingredient is subject to the timing window, Permittees must follow the stated instructions in order to treat.

Comment 12: 14

Ecology has not explained the justification for the 48-hour re-entry restriction. Other products in the table (i.e. glyphosate, imazapyr, etc.) don't have re-entry periods, so why does this product? If the label does not explicitly require the 48-hour re-entry period, the requirement should be removed from the APAM and NOX permits.

Ecology Response:

Thank you for your comments. Many aquatic herbicide product labels Ecology has reviewed do not have recreational user re-entry times or restrictions for riparian/shoreline treatments even though they may also indicate that the product can cause eye irritation (though this is mostly directed at applicators using the concentrate). However, some such as aminopyralid, may have re-entry times for agricultural uses for when the product is not yet dry on the target plants. Re-entry of the public (or applicators going back to continue treatment) into treated areas is most

likely equivalent to re-entry for agricultural workers, especially if the public is uncertain exactly which plants were treated.

In order to be most protective, Ecology decided to include the 48-hour worker protection re-entry requirement on the product label as the requirement on APAM and NOX permit signs for aminopyralid. Because this action is a major modification, Ecology limited the amount of changes made to the APAM and NOX permits and didn't make changes to the re-entry periods for other active ingredients. In the future Ecology may also consider changes to other active ingredient sign-postings for re-entry times where appropriate.

Comment 13: 3, 14

In APAM Permit special condition S4.B.4 Table 3: Treatment Limitations for Aminopyralid, change the language to allow limited applications of aminopyralid there are situations when a treatment area may contain a vacant lot/undeveloped lot that would complicate a treatment approach

AND. . .

The prohibition as expressed in NOX permit special condition S4.B.3.a may be more restrictive than is needed for the restoration plans in the application area. For example, aminopyralid use might be desired in sites where weed control is needed and future planting will not occur.

AND. . .

Aminopyralid should be included in the APAM and NOX permits with caution. Short and long term monitoring should be included in the permits to determine the actual effects of using this active ingredient in Washington environmental conditions.

Ecology Response:

Long-term (not hours or days) impacts to a designated beneficial use of a waterbody require Ecology to implement different statutory requirements than an active ingredient without long-term impacts.

The aminopyralid product label indicates that this active ingredient can be active for 18 months after treatment on agricultural lands if the agricultural residues are moved to a different location from where treatment or use occurred. This indicates the potential for long-term impacts. Ecology also did not have enough data to determine if long-term (not hours or days) impacts to habitat (a waterbody – which includes riparian/shoreline area – beneficial use) are probable when treating with aminopyralid in non-agricultural areas. Many different categories of land are treated under the APAM permit (e.g. residential shoreline, natural shoreline) across Washington.

Ecology limited treatment to areas that are already heavily impacted by human activities (e.g. urban lake residential shoreline) because of the uncertainty of long-term impacts. These already impacted areas are much less likely to contain desirable native riparian/shoreline plants than more natural undeveloped areas.

In addition, Ecology included a study requirement in the NOX permit to gather information for Ecology to use during the next full APAM and NOX permit reissuances (2020 and 2021) to make

a further determination on appropriate actions if long-term impacts are determined to be probable.

If only treating for State-listed noxious weeds in riparian/shoreline areas, it would be more appropriate to treat under the NOX permit, unless in-water or floating leaved plants are also targets of treatment. Treating under the NOX permit could help with data gathering and allow treatment in areas that are limited under the APAM permit.

In order to accommodate restoration projects where no replanting is planned, or where plant materials used are known to be resistant to aminopyralid, Ecology modified the NOX permit special condition S4.B.3.a to state: *“Aminopyralid (4-amino, 3,6-dichloropyridine-2-carboxylic acid), except where restoration projects may occur within 18 months of treatment unless the plant material is known to be resistant to the product or no-replanting is planned.”*

Permit conditions do not remove the federal requirement to follow the product label.

Comment 14: 11, 14

The detailed requirements regarding aminopyralid monitoring in the NOX permit should be included until uncertainties about this aminopyralid’s persistence in typical application locations in Washington is better understood.

AND. . .

It may not be appropriate in all situations to require ongoing post-treatment site assessments “...every year until desirable plant cover (non-noxious weeds) reaches 70 percent or more.” For example, if knotweed is treated on a sandbar, there may never be native vegetation recolonizing the site.

Ecology Response:

Thank you for your comment. Aminopyralid appears to be a useful new aquatic tool for riparian/shoreline plant control. However, Ecology is taking a cautious approach to including this active ingredient in the APAM and NOX permits and gathering data to better understand long-term effects to designated beneficial uses of waterbodies such as habitat.

The requirements for post-treatment assessment in special condition S6.A.2 is only for a sub-set of sites, not all sites. Where the site, such as a sand bar, is not likely to be stable and able to be assessed year-to-year for regrowth, the site may not be appropriate to be included in on-going post-treatment assessment.