Aquatic Invasive Species Management General Permit

Addendum to the Fact Sheet
Appendix C: Response to Comments

April 20, 2011

SUMMARY OF MAJOR PERMIT CHANGES

This is a summary of the changes made to the Aquatic Invasive Species General Permit (permit) in response to the public comments received between April 21, 2010 and June 11, 2010. In finalizing this permit, the Washington State Department of Ecology (Ecology) considered all of the public comments received during the public comment period and comments received during oral testimony at the public hearing held in Lacey Washington on June 7, 2010.

COMMENTS AND RESPONSES

Ecology published a draft Aquatic Invasive Species General Permit on April 21, 2010 for public comment. The public comment period ended June 11, 2010 at 5 PM. During the comment period, Ecology conducted a public hearing and workshop in Lacey. Ecology also accepted public comments via letter and email.

Ecology considered all comments in preparing the final permit. This Response to Comments documents Ecology's response to each commenter and any changes to the permit that resulted from the comments. Ecology received written comments from 14 people during the public comment period and received oral testimony from two people at the public hearing. Each communication from each commenter is numbered. This number allows the commenter to find Ecology's responses to their comments. Comments about similar permit issues are grouped together and summarized into one response. Comments about the Draft Environmental Impact Statement (DEIS) are summarized in an addendum to the DEIS Fact Sheet as a separate document.

The response to comments is broken into three sections:

1. General Comments about the permit
2. Comments on specific permit sections (sections that received no comments are omitted)
3. List of Commenters and Commenter Numbers

Section 1. General Comments about the Permit

Comment: *The Council*[1] *is strongly in support of this permit and believes it to be a valuable tool for invasive species management. It provides agencies with options for the control of invasive animals, which prior to this permit, had been significantly lacking. While the Council does not advocate for the use of pesticides for invasive species management, we understand that it may be the only viable control option in some cases, such as for zebra or quagga mussels. We appreciate the Department of Ecology's proactive approach to invasive species management in Washington. With this permit, agencies will be able to rapidly respond to new invasive species outbreaks, and, in doing so, reduce harmful environmental and economic impacts. (#1)*

> **Response:** Ecology appreciates the support of the Washington State Invasive Species Council for this permit.

Comment: *Neither the EIS nor the NPDES drafts address the very serious problem of assuring that rigorous science governs all aspects of deciding whether a so called non-native invasive species is actually detrimental in the long run to the ecosystem in which it has arrived, understanding the underlying reasons for its arrival as well. Citing lack of funding -- to assure that decisions are made on reliable scientific information, and preventing the revisiting of decisions because of new information which becomes available -- is irresponsible.*

I find the determination that certain species are non-native, invasive, and harmful and need to be eradicated has been approached subjectively, not with the scientific rigor that would result in an objective discussion and decision. In general, the impacts of the species that are the subject of the permit are totally speculative, based on a presumption that they will be harmful to the ecosystem, and that removing them will be beneficial.

And don't you think sound science would demand an evaluation as to how these eradications relate to concerns about global warming, coastal erosion from sea level rises, ocean acidification, oxygen deprived waters et al. or are our WA. State agencies among the deniers of climate change challenges.

I have witnessed a shameful lack of scientific rigor and subjectivity in a very personal way. In regard to spartina, for instance there was never any discussion about how the removal of spartina would impact shoreline erosion, and never an objective scientific study of what the grass's actual role in the ecosystem meant and responsible management alternatives were dismissed. The popular mantra was that East and Gulf coast science re spartina was irrelevant.

And although one of the prominent oyster growers maintained at public meetings that the grass was never a concern of the oyster growers—it was the birds---you find that that myth has been

[1] Refers to the Washington State Invasive Species Council.

perpetuated, by government agencies and the oyster grower himself. I never realized before living on Willapa Bay that science could be so corrupted.

Re objective decision making re Invasive Species: A colleague of mine Boyce Thornmiller, a marine biologist, graduate of the U of WA. pointed out a few years ago that there is no national scientific guidance for rapidly and effectively assessing the threat posed by an introduced species—and determining the preferred environmentally responsible management alternative. For example in Humboldt County where USFWS is funding mechanical removal of spartina, before removal occurs local scientists have insisted that the impact of removal on the food chain needs to be studied prior to removal. Good science. But that consideration never occurred in WA. State or in other parts of California because the eradication effort was politically driven.

My experience with spartina and seeing how the weed boards, county and state and the invasive species regulators act, is that decisions are rarely based on sound science but on speculation fueled by an interest in eradication with the use of chemicals. I see nothing in the DEIS or the Draft Permit to insulate science from the kind of politics that has driven it in the past.

There is a growing body of science that is challenging what has become a faddish discussion re invasive species and the resulting determination to eradicate them. There is a real need for taking a new look at invasive species, focusing on keeping them out of the ecosystem, and not giving short shrift to the no action alternative.

Related to concerns re the structural inadequacy of the risk assessment process is the failure to adequately understand the impact of biocides that are used in non-terrestrial situations, in this case the marine environment. It is not denied that chemicals will act differently in fresh water than they would in marine water. For instance the NPDES permit that governs the spraying of spartina throughout the state--has permitted Imazapyr, which EPA now says should be prohibited in marine and estuarine situations. This chemical was permitted in 2003, even though it was very clear that there had been no marine toxicity tests. And of course Kim Patton, of WSU and Miranda Wecker, Commissioner of DFW, aggressive promoters of chemical eradication had to be aware of that. And Brett Dumbauld, now of USDA at Newport, advised Entrix, author of the Patton inspired risk assessment (2003) not to test imazapyr on crabs because there was virtually no crab industry in Willapa Bay. Glyphosate --which is also permitted and is being associated with reducing the immunity of oysters to vibrio, as well as other serious human issues--was never tested on plankton something that certainly should have preceded its permitted use. AND THIS IS NOT JUST ABOUT WILLAPA BAY, THESE CHEMICALS ARE SPRAYED ALL OVER PUGET SOUND, ALL OVER WASHINGTON STATE.

THE BOTTOM LINE IS THAT THE CURE SHOULD NOT BE WORSE THAN THE DISEASE, AND PERHAPS INVASIVE SPECIES DESERVE A PRESUMPTION OF NOT BEING WORTH THE RISK OF WHAT IT TAKES TO ERADICATE THEM.

In conclusion, neither the EIS or the NPDES drafts seem to address the very serious limitations of science in deciding whether a so called non-native invasive species is actually detrimental in the long run to the ecosystem in which it has arrived, Understanding the underlying reasons for its arrival as well. And risk assessments of biocides to be used, have to be looked at realistically, and to even approach that, what's being used must be the subject of the assessment. (#2)

Response: This permit regulates the application of chemicals to manage nonnative invasive aquatic animals and nonnative invasive marine algae. Listing processes to determine invasive species detrimental to Washington State are outside of the scope of this permit and Ecology's regulatory authority. The permit references lists of invasive species developed under these other processes. Ecology disagrees with the commenter that the impacts of these aquatic nonnative invasive species are speculative. In the Draft Environmental Impact Statement (DEIS) and the Fact Sheet, Ecology provides examples of invasive species and the effects that their invasion has had on the environment and the economy. The impacts of the zebra mussel, for example, are well documented, although Ecology agrees with the commenter that not all species have as much documentation of impacts as the zebra mussel does.

Government scientists and regulators agree that preventing an invasion from occurring is the best strategy. Washington's Department of Fish and Wildlife (WDFW) and other Washington agencies invest many resources to preventing the introduction of new aquatic invasive species. However, in spite of best prevention efforts, invasive species are introduced. This permit provides additional strategies to the state for dealing with these new and established invasions.

Note: The Environmental Protection Agency (EPA) has reregistered imazapyr for marine and estuarine use. However, imazapyr is not one of the chemicals allowed for use under this permit because it only targets vascular plants.

Comment: *Is there an easy way to access the public comments that were received? (#2)*

Response: Ecology prepares a Response to Comments section (Appendix C in the Fact Sheet). Ecology posts all permit documents including the Response to Comments on-line at http://www.ecy.wa.gov/programs/wq/pesticides/invasive.html. In addition, Ecology sends each commenter an email link to the Response to Comments section when it publishes it to the internet.

Comment: *Spartina densiflora- I found evidence that one species of spartina is NATIVE to pacific waters and therefore should be allowed to grow thus protecting our shores from erosion and at the same time help SLOW climate change by producing oxygen! Rethink your policy concerning eradication of this plant especially during our earth's phase of rising seas!*

Migrating waterfowl and birds have and do carry Spartina densiflora seed. These seeds are on or in their bodies, and are more than likely spreading this migrating not invading plant. Ocean currents, changing temperatures and plant and animal migration go hand in hand! Who are we to play god? Three different scientists from three different states have admitted that this is a very probable theory. MIGRATION NOT INVASION! Please research Spartina densiflora and stop wasting tax dollars on chemicals to control this NATIVE not invasive plant. (#3)

Response: This permit addresses the chemical treatment of nonnative, invasive marine and freshwater animals and nonnative invasive marine algae. Ecology regulates herbicide treatment of marine vascular plants like *Spartina densiflora* under a different permit - the Aquatic Noxious Weed Management National Pollutant Discharge Elimination System (NPDES) permit. Listing and classification of all noxious weeds occurs under the jurisdiction of the State Noxious Weed Control Board though an annual public rule-making process.

Comment: *I understand that the Independent Shellfish Growers of Washington State have unanimously asked for a series of controls on the use of pesticides in marine waters. These agents have threatened their products in the past. I know this from personal experience when I was a guest at the Moby Dick Hotel and could not be served their signature oysters due to water conditions. This hurts the tourism industry, as well as local food producers.*

Please carefully consider their concerns. Thank you. (#14)

Response: Comment noted.

Comment: *The Independent Shellfish Farmers will not accept any science set forth by the PCSGA[2] or any University and extension office to be used in determining the safety of any chemical to be used. After seeing the list of approved chemicals in the draft all of our members agree that any chemicals that are to be on this list be open to peer review by the public through publication in major newspapers with a list of items that contain the active ingredients so that the common person can go to the store and read where these things can be applied. That way a true response from the public can be applied. (#6)*

Response: Chemicals in the permit have undergone a public review through this formal permitting process that allows for public input and comment. The permit and accompanying documents are available for download at any time on Ecology's website at http://www.ecy.wa.gov/programs/wq/pesticides/invasive.html. This process has provided the Independent Shellfish Farmers and the public an opportunity to review and comment on these chemicals.

[2] Pacific Coast Shellfish Growers Association

Comment: *Before any consideration is given to an application of chemicals of any kind into marine waters, the science and studies used in making the determination of asking for the use must be made available to our organization so that we can have the work peer reviewed by credible scientists who's job does not depend on the outcome of the study. Also these peer reviews must not include scientists who may work for a large member of our industry that will not necessarily be honest to the point that their review is in the best interest of all. After the reviews are done the majority should rule in the decision making process but all reviews must go on record so accountability can be maintained. (#6)*

> **Response:** Ecology solicited input to the list of chemicals from toxicologists. Scientists, your organization, and scientists selected by your organization had the opportunity to comment on the list of chemicals in the permit and in the DEIS during the public comment period for these documents. The DEIS provides an overview of each chemical proposed for use, examples of how each chemical might be used under the permit, discusses environmental and human health impacts, and proposes mitigation. The DEIS also outlines no action and other potential non-chemical management methods for invasive species. Its preferred alternative is an integrated and adaptive approach where the project proponent carefully evaluates all reasonable methods and selects one or more of the more the methods.

Comment: *For some reason all of our members are wondering why we are never invited to the table in this decision making process. We feel that of all the industry, we are trying the hardest to be sustainable and we have far more hands on experience than most scientists or the big companies. The layman's point of view of what they see on their land and what they do to control it or even if it is a problem should weigh heavily before any chemical response. In the past scientists have done studies and research at great cost and ended with huge detrimental effects when if the Independents where involved it would have been handled differently and reached the same result without harm to our industry. (#6)*

> **Response:** While some of the activities allowed under this permit have a potential to affect the shellfish industry, Ecology intends the permit to cover a broad range of nonnative invasive threats to both marine and freshwaters, potentially affecting many industries throughout the state. Ecology invited a scientist working with the commercial shellfish industry to participate on the external advisory committee during the permit development process. To make these committees effective working groups, Ecology typically limits their size. Therefore, not all industries potentially affected by the permit were represented on the advisory committee, but everybody had their chance to provide input to the permit during the public comment period.

Comment: *It is important to ensure the clarity of this permit addressing <u>nonnative invasive species</u> only. This wording should be clear throughout the entire document, from the title throughout the body of the paper, with nonnative included in every reference .(#8)*

Comment: *Ensure the permit is limited to treatment of only non-native invasive aquatic species. It is important that non-native species that are beneficial for Puget Sound ecological functions are not eradicated using this permit to improve industry profitability. A current example is Japanese eelgrass that is targeted for eradication by the shellfish industry, but is beneficial to Puget Sound fish species according to WDFW. This is an issue that agencies should carefully coordinate with the State Noxious Weed Board. (#9)*

> **Response:** The permit is clear that it covers management activities for **only** nonnative invasive aquatic animals and **only** nonnative invasive marine algae. The permit further defines what it means by nonnative and invasive in Appendix A - the glossary. In earlier drafts of this permit, reviewers found using the words nonnative and invasive before every reference to an animal or alga redundant.
>
> The intent of this permit is not to improve the profitability of any business or industry in Washington, but to eradicate or contain the spread of nonnative invasive aquatic animals or algae that may or may not affect a particular business or industry.
>
> Note: The State Noxious Weed Control Board does not regulate invasive animals or algae. It lists only nonnative, invasive, problematic vascular plants. This permit does not cover treatment of vascular plants like Japanese eelgrass.

Comment: *It is my opinion that this draft permit and the DEIS on which to some extent it is based, is a permit for unleashing more poisons into marine waters, for too long a period of time, without an adequate understanding of what the impact will be to the target species, to non-targeted species, to marine life in general and to public health. And there appears to be inadequate administrative oversight during the life of the permit. (#2)*

Comment: *Please, Please, Please, let's all be reasonable. Our earth, and our lives are in great danger because of our (human) disrespect to all life forms; that of marine wildlife, land wildlife, the entire ecosystem of the planet, and our own lives. I can't even imagine anyone, with all the information that's available, could possibly test chemicals in our waters. Where is the heart? I fear we've turned into robots who have no connection to the natural world and are stuck in a black and white paper box. May humanity find our way back. (#5)*

Comment: *Specifically, this permit should not be used to increase the amount of chemicals in our waters to treat invasive species such as tunicates that increase with the expansion of aquaculture. Willapa Bay is already an example of an ecosystem that has been changed into a "production estuary" vs a conservancy estuary due to the use of chemicals by the shellfish industry to control burrowing shrimp and spartina. Native species in Willapa Bay and Grays Harbor have been significantly reduced by the long-term application of chemicals and we do not want to see that happen in Puget Sound. (#9)*

Comment: *The Sierra Club interest is on salmon recovery and the other recovery efforts that are going on. We are concerned that any amount of poisons in the water environment are contrary to salmon recovery. And, even though I know salmon recovery has been going on for years, obviously it's not working terribly well. So what we've been doing, we need to do better. And, if introducing more poisons in the water, we don't consider that an improvement. We see it as going backwards.(#9)*

Comment: *Are you SERIOUS? I cannot believe that the ECOLOGY department would allow this, and I am totally appalled. WHO is the "Ecology Department"? Who is pushing the pesticide program? Isn't the water polluted enough? We are called to be good stewards of God's Creation.....what are you called to be? (#12)*

Comment: *In view of the numerous questions about this proposed action, it seems that the wiser course is to determine more definitively the possible unintended consequences of this proposal. It smacks of throwing out the baby with the bath water. Until more is known about the impact of this action on desirable, native species, we write in opposition to this action. (#13)*

> **Response:** The permit regulates chemical treatments performed by state agencies to manage the invasion of invasive, nonnative aquatic species. Some of these organisms have the potential to cause hundreds of millions of dollars in economic damage to infrastructure and untold damage to altered ecosystems and natural areas through a successful invasion of Washington waters. There are few effective non-chemical controls for many aquatic species and even rigorous prevention activities often fail. Ecology and its sister agencies continually wrestle with the impacts of not taking action versus allowing some mitigated chemical use or other management activity to occur. Ecology does not take its role as a regulatory agency overseeing chemical application to waters lightly. Ecology agrees that it is important to ensure that using chemicals does not cause more damage to the environment than taking no action and thereby allowing the establishment of a nonnative species. This permit took Ecology several years to develop and required the development of a non-project DEIS. Writing and researching the information in the DEIS, along with advice from an external advisory committee, helped Ecology select appropriate chemicals and mitigations for each chemical.

Comment: *DOE requires risk assessments be done only on the active ingredient. Although this may be consistent with EPA requirements, the State can raise the standard, and there is no justification not to do so and there are plenty of reasons to raise the standard. It is well known that the active ingredient is only a part of the commercial product used, and frequently surfactants are added to make that product effective. Surfactants require no EPA approval. By U.S. law, only active ingredients (AIs) are reported. In addition to active ingredients, pesticide products may contain one or more "inert" ingredients. Many "inert" ingredients in current use have known adverse human and environmental effects. Frequently as in the case of glyphosate, one chemical product is mixed with another chemical product as in the case of*

Aquaneat and Polaris. Currently risk assessments do not require testing the combination of either the active ingredients much less the commercial products with the surfactants. Imazapyr for instance is 27% AI, (73% unknown) and glyphosate 53% AI (47% unknown).

Since ultimately we taxpayers pay for these assessments, unless they are done correctly, what is the point—it's just a waste of our money. More importantly, it gives a sense of false security to what the actual impact both short term and long term will be. The commercial product, with the surfactant and the intended mixture is what needs to be tested. Its common sense. Not having adequate budget to do appropriate testing is an inappropriate, unacceptable excuse. (#2)

Response: The EPA regulates the sale, distribution, and use of pesticides in the U.S. under the statutory framework of the *Federal Insecticide, Fungicide, and Rodenticide Act* of 1979, to ensure that when used in conformance with the label, pesticides will not pose unreasonable risks to human health and the environment. All new pesticides must undergo a registration procedure under FIFRA during which EPA assesses a variety of potential human health and environmental effects associated with use of the product. Under FIFRA, EPA is required to consider the effects of pesticides on the environment by determining, among other things, whether a pesticide "will perform its intended function without unreasonable adverse effects on the environment," and "whether when used in accordance with widespread and commonly recognized practice [the pesticide] will not generally cause unreasonable adverse effects on the environment." 7 U.S.C. 136a(c)(5). EPA also considers data from field tests where the commercial product is used as do Ecology's risk assessments when these data are available. The commercial product includes the active ingredient along with inert ingredients.

Chemical companies consider inert ingredients to be proprietary information and they do not generally release that information to the public (although the EPA and WSDA know what these ingredients are). EPA is currently considering making inert ingredients public. Ecology agrees with the commenter and supports this effort by EPA.

Applicators do not use **s**urfactants for animal control efforts. They use surfactants to treat emergent vascular plants. This permit does not cover vascular plant chemical treatment. However, to address your concern, the Washington Department of Agriculture (WSDA) requires aquatic toxicity testing of any surfactants allowed for use in aquatic situations and only approves surfactants that meet certain criteria. In its aquatic plant management permits, Ecology limits all adjuvants to those that meet WSDA criteria for aquatic application.

Comment: *We do understand invasive species in lakes and contained water systems as a necessity in certain things, but what we're concerned about mostly is marine waters and a fluid environment. And, we're also concerned that any industry – we need to look at not just their*

profit but the effect on all native species and where this is going. We're particularly concerned because we have a document called the integrated pest management document plan for bivalves in Washington and Oregon. In that meeting that I attended they talked quite a bit about using pesticides to make their goals of more productivity for the shellfish and in that discussion they talked about the burrowing shrimp, the crabs, especially Japanese eel grass and some other things that certainly heightened our alert status in all this. And, we do not want to see the Department of Ecology to be instituting plans where the intention is to deal with invasive species that are doing environmental harm, and it turns out that we are using these to increase the profitability of an industry.(#9)

> **Response:** Sometimes chemical management may be the only effective way to remove an invasive species from the environment. However, the author of this permit is not familiar with the industry plan that you reference. Ecology regulates burrowing shrimp control using carbaryl through the issuance of an individual permit to the Willapa Bay/Grays Harbor Oyster Growers Association. Some oyster growers also treat invasive *Spartina* under the Aquatic Noxious Weed NPDES Permit. Ecology did not write the permit for or give special consideration to any industry when developing this permit. Ecology limits coverage under this permit to Washington state agencies only.

Comment: *Individuals applying any chemicals/pesticides under this permit should be permitted, insured, and bonded in order to ensure proper application and means for recovery of damages from accidental spills or inappropriate use. (#8)*

Comment: *Will private applicators be required to have state certification? (#9)*

> **Response:** State law requires anybody applying aquatic pesticides to obtain a license (with an aquatic endorsement) from the WSDA (the agency that oversees pesticide licensing). Commercial applicators must submit a Commercial Applicator Financial Responsibility Insurance Certificate or Surety Bond form completed by their insurance or bonding agent to the WSDA.

Comment: *Is there a specific formula at which a nonnative invasive species needs to be treated? Whether size of habitat covered; length of time other means are attempted; specific economic impact; etc. could be some means of measuring at what point these chemicals/pesticides become necessary in the integrated process? (#8)*

> **Response:** There is no specific formula that triggers treatment with chemicals. State agencies will make that determination on a site-specific and species-specific basis. Generally, infestations covering smaller areas are more feasible to treat, particularly in the marine environment. There is discussion about appropriateness of various management methods in the DEIS.

Comment: *Notice for new chemicals being added should include all who commented on the original permit. (#9)*

> **Response:** Any new chemical added to this permit would require a major modification to the permit and would trigger a public process. Ecology typically notifies interested parties via email address lists as well as posting to listservs.

Comment: *Given the potential risk to the environment, a permit for five years seems long. Perhaps consider shortening the permit to 2 years with options to renew, which would include a Public Notice. (#9)*

> **Response:** Ecology typically issues general NPDES permits on a five-year permit cycle. Ecology developed this permit over several years so having a two-year permit cycle is not practical.

Comment: *This process is flawed! THE PERMITS AND ENFORCEMENT FOR PESTICIDE APPLICATIONS ARE JUST LIKE THE OIL DRILLING PERMITS,CORRUPT! Spartina and shrimp control with chemicals go hand in hand! The people in charge of permits should NOT be in charge of compliance/enforcement and/or inspections.(look what happened in the gulf). Between accidental oil spills and deliberate polluting by other corporate entities, marine life doesn't have a chance! After researching gray whale migrations following the recent wave of apparent starvation deaths, it became clear to this whale watcher what is probably happening. Since the beginning of time, these massive creatures migrated along our coast feeding in and out of estuaries on mud and ghost shrimp. Today however, a powerful and greedy Pacific Coast Shellfish Growers Association somehow acquired a free pass (permits) since 1964 to chemically eradicate shrimp in Willapa Bay and Grays Harbor, WA. The shrimp populations have been decimated to near extinction! (ask NOAA). Take two large estuaries out of the equation and, well, you're getting the pictures!(DEAD WHALES) Here's the kicker; The WA state Department of Ecology is still giving out permits to aerial spray carbaryl and the permitting of other chemicals for more shrimp control! This makes no sense what so ever!*

Again, the people in charge of permits should NEVER be in charge of compliance/enforcement and/or inspections! (#10)

> **Response:** Comment noted. The EPA delegated the authority to Ecology to issue NPDES permits, inspect the permitted facilities, and enforce the conditions of the permits. EPA does retain oversight authority for the program and may object to permits, inspect facilities, and enforce permit conditions. This is the underlying principle for the NPDES program.

Comment: *As a longtime StreamTeam/beach restoration volunteer who also recreationally grows oysters for water quality purposes, I have major concerns about the proposed permit to apply multiple types of chemicals in the South Puget Sound area.*

We have totally inadequate flushing/exchange of water in this area and the idea of applying poisonous chemical pollutants does not make sense to me. I am very concerned about side effects which could reduce the diversity of species present in the water as a result of by-kill.

In addition, cordoning off waterways or beaches for a minimum of 24 hours after application takes away the ability of the public to enjoy the Sound and impinges on the rights of waterfront property owners.

Finally, this has the potential of becoming a fiscal disaster for the county due to the right of property owners to demand a lower value assessment as a result of this action furthering the industrialization of the Sound. Prime view/recreation property will be fundamentally changed to the detriment of many. (#10)

> **Response:** Nonnative invasive species often degrade aquatic systems to such a degree that is desirable to eradicate or aggressively manage their populations to protect and maintain the beneficial uses of the affected water bodies. The proposed permit will help state agencies limit the spread and reduce the impacts of aquatic nonnative invasive species by allowing for their management with chemical control technologies. The permit also allows rapid response for early invasions. Ecology does not envision state agencies as using this permit for routine or repeated maintenance activities. As such, activities conducted under the permit should not impinge on property values or fundamentally change any view or recreational property. The permit also limits treatments to weekdays, which minimizes restrictions to the public.

Section 2. Comments on Specific Sections of the Permit

S1. Permit Coverage

Comment: *Minimize the number of approval agencies or groups from which a non-native invasive aquatic species is chosen for treatment. Too many groups increases the potential for a species being listed for treatment which in fact is not invasive or can be easily controlled by means other than chemicals or pesticides. Consider using only USFWS and/or WDFW. If the latter, consider only treatment of those species listed as "prohibited*." (#9)

> **Response:** Ecology supports using the lists included in the permit. These lists are of nonnative, invasive species that have undergone review by state and federal agencies and other interested parties before their inclusion on the lists.

Comment: *Page 6, Item B: the heading "May Not Need Coverage" seems to contradict the phrase "does not require coverage" in the sentence following. (#7)*

Response: Ecology changed the language in the sentence following the heading so it is consistent with the heading language.

Comment: *Why is treatment out to twelve miles being considered? It would seem that distance presents containment problems which Oregon and British Columbia may have concerns with. (#9)*

Response: A state's territorial limit extends up to 12 nautical miles. If this overlaps with another territory, the border is taken as the median point between the states' baselines, unless the states agree otherwise. Ecology anticipates that the state agency considering any treatment that would affect another state or country would coordinate closely with that entity.

S3. Application for Coverage

Comment: *In the past poisons have been used that have almost destroyed small shellfish companies. This was done through bad science and lies. We feel that the permit should not be spread out to all agencies or individuals. The department of Ecology should be the sole agency responsible for all aspects of this permit including charging for it. In the past so many people have been able to do what they want that no one was held responsible. Applying poisons to our marine waters is a very serious situation. With what has gone on in the Gulf of Mexico we believe more consideration must be given to the small farms or we will be just like the ones going out of business in the gulf. (#6)*

Response: Ecology is responsible for developing the permit conditions and mitigations and selecting the list of chemicals allowed for use. Ecology does not typically do on-the-ground control work but regulates chemical applications through its permitting process. Ecology limits coverage under the permit to state agencies only. These state agencies may contract with others for the actual on-the-ground work, but any contractors must carry out treatment in a manner that complies with all the permit requirements.

Comment: *I think if there are any private entities going to be applying to use this permit are allowed to use it under special needs, especially if it has anything to do with aquaculture, that independent shellfish growers are invited to attend and comment and address the issues of the other people from the industry. I also would ask that nobody else be used to apply the chemicals from this particular permit. That it be under the direct control of Washington State in some form of some agency. No private companies, no independent companies. And, that science be used to the best of the ability that we have. Peer reviews from other countries be used. And, that we make sure that this permit looks at everything – looks at the businesses, addresses issues of everything that's going to surround anytime that we apply pesticides or herbicides into the waters. I believe in Washington State, pesticides covers both of those. So, I think the Department of Ecology should keep it under their control and not issue it out to the Department of Fish &*

Wildlife. I think that they can give them guidance on how to use it. I think that the WSDA, due to the Spartina eradication program and some of the missteps taken there should not have the ability to use the permit or to use it as a blanket permit in any way, shape or form.

I believe in the Department of Ecology. I think they do a great job. I think that this permit is a step in preventing some things. I think that the marine waters are a lot different than the fresh waters in that we should address those issues. (Commenter #6)

> **Response:** Ecology does not typically conduct hands-on activities to manage invasive species. That is the purview of other agencies. Ecology will only issue coverage to other Washington state agencies that apply for coverage. Activities conducted under this permit will be under their control. Ecology is not aware of any industry interested in operating under this permit.

S3. Discharge Limits

Comment: *Page 8, "Short Term Modification of Water Quality Standards" - Permit holders should not be allowed to exceed Water Quality Standards for any period in Puget Sound. With currents it is too difficult to keep chemicals applied localized. (#9)*

> **Response:** The water quality standards allow for short-term exceedances for a specific water body on a short-term basis when necessary to accommodate essential activities, respond to emergencies, or to otherwise protect the public interest, even though such activities may result in a temporary reduction of water quality conditions (see WAC 173-201A-410 short-term modifications). The permit includes mitigations for each chemical that will help localize its impact.

Comment: *Discharge limits should be as tightly controlled as possible. S3A seems to indicate excessive amounts may be applied if only for short periods. The nature of currents and tides in the waters of Puget Sound rapidly spreads an excessive application to areas not intended. (#8)*

> **Response:** Permittees are limited to label amounts or the lowest effective concentration for the target species. Permittees will need to acquire special labels for those chemicals in this permit that are not labeled for invasive species management. During the labeling process, EPA and the WSDA will provide guidance to help set appropriate label concentrations.

Comment: *Page 8 Section 3A1a, last line: The definition of "short duration application" ought to be added to the glossary. (#7)*

> **Response:** Ecology added a definition to the glossary.

Comment: *Page 8 Section 3A1b, last line: The term "limited to hours or days" is confusing to me. Does it mean "no more than one day of exceedance post-application?" Does it mean "duration of the application?" Or something else? I suggest you define this in the glossary. (#7)*

> **Response:** The short-term modification section of Washington's Water Quality Standards for Surface Waters of the State of Washington (WAC 173-201A-410) uses the term "limited to hours or days". The Water Quality Standards do not provide further definition or guidance of what this term means. However, for the purposes of this permit only, Ecology will provide a definition in the glossary.

Comment: *Page 8 Section 3A2: I suggest adding the term "vicinity" to the glossary. (#7)*

> **Response:** Ecology added a definition of vicinity to the glossary.

Comment: *Page 8, A3. "The applications authorized by this permit must not cause lasting or long-term harm to the environment." Who decides whether long lasting harm has occurred and how? This should be explained in detail with responsibility assigned.*

> **Response:** Ecology has regional inspectors that inspect a subset of pesticide applications each year for compliance with our pesticide permits. In addition, the WSDA ensures compliance of pesticide applications with the EPA label. The permit also requires the Permittee to report adverse impacts due to any treatment to Ecology so that it can take any appropriate action including modifying the permit, if necessary.

Comment: *Page 8 Section 3B: Is it reasonable to assume that a proposed action is extremely unlikely to result in the impairment of a currently-unimpaired waterway? If not, I suggest you add some language to cover this possibility. (#7)*

> **Response:** Ecology thinks that it is unlikely that a proposed action will result in impairment of a currently unimpaired water body.

S4. Restrictions on the Application of Products

Comment: *I also will be submitting some paperwork and studies done on some of the chemicals that are on the list that can be used here, and their names I think should be added to the list - their product names, what they go by, such as Polaris or Aquaneat or anything like that, instead of just what the chemical name is. That way, people can understand what it is and possibly can go read a label at a grocery store and find out what it is and where it should be used. (#6)*

> **Response:** Ecology only specifies active ingredients in the permit. Ecology does not want to give the impression that it endorses any particular company or trade name nor

does it want to exclude any company or trade name by omission. By law, aquatic pesticides are restricted use chemicals and cannot be purchased in grocery or hardware stores. Only state-licensed applicators with an aquatic endorsement on their license may purchase these products. There are some chemicals listed in the permit that have other uses, such as table salt, but when used as a pesticide, they need a label and only a licensed applicator may apply them for pesticide purposes. Of course, anybody may purchase table salt for seasoning or preserving food.

Page 9, A2 "Temporary and limited impacts on non-target organisms are acceptable only to the extent needed to control the targeted organisms." Same as above. (#9)

Response: As the regulating agency, Ecology has the responsibility to determine if chemical treatments cause long-term harm to the environment and to non-target organisms. This is why Ecology requires reporting and monitoring from its Permittees. The permit requires the Permittee to report adverse impacts due to any treatment to Ecology so that it can take any appropriate action including modifying the permit, if necessary.

Comment: *Page 10, Experimental Use Permits, Requirements should be stringent for experimental use permits to insure that our native species are protected. Industry should not be allowed to use experimental permits to eradicate invasive species when other methods are effective. (#9)*

Response: EPA and WSDA regulate Experimental Use Permits and these agencies develop the use conditions and requirements. However, entities operating under federal Experiment Use Permits must also obtain coverage under this permit and must thereby comply with all permitting requirements of this NPDES permit.

Comment: *Our native species should not be sacrificed to improve industry profitability. (#9)*

Response: Ecology is not targeting any industry under this permit, although some of the activities may ultimately protect some industries from aquatic invasive species (e.g., hydroelectric power generation, water supply, shellfish). Ecology only issues permit coverage to other state agencies under this permit and not directly to any industry.

Comment: *Experimental Use under this permit should leave no room for expansion. A strict limit on acreage should be set for bodies of water in order to avoid a .9 acre limit being used in multiple locations or an excessive number of acres through an EPA certification to be used (e.g., the recent Ghost Shrimp plan has a total of 80 acres being used under the "experimental" classification). (#8)*

Response: State Experimental Use Permits for aquatic application are limited to one acre. Federal Experimental Use Permits may include more acreage and as such, entities

operating under a Federal Experimental Use Permit require coverage under this permit. Ecology relies on the EPA to set appropriate limits for its Experimental Use Permits.

Comment: *Section S4A.4: Please delete the language starting with "…. Obtaining." (#4)*

Response: Ecology made the suggested change in the permit.

Comment: *Please create a new S4A.5 that reads "The Permittee must coordinate with WSDA to ensure pesticide label approval prior to beginning any discharge activities. Authorization of pesticide discharge under this permit does not indicate registration approval under FIFRA. " (#4)*

Response: Ecology created a new S4A.5. and added the suggested language.

Comment: *"Terms and Conditions" seem to mean the same as the "specific restrictions" of Section 4D, pages 11-16 (made up of "timing windows," "restrictions/advisories," and "treatment limitations") combined with the adaptive management plan of Section 5, and the "general conditions" in sections G1, G4D, G5D, and G7. Do I understand this correctly? If so, I recommend calling all these things "terms and conditions" and putting them in one section. (#7)*

Response: "Terms and conditions" is an umbrella phrase that includes all parts of the permit that regulate the activities of the Permittee. Ecology believes that it would be more confusing to combine them into one section than to keep them separate. In addition, the General Conditions are a set of conditions common to all NPDES permits and are not typically subject to change by individual permit writers. They are set out in a separate section of the permit.

Comment: *The "monitoring requirements" in Sections 7, 9B, and 9E1 do not seem to be tied to the "terms and conditions" mentioned above. Most of the "Treatment Limitations" (all except copper and calcium hydroxide in fresh water) do not specify the "lowest effective concentration" or other numeric threshold. If the lowest effective concentrations, temperatures, or acidity are known, or can be set based on site conditions, the permit ought to specify this so all parties will know from the monitoring data if the action is in compliance. (#7)*

Response: The label may specify the effective concentration on those chemicals labeled for invasive species management. For other chemicals, the project proponent will likely determine the lowest effective concentration through laboratory or field-testing or through literature search of other field or laboratory tests.

Comment: *Pages 12-16, Table 1, Column 2: I suggest you provide a legal definition of "critical habitat areas" if there is one. (#7)*

Response: The definition of critical habitat areas is at the discretion of WDFW. The WDFW timing tables developed for this permit and the Aquatic Plant and Algae

Management Permit (effective March 18, 2011) provide guidance to Permittees about critical and sensitive habitats (priority species and habitats) in various water bodies throughout Washington. http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/aquatic_plants/permitdocs/rectreatwind090110.pdf.

Critical habitat is also a term defined and used in the Endangered Species Act. It is a specific geographic area that contains features essential for the conservation of a threatened or endangered species that may require special management and protection. Critical habitat may include an area needed for a species recovery even though the species does not currently occupy the area. When a federal fish and wildlife service designates an area as critical habitat, it publishes the final boundaries of the area in the *Federal Register*.

Comment: *Pages 12-13, Table 1, Column 4: Is there a standard definition of "limit water exchange behind impermeable barriers?" (#7)*

Response: Ecology knows of no standard definition. However, Ecology intends that the installation of a barrier will isolate treated water from untreated water and prevent or reduce mixing of the treated water with the untreated water.

Comment: *Page 14, "Rotenone," second bullet and Page 16, "Chelated Copper," last bullet: Meeting the requirement that "listed fish species must not be present" should require more support than simply absence of surveys for the species in the action area. If the area has not been surveyed for the species, I recommend you add language requiring the applicant to consider (1) whether listed fish from a known population could get to the action area, and (2) whether the action area provides suitable habitat. (#7)*

Response: Ecology believes that the statement that "listed species must not be present" is inclusive and it is up to the Permittee to determine whether the species is present or not.

Comment: *Page 15, "Antimycin-A," first bullet: You might add the term "shallow water bodies" to your glossary. (#7)*

Response: Ecology added a definition of shallow water in section of the table that refers specifically to the use of Antimycin-A.

S5. Planning Requirements

Comment: *In the draft, it states that there should be an alternative plan from the chemicals originally being applied after18 months. We believe that if the NPDES is to be used that there should already be a backup plan in place before the use of the permit. That way an extreme response if needed could be used immediately such as mussels clogging turbine cooling pipes at a dam. We foresee nothing at this time that would be so horrific to our industry that such a chemical response in that fashion would be needed. Due to this, we feel that all tests for chemicals that are on the list be done in labs under controlled conditions not in the marine waters where the result could be harmful. Testing in a lab cannot mimic the marine waters and everything that survives in it or contributes to its health. Also endangered species that cannot be tested must not be declared safe by something that we say is close to them because if we cannot test the species, then how do we know that the tests are being done on something comparable. We do not and this is unacceptable. (#6)*

> **Response:** The permit requires the Permittee to develop or adopt an Ecology-approved adaptive management plan that incorporates integrated pest management principles for organisms managed under the permit. Permittees have 18 months after starting initial treatment to develop this plan. While we agree that it would be desirable to have plans already in place, the permit covers all potential nonnative invasive marine and freshwater animals and nonnative invasive marine algae that could invade Washington waters. There are hundreds of potential invaders and it is simply not possible to develop plans for each eventuality or even know which species may become invasive. Even if agencies could develop such plans, they would not be site-specific because an invasion could occur in any marine or freshwater in Washington. For these reasons, Ecology allowed an 18-month window for plan development. Ecology evaluated each chemical listed in the permit in its DEIS.

Comment: *Ecology targeting specific nonnative invasive species with an integrated plan for each may better control how chemicals/pesticides are used, rather than relying on a permittee(s) to develop plans (S5A). This would minimize the risk of misapplication by unifying the plans. (#8)*

> **Response:** Ecology does not have the resources to prepare these plans itself. However, Ecology will review and provide input and must approve each final plan. Permittees are other state agencies.

Comment: *Page 17, Plan submittal should be required sooner than 18 months. If alternatives are not in place as soon as possible, allowing for such a long period of time may result in excessive use of chemical/pesticide application. (#9)*

> **Comment:** An integrated pest management plan does not mean the state agency will stop chemical use. It means that the state agency will consider all appropriate and applicable

methods for management of the invasive organism and weigh up many factors before choosing one or a combination of methods to deal with the invasive species. In actuality, state agencies go through this process initially before starting management activities, but they may not have the time to develop a formal planning document until later. That is why Ecology allows an 18-month window for this more formal process and written planning document.

Comment: *Page 17, Section 5B: I am concerned that no adaptive management plan is required until a year and a half after treatment has started. It seems the applicant has little incentive to modify the treatment during this period, even if problems arise. (#7)*

Response: Ecology allows this period for the Permittee (Permittees are state agencies) to develop their formal management plan. Plan development requires literature review, meeting with stakeholders and interested parties, consultation with scientists and invasive species managers in other states, plan write-up, and formal agency review. This process takes time. At the same time, information may be coming in from field data and possibly laboratory trials.

Comment: *Page 17, Sections 5B and 5C: Does the "plan" mentioned in Section 5B mean the initial plan in Section 5C or the revised plan in Section 5C? What happens if Ecology finds substantial defects in the revised plan? (#7)*

Response: The plan in S5.B. means the initial plan submitted to Ecology. Ecology will review the initial plan and, if this plan requires revision, work collaboratively with the Permittee to develop a final plan acceptable to all parties.

S6. Posting and Notification Requirements

Comment: *Notice should be sent to the owners address at the county assessor's office. This would ensure vacation property owners are notified.(#8)*

Response: It has always been difficult to ensure that everybody that needs notification receives adequate notice. Applicators that rely on the county assessor's office to obtain addresses (for notification under Ecology's other aquatic permits) report that this information is not always accurate. Renters report that property owners often do not pass treatment notification on to them. The Permittee will post all affected property prior to any treatment occurring so nobody will be blind-sided. Ecology continues to stand by the language in its permit for notification.

Comment: *Before the use of the NPDES permit in any way, to include experimental testing. All shellfish farms with in a four mile radius of a test site or application must agree that it is to be*

done. If one registered shellfish farm says no there must be no application within a four mile radius of that farm to prevent chemical drift and forced closure due to federal guidelines set forth in the NSSP that states once chemicals have been detected on tidal lands those tide flats must be closed for one year. If all shellfish farms that fall into the 4 mile radius from an application site agree that chemicals can be used, the state must supply the funds for a independent laboratory of the shellfish farms choice to test their tidal flats for the chemicals being used. If chemicals are detected on the farms tidal flats there must be in place a fund for compensation. If all the science used up to that point is correct there should be no problem. Also if all shellfish farms within that four mile radius agree to the use of chemicals, then land owners that have land that abuts the waters within that four mile radius must be polled and a simple majority rules. With all of this in place, we are assured of minimal damage to all. (#6)

> **Response**: Businesses and residences within one-quarter mile in each direction along the shoreline or across the water from the proposed treatment areas receive notification 7-21 days prior to treatment, unless there is an emergency treatment. Ecology reviewed these notification requirements with its external advisory committee including a representative from the shellfish industry. Nobody expressed any concern at that time. Bear in mind that the chemicals allowed for use in marine waters are very restrictive and include chemicals common in the marine environment such as salt. Ecology reviewed the Action Levels, Tolerances and Guidance Levels for Poisonous or Deleterious Substances in Seafood from the National Sanitation Shellfish Program (NSPP), which did not list any of the chemicals allowed for use in marine waters under this permit.

S7. Monitoring Requirements

Comment: *I did not find any requirement for the applicant or contractor to monitor the direct effect of the toxicant on the target species. My personal opinion is that the State of Washington, particularly Ecology and Washington Department of Fisheries and Wildlife, should commit to monitoring the effect of permitted actions on the target species, to a level that will allow a fair comparison between the positive and negative effects of the actions. Let's get the most practical information out of this program as we can! (#7)*

> **Response:** That is incorrect. S7.A.2 requires the Permittee to conduct treatment effectiveness monitoring for the target organism.

Comment: *Page 20, Section 7A1 and 7A3: Must the applicant submit the monitoring plan on February 1 before the first treatment, or after it? I suggest that you spell out that Ecology must approve the monitoring plan before treatment starts, if that's what is meant. (#7)*

> **Response:** The Permittee submits the monitoring plan to Ecology prior to each treatment season. The Permittee's annual monitoring plan must propose specific monitoring

locations and parameters to Ecology. In consultation with the Permittee, Ecology reviews and approves the annual monitoring plan. Permittees submit the results of the previous year's monitoring to Ecology by February 1 of each year.

Comment: *Page 22, Table 3, Copper, first bullet: I did not find any requirement for monitoring copper post-treatment. If post-treatment monitoring is feasible and meaningful, I'd suggest requiring it. (#7)*

Response: Ecology added a post-copper monitoring requirement to the permit.

Comment: *Page 23, Table 4: I assume that the sole purpose of pre-treatment monitoring is to calculate the correct dose. Is this so? An explanation would clear this up for the general reader. (#7)*

Response: These monitoring requirements come from an individual permit issued to WDFW for rotenone treatment for fish management. Alkalinity and organic demand is a monitoring requirement when using potassium permanganate to neutralize the rotenone. These parameters help the Permittee calculate the correct dose of potassium permanganate. Explanations of permit language belong in the Fact Sheet and the "Response to Comments" becomes an appendix to the Fact Sheet.

Comment: *Page 23, Table 5, rows 1 and 2: I assume the sole purpose of post-treatment monitoring of pH and temperature is to see whether your dose became more toxic than expected. Am I correct? Again, you might clarify this for the general reader. (#7)*

Response: No, these parameters relate to the persistence of rotenone in the water rather than the direct toxicity of the chemical. Generally, rotenone degrades more quickly in water with a higher pH and higher temperatures.

S8. Analytical Procedures

Comment: *Page 24, Section 8A and Page 25, Section 8C: Do the protocols include thresholds of concern? If they do, you might include these in the monitoring requirements, so it's clear what the data mean. (#7)*

Response: Ecology did not understand this comment. These sections refer to the laboratory or field analytical methodologies allowed for use under this permit.

General Conditions

Comment: *Page 32, Section G4D: Does the language "endangers human health or the environment, or significantly contributes to water quality standards violations" represent the language of any particular statute? If so, it would be helpful to cite it here. (#7)*

> **Response:** The General Permit Conditions are standard language used in all Ecology NPDES general permits and not typically subject to revision by permit writers. Ecology bases these general conditions on state and federal laws and regulations (see WAC 173-226).

Comment: *Page 32 Section G5D: It might be good to define "cumulative effects" to make it clear whether this covers only permitted actions, or also considers exempted actions. It might also be good to define "unacceptable," making it clear whether this is a planning term or a statutory determination. (#7)*

> **Response:** The General Permit Conditions are standard language used in all Ecology NPDES general permits and not typically subject to revision by permit writers. Ecology bases these general conditions on state and federal laws and regulations (see WAC 173-226).

Comment: *I am greatly concerned about the Draft EIS and what information is available to base a safe decision on. Comments such as "limited in part by lack of information"; "Ecology has not been able to conduct timely environmental review of new commercially available herbicide active ingredients"; and "Ecology has tentatively decided to issue this DEIS and the Aquatic Invasive Species Permit without having independently conducted state risk assessments for some of the chemicals or products listed for use" are deeply troubling. Puget Sound is a critical body of water to many species and enjoyed by the general public. If Ecology cannot provide the scientific proof of the efficacy or safety of a chemical/pesticide it should consider requiring peer-reviewed studies before putting it at risk.(#8)*

> **Response:** Ecology is being upfront with the problems faced with lack of resources for independent state risk assessments. Even in good economic times, it is difficult for agencies to acquire funding or staff for these activities. There is also a very real and imminent threat of invasion from organisms like the zebra mussel that have the potential to cause hundreds of millions of dollars in economic damage to the state. The permit is proactive and prepares Washington to react immediately the state agencies detect these species. Ecology does not want the lack of resources to limit people's ability to control these organisms when action becomes imperative. Therefore, Ecology believes that it is better to have a permit available for these activities, even in the absence of state risk assessments for all the chemicals listed in the permit.

Even though Ecology was not able to conduct independent risk assessments of every chemical, it does not mean that the agency did not consider and evaluate potential impacts and toxicity of these chemicals before allowing for their use under this permit. Ecology consulted with environmental and human health toxicologists during permit development. Because of the consultation, Ecology modified the list of chemicals initially proposed because of toxicity issues raised by these scientists. Toxicologists and scientists find the current chemical list acceptable with appropriate mitigation practices. Ecology also wrote a DEIS to fulfill the State Environmental Policy Act requirements of issuing this permit.

List of Commenters and Commenter Numbers

Commenter #1 - Wendy Brown - Washington State Invasive Species Council

Commenter #2 - Fritzi Cohen - Interested Party

Commenter # 3 - Cynthia Bova - Interested Party

Commenter #4 - Kelly McLain - Washington State Department of Agriculture

Commenter #5 - Sutra Restaurant & Sutra Yoga Studio - Interested Party

Commenter #6 - Keith Staurum - The Independent Shellfish Growers of Washington State

Commenter #7 - Joseph M. Hiss - Interested Party

Commenter #8 - Jules Michel - Interested Party

Commenter #9 - Laura Hendricks - Sierra Club (the Cascade Chapter)

Commenter #10 - Steve Bova - Interested Party

Commenter #11 - Paul Meury - Recreational Oyster Grower

Commenter #12 - The Reverend Sylvia Haase - Interested Party

Commenter #13 - Sue Minahan & Donna Ewing - Interested Parties

Commenter #14 – Judy Henderson – Interested Party