

From: [Laura Hendricks](#)
To: [Zentner, Greg \(ECY\)](#); [Rockett, Derek \(ECY\)](#); [Lubliner, Nathan \(ECY\)](#)
Subject: Sierra Club-Comments on Spray Proposals Imazamox and Imidicloprid
Date: Friday, February 14, 2014 2:09:45 PM
Attachments: [Sierra Club-Ecology Comments-Imazamox, Imidicloprid-Feb 14 2014.doc](#)

Dear Mr.Zentner, Mr. Rockett and Mr. Lubliner
Please accept the attached comments from the Sierra Club regarding the Imazamox and Imidicloprid spray proposals.

If you have any questions, please feel free to contact me.

Sincerely,
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VIA MAIL (Greg.Zentner@ecy.wa.gov,
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February 14, 2014

Mr. Gregory Zentner
Mr. Derek Rockett
Mr. Nathan Lubliner
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Re: Comments Regarding the Proposed Issuance of an NPDES permit for the Application of the Herbicide Imazamox to Manage *Zostera japonica* Eelgrass on Commercial Shellfish Beds and Scoping Document Comments for the Application of the Pesticide Imidicloprid to Manage Burrowing Shrimp in Washington State Waters

Dear Mr. Zentner, Mr. Rockett and Mr. Lubliner,

The Sierra Club submits the following comments in opposition to Ecology's proposed issuance of a NPDES permit for the application of the herbicide Imazamox to manage *Zostera japonica* (Japanese eelgrass) on commercial shellfish beds in Willapa Bay, Grays Harbor and Puget Sound. We have also included comments regarding the scope of the upcoming Environmental Impact Statement (EIS) for the use of Imidicloprid to manage burrowing shrimp on commercial shellfish beds in Willapa Bay, Grays Harbor and Puget Sound. The Sierra Club is the oldest and largest environmental organization in the United States and protection of our natural resources for the public good is a major goal of our organization.

First Proposed Action--Imazamox--Our Comments on Why This Pesticide Should Not Be Sprayed in Washington Waters

During our review, we analyzed numerous documents including the: 1. EIS Statement: Management of *Zostera japonica* on Commercial Clam beds in Willapa Bay, Washington, the Draft NPDES permit and the Fact Sheet for the State of Washington *Zostera japonica* management on commercial clam beds in Willapa Bay. Our members have also discussed this proposal with Ecology staff and received additional insight.

A. First Reason-The Spraying of Imazamox Will Violate a Host of County, State and Federal Eelgrass Protections and Threaten Valuable Wildlife Habitat and Species Throughout Willapa Bay, Grays Harbor and Puget Sound

County, state and federal authorities have developed an extensive regulatory framework that recognizes the ecological value of *Zostera japonica* and *Zostera marina*. The proposed NPDES will likely violate many, if not all, of the following statutes and regulations:

These plant protections include, but are not limited to, the following statutory provisions: RCW 77.115.010, 77.12.047, 77.60.060, 77.60.080, 77.65.210, 77.115.030 and 77.115.040, the Hydraulic Code Rules set forth at WAC 220-110-250, the Shoreline Management Act and its regulations set forth at WAC 173-26-221 (2) ©, the Growth Management Act and Fish and Wildlife Habitat Conservation Areas, as well as Nationwide Permit 48, Regional General Permit 48, Regional General Permit 6, issued by the Army Corps of Engineers, the Critical Area Ordinance identifying the fish and wildlife habitat conservation areas, the Pacific Coast Groundfish Fishery Management Plan identifying Habitat Areas of Particular Concern 7.3, and the WDFW Priority Habitat Puget Sound Nearshore established by WDFW in 2010.

While it appears that there is a claim that there is no “Federal Nexus,” we disagree. Just because Federal funds have not been used for an ESA listed species like green sturgeon, it does not allow Ecology or the shellfish industry to violate applicable laws.

B. Second Reason-The Spraying of Imaxamox Will Have Significant Negative Effects on the Marine Environment Beyond Killing *Zostera japonica* that Have Not Been Adequately Addressed

The shellfish industry spent considerable time in developing their “Pest Management Strategic Plan for Bivalves in Oregon and Washington” that was issued in 2010. In that document, the industry clearly considers both *Zostera japonica* (Japanese eelgrass) and native *Zostera marina* as “weeds/pests” and there is no doubt that they seek to destroy both varieties. In addition, they include most aquatic species that are an integral part of the biodiversity of a healthy marine ecosystem as pests and eradication/control are the preferred options. For confirmation of their proposed actions, visit:

<http://washington.sierraclub.org/tatoosh/Aquaculture/OR-WAbivalvePMSP.pdf>

The EIS and NPDES Permit

1. The EIS lacks credibility as it completely ignores volumes of important marine peer reviewed science and makes statements as fact that are not supported. The three major documents presented to the public were generated by a flawed process which ignored or excluded meaningful input from those other than from the applicants. The result is a flawed process that important decisions regarding the Willapa Bay, Grays Harbor and Puget Sound ecosystem should not be based on.

2. The extent of the spraying allowed is not clearly identified and it requires review of numerous supplemental documents and discussions with Ecology staff to determine that there is really no limit on the spraying locations in Willapa Bay, Grays Harbor or Puget Sound. It appears that the inclusion of Eastern Softshell clams widens the areas that are allowed to be sprayed.
3. Despite the known importance of native *Zostera* marine eelgrass and other vascular plants to the marine ecosystem, the potential damage and eradication of these species is treated as incidental collateral damage. It is well documented that *Zostera japonica* and *Zostera marina* grow in intermixed meadows where the known science documents that they naturally coexist. Imazamox is a member of the imidazolinone family and it affects vascular plants and is non-discriminatory between native, Japanese eelgrass and other vascular plants. It will kill *Zostera marina* at the same time it is killing *Zostera japonica*.
4. The EIS does not even mention the fact that one of the Puget Sound Partnership's goals is to increase eelgrass by 20%. It is obvious that this goal cannot be attained if this proposal is approved. Herring spawning medium will also be eradicated even though an increase in herring biomass is also a Puget Sound Partnership management goal. Daniel Penttila, the most respected Washington State forage fish expert, has pointed this out and the proposed eradication efforts ignore his objections.
5. Numerous scientists pointed out the benefits and habitat attributes that were well identified in the Seagrass June 2013 Ecology eelgrass seminar. Even in an email dated October 2013 to Cedar Bouta in Ecology, Dr. Douglas A. Bulthuis, Padilla Bay National Estuarine Research Reserve stated: "I am sorry to see all reference to beneficial functions of Japanese eelgrass removed from the paragraph about the June meeting on Science and Management of *Zostera japonica* since the last version of the letter that I saw." It is apparent that the EIS authors failed to document concisely both the beneficial and negative impacts on the environment. It was also notable that the opinions of Dr. Patten were not substantiated with peer reviewed research as he represents the shellfish grower's point of view as dictated by his WSU job description.
6. Even though the Washington Department of Fish and Wildlife and the Department of Natural Resources have expressed major concerns about individual and cumulative impact concerns, these were not included in the EIS. In addition to their expressed concerns about the destruction of native eelgrass they have also consistently pointed out other wildlife adverse effects including those for the probable losses of seagrass habitat for waterfowl. The EIS does not mention recent waterfowl counts of over 100,000 ducks and geese that are dependent on *Zostera japonica* as well as *Zostera marina*. In fact, the eradication of *Zostera japonica* will put additional grazing pressure on *Zostera marina*.

Two studies that document the importance of eelgrass to waterfowl are as follows:

- a. The correlation of eelgrass beds and brant use was positively identified in the 1994 peer reviewed study "Black Brant Winter and Spring-Staging Use at Two Washington Coastal Areas in Relation To Eelgrass Abundance" by Ulrich W. Wilson and James B. Atkinson. As the study states: "The negative correlations at Willapa between brant use and extent of oyster beds, and between the sizes of oyster beds and extent of eelgrass beds, emphasizes the adverse impact the oyster industry has on brant, and may explain why a 22% decline in eelgrass coincided with a disproportionate 52% decline in brant use."

b. Baldwin and Loveron point out that *Zostera japonica* had spread to Puget Sound and south to coastal bays in Oregon and likely plays a similar vital role as valuable waterfowl habitat in those areas as well (John R. Baldwin and James R. Loveron in the Marine Ecology Progress Series, Vol. 103, pp119-27 (1994).

The EIS does not address the following facts: Pacific Brant wintering grounds contain expansive mixed beds of eelgrass which can be sprayed, Pacific Brant spring staging grounds can be sprayed while staging is actually at its peak, Chum salmon preferred habitat can be sprayed, again while smolts are present in numbers, connectivity considerations around gravel bearing streams of all sizes are absent, even on public tidelands, loss of carrying capacity for green sturgeon is glossed over and *Zostera japonica* is denied as the major waterfowl forage.

7. The spraying proposal does not adequately inform the public of the probable impacts to the natural environment and the ecosystem wide consequences. Critical scientific information is left out of the EIS and unsupported data is included on behalf of the shellfish industry. One recent example is that at the February 1, 2014 South Bend Ecology workshop on this issue, the public was then told that a monitoring plan will not be required for the first 3 years and is voluntary. The public cannot be adequately informed if the rules keep changing without proper notice.

8. Seagrass researchers at the June 2013 Ecology Seagrass meeting requested that a comprehensive management plan be carefully evaluated and additional research be conducted prior to eradication efforts. This spray proposal ignores the completed and ongoing work by Mr. Escheveria, the Padilla Bay National Estuarine Research Reserve/Dr. Bulthuis and Dr. Deborah Shafer. These researchers are well known and respected in the field of seagrasses and their concerns should not be ignored.

9. The proposed spray action conflicts with the compliance of the Memorandum of Understanding on the Migratory Bird Treaty Act which is to: “promote the conservation of migratory bird populations through enhanced collaboration between EPA’s OPP and FWS on actions carried out by OPP. Migratory birds are an important component of biological diversity, and as such, conserving them and their habitats supports ecological integrity, contributes to public conservation education, and enhances the growing interest in outdoor recreation opportunities.” More information is available at: www.epa.gov/pesticides/ecosystem/migratory-birds.html.

10. Climate change is a major environmental issue that the Sierra Club has been out in the forefront for decades. Seagrasses are absolutely critical in offsetting numerous adverse effects of climate change that have been expressed by Governor Jay Insee and numerous scientists that have provided input to Ecology. This EIS does not consider climate change and the importance of a long term management plan that takes into account ecosystem changes that will affect all stakeholders.

11. Adverse effects to the environment and human health have not been adequately evaluated. This EIS does not include a cumulative impacts analysis which should have included the effects from the current spraying of Imazapyr, Glyphosate and Carbaryl in Willapa Bay and Grays Harbor at the request of the shellfish industry. Toxicity concerns

have already been expressed by the European Union and China when they decided to ban all Washington shellfish. Adding more toxins to Washington's waters is not consistent with current concerns.

12. The Acting Program Manager for Water Quality does not meet the requirement that the highest official sign the EIS and NPDES. It does not appear that the EIS and Draft NPDES permit were signed by the Director of Ecology as required by RCW 43.21A and RCW43.21.090.

The Monitoring Plan-It Should Be Noted that a Monitoring Plan was proposed during this public comment period. As of the February 1, 2014 South Bend Ecology meeting, it is now voluntary. We are still providing comments on this necessary component of any NPDES permit.

1. The proposed monitoring plan allows loss of *Zostera marina* when Imazamox is used which is against the law and in direct violation of all environmental standards. It appears that all eelgrass can be eradicated on the commercial shellfish grounds and even degraded on adjacent properties. The proposed monitoring plan also does not include monitoring affect on flora and fauna which should have been required and is actionable.
2. The shellfish industry should not be allowed to do self monitoring and enforcement as described in the EIS and NPDES documents. It is our understanding that the WDOE delegated enforcement authority to the Washington Department of Agriculture who in turn designates growers as the "subcontractors." This lack of enforcement violates the Clean Water Act and is the subject of ongoing disputes with the EPA. EPA has provided funding to Ecology to pass along for the support to WDA who do not accompany sprayers on a daily basis during the spray operations and do not insure against damage to non-target species and drift onto private lands or buffer areas.
3. The unsubstantiated destruction estimate of 20% of the *Zostera marina* meadows is not even mentioned in the EIS or the NPDES, but mentioned in the proposed monitoring plan.
4. It does not appear that spray drift has been adequately evaluated and there is no documentation on the adverse effects on adjacent non-target species. We see no mention of the effects on vertebrates and invertebrates that are a vital component of the ecosystem.
5. An adequate baseline is necessary but is lacking in the monitoring plan. We do not see any monitoring for short term or long term effects on fish or wildlife. The following is a partial list of effects that were ignored: Chum salmon prefer vegetated beds, repeated spraying effects are not addressed for *Zostera marina* or for aquatic life, there is no site selection criteria addressing the history of the test site, the test plots themselves create a permanent net loss of *Zostera marina* and Waterfowl surveys where suspended during the *Spartina* spraying campaign so a true picture of effects of spraying on waterfowl is not available.
6. The monitoring plan does not include effective management alternatives or adaptive management before and after for: *Zostera marina*, Brant, Pintail, Widgeon, infauna, fish eggs, native littleneck clams, crab spawning and rearing, invertebrates and forage fish.

7. A committee of various stakeholders should have been included in the management goals for the plant and wildlife species that will be adversely affected. It is well known that the waterfowl, eelgrass, salmon and herring are not meeting management goals now much less after a spray permit of this magnitude. History is clear that the use of chemicals to promote aquaculture have resulted in significant negative outcomes for native fish. The Department of Ecology allowed the shellfish industry to spray Carbaryl in Willapa Bay/Grays Harbor on up to 800 tideland acres per year for decades and it is now documented to adversely affect salmon.

8. Since Imazamox was not intended to be used in water, there is no independent research as to the effects. Other sister compounds like Imaxapic, which are very toxic, are a guide for the threats it poses to other species of plant, animal and especially birds. With other chemicals already being sprayed by the shellfish industry in Washington waters, the likely synergistic effects were not considered in the proposed spraying. We are not aware of any in house experts in the Washington Department of Ecology that have experience with these chemicals in the marine environment that would be qualified to monitor potential toxic effects.

C. Third Reason-The Proposed Permit Should Not Be Issued for Any Waters that are “Water Quality Limited,” But Do Not Yet Have TMDLs.

EPA regulations, consistent with 301(b)(1)(C) of the Clean Water Act, prohibit a “new source of pollution or new discharger if the discharge from its operation will cause or contribute to the violation of water quality standards.” 40 C.F.R 122.4(i). The only exception to this prohibition exists where there is a TMDL in place, but only if the new source or new discharger demonstrates:

Before the close of the comment period, that:

1. There are sufficient remaining pollution load allocations to allow for the discharge; and
2. The existing discharges into that segment are subject to compliance schedules designed to bring the segment into compliance with the applicable water quality standards.

Second Proposed Action-Comments on the Scope of the Upcoming Environmental Impact Statement (EIS) for the Use of Imidicloprid for the Control of the Burrowing Shrimp on Commercial Shellfish Beds in Willapa Bay and Grays Harbor.

Two formulations are proposed: “Protector 0.5G” and “Protector 2F” that would be applied by helicopter, backpack sprayer, ground based vehicle or “belly grinder,” depending on the formulation and circumstances.

1. The initial research and evaluation provided by the shellfish industry in the Plauche & Carr Risk Assessment for Use of Imidicloprid to Control Burrowing Shrimp in Shellfish Beds in Willapa Bay and Grays Harbor provides inaccurate conclusions that will adversely bias the EIS scoping process.

2. A significant amount of relevant material that contradicts major findings financed by Bayer was ignored as well as ecotoxicological findings pertaining to invertebrate and non-mammalian invertebrates. A complete literature review on this issue should include all relevant reports, not just those favorable to industry.
3. The Western Ecology Division website includes information titled “Burrowing shrimp have important impact on Pacific Northwest estuaries.” The scoping document must include all of the “ecosystem-wide consequences on nutrient dynamics, food-web structure, oyster farming and water quality in Northwest estuaries.”
4. From back up reports we have reviewed, it appears that substantial amounts of Imidacloprid are necessary to control burrowing shrimp which could lead to encouragement of excessive amounts actually being sprayed.
5. The issue of sustainability of using additional chemicals to solve increasing imbalances in the marine environment must be addressed. Practices by the shellfish industry need to be sustainable for the long term so constant processions of chemicals are not necessary to fix the newest problem. An analysis needs to be conducted that reviews the removing of the vascular vegetation which includes *Spartina*, *Zostera japonica* and *Zostera marina* in commercial shellfish areas that allows burrowing shrimp to expand into un-vegetated mudflats that then results in additional requests for more pesticide control.

Our point is documented in the report “An Analysis of the Commercial Pacific Oyster Industry in Willapa Bay, WA: Environmental History, Threatened Species, Pesticide Use and Economics by Emily Sanford, April 2012. This document includes an analysis of the commercial Pacific Oyster and the events at the Bone River flats that supports concerns regarding un-sustainable actions on behalf of the shellfish industry that result in long term ecological damage.

6. A cumulative impacts analysis is needed to accurately assess the adverse impacts on aquatic plant and animal life as well as the effects of multiple chemicals being used in the same bay or estuary.
7. Birds heavily depend on the aquatic system as the center of their food web. The expected reduction and contamination of insects in their prey base is a major consideration that must be considered.
8. Direct effects to juvenile stages of threatened and endangered species must be considered. Exposure to chemicals and loss of food resources are major issues to be addressed.
9. The scope of the EIS should include an evaluation of Imidocloprid’s movement post-treatment and possible effects to ESA listed and non-listed species. In addition, the various cycles of degradation and the risks should not be underestimated.
10. Imidicloprid, considered a neurotoxin, has been the subject of intense discussion by beekeepers all over the world. There is no doubt that it is a major bee killer and is linked to the cause of bee colony collapse. Bans of neurotoxins have been proposed in many countries and in the Eastern United States. The EIS must include a significant analysis on the effects on bees and the relevant research that is being constantly updated.

11. The scope of the EIS must include an Integrated Pest Management alternative which includes monitoring, economic thresholds and non-chemical options.

CONCLUSION

Considering the numerous adverse environmental effects that come with spraying either Imazamox or Imidicloprid in Washington's marine waters, it should go without saying that neither one of these chemicals should be permitted. Ecology should not be issuing a Permit that is not consistent with county, state and federal laws and regulations, including the Clean Water Act.

We have reviewed letters submitted to Ecology that describe in detail how prior shellfish industry spray agreement conditions were ignored, buffers were violated and no monitoring was done to evaluate the effects on the aquatic life and migratory birds. It appears from the lack of independent data provided with this permit notice, the ignoring of independent scientists concerns up to this point and the lack of a long term management approach, the destruction will accelerate with the year after year spraying. With the spraying of Imazamox first destroying the marine vascular vegetation and then the spraying of Imidicloprid destroying the marine life in the tideland areas, the result will be bare mudflats filled with only shellfish industry commodities. The shellfish industry's goal of barren tidelands will be accomplished, the natural aquatic life will be gone and the ecosystem will be completely out of balance.

Federal regulations give guidance to the Department in weighing one set of designated uses against another by requiring states "for waters with multiple use designations, (to adopt) criteria (that) shall support the most sensitive use." 40 C.F.R. 131.11(a). Ecology is therefore obligated to provide protection to the most sensitive uses; aquatic and aquatic-dependent species such as migratory waterfowl and salmonids. Even other shellfish growers have opposed these spray proposals citing that they are not sustainable and other sustainable methods should be employed.

The waters in Willapa Bay, Grays Harbor and Puget Sound are public waters and the aquatic life belongs to the public. These proposals have not documented that the shellfish industry has lost revenue, but what these proposals do show is that they would be able to expand into areas they have not raised shellfish before and there would be no limit on how many acres they could turn into barren tidelands for their sole use.

This industry should not be allowed to add to even greater destruction with not just one, but possibly two spray proposals. Willapa Bay was already referred to as a "chemical soup" by the Washington Attorney General in the 2012 Thurston County Superior Court motion for summary judgment Case No: 08-2-02042-5 and this adversity should not be increased or extended. For the above reasons, we urge Ecology to deny the proposed Imazamox Permit and carefully consider and ultimately prohibit the use of Imidicloprid.

Sincerely,

Laura Hendricks
Chair, Sierra Club Washington State Marine Ecosystem Campaign
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