

**From:** [Ross Barkhurst](#)  
**To:** [Lubliner, Nathan \(ECY\)](#)  
**Cc:** [Commission \(DFW\); REEVES, BLAIN \(DNR\)](#)  
**Subject:** Comments on legal no. 052-15 and successors re; imazamox permit coverage  
**Date:** Tuesday, March 31, 2015 7:34:39 PM

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We are writing to submit comments on the subject notice of requests for coverage for imazamox treatment of eelgrass in Willapa Bay. There have been later notices but we cannot be sure when the 30 day period may actually be up.

### Summary of Deficiencies

1. The total acreage (over 3,300) far exceeds that which is normal for historical mechanical removal of japonica and associated z marina. DOE ( Lubliner) has stated on the record that such supposedly acceptable levels of removal will not be exceeded by chemical removal. Thus, it is presumed, no new cumulative effects can be expected. Since the requests far exceed such a level, any umbrella provided by such a statement, however leaky for other reasons, is non-existent. If substantially granted, subject coverage will exceed such invalid assumptions significantly.

2. It is our understanding that buffer tests related to protection of adjacent landowners and shoreline ecology have failed. To date every applicant has bypassed such testing requirements with an understanding of the permit that if applicant stays just outside a ten m. zone, he is covered by the master test somewhere else. We now know this is not valid. The permit has not been altered. The master test has failed. Any coverage granted under this permit now must be subject to buffers satisfactorily publicly reviewed and adopted. We request that no such ten m. buffers be used next to our beds, known as C-130 an B-106. We further advise that a 19% loss of eelgrass or other vegetation anywhere on our beds due to this action is not acceptable. The state is responsible for ensuring our land and that of others is protected from such loss of ecological and recreational function.

3. We now know that imazamox is an ALS inhibitor which will retard plant growth at levels orders of magnitude less than concentrations allowed in the permit. The very minimal buffer test, which failed, does not even look for retarded growth and the loss of ecological function which will occur well outside any minimal buffer. It is clear that with the actual circulation in our bay, many multiples of the 3,300 acres can suffer loss of healthy, normal growth of both species of eelgrass, including protected z. marina.

4. We, and other personnel even within DOE, now have established that there is a vast area of Willapa Bay where there is minimal flushing during the spray window. This is well documented, but is not accounted for in the permit under which 3,300 acres is requested.

5. We own tideland in the low flushing zone. My family and I hunt, fish, grow, gather and eat

shellfish, and recreate in this area. We are not protected under this permit from the requested coverage. The wildlife in this area is in a degraded state. In 35 years we have never seen the Chum and Chinook salmon, coho in the Nemah river, waterfowl, and sturgeon in such a state simultaneously. Searun cutthroat are unfishable. Brant, pintail, and widgeon are at or below management goals, and even recent historical norms. This is all occurring at once, and was not occurring in such a manner before spartina spraying. Now that we better understand the nature of the bay and its response to uncontrolled removal of ecological function, we must do better.

6. The public cannot reasonably be expected to tell where actual coverage is being proposed. The public notice gives inadequate guidance. Ross used a county provided shellfish bed map for several hours and found about 45 of the 65 beds where coverage was requested. About 21 beds with "TL" rather than "C" or other single letter designations could not be found. The notice gave no guidance on how to find these locations.

Above are some of the reasons that the sum total of requested coverage, under an inadequate permit, with no effective baseline or monitoring program or prescribed corrective action levels, cannot be granted.

#### Detailed Analysis

During last year's initial spraying of imazamox, we experienced low growth of eelgrass on the Nemah Flats. This is where our Oyster Bed C-130 lies. We have not seen such low growth and sudden drop in waterfowl numbers since the major spartina campaign. This was a massive but one-off effort, and surfactant was used. The imazamox NPDES enables an annual, repetitive process of habitat removal. No surfactant is prescribed. It is not designed to allow the bay to ever return to normal ecological function like the spartina removal was. This return is not complete, however. Similar to the imazamox NPDES, no restoration was taken, required, or monitored. With no directed harvest, the most dependent salmon on aquatic vegetative beds, the Chum, have not recovered in ten years. This is an example of a "fire and forget" mentality which subject permit attempts to replicate.

This is the first year in five that neither Spring nor Winter Pacific Brant have foraged in sight from the East side of the Nemah flats. We can find no evidence of coordination between agencies to monitor such things. I know people in other agencies who seem willing to do so. It is as if the self-described clearing house for input, DOE, is repellant to such input, public or government. Over 1,500 acres is proposed to be treated in the low flushing zone, which encompasses most or all of the Nemah Flats and most of the Willapa National Wildlife Refuge.

DNR is our adjacent landowner north of C-130. I have been told by a DNR official "DNR land will not be sprayed". I am now hearing that it was actually sprayed somewhere in the bay last

year without DNR knowledge. More is proposed for this year. DNR was not informed. The public has not been well served or informed on such a matter. This is again unacceptable performance between state agencies, charged with conserving our lands.

In a recent shellfish symposium, a Sea Grant Scientist stated that there are areas where it is difficult to tell *z. japonica*, which people call duckgrass, from the various forms of still protected *z. marina*. An article in the Capital Press shows Kim Patten holding what he declares to be *z. japonica* which was being removed somewhere around Nahcotta. What he is holding in the photo does not meet the description of *japonica* in any literature I have reviewed. It does not match the description of any duckgrass I have ever found in a duck gullet for thirty five years. It appears to be a morph of protected *z. marina*, and thus protected. Along with WDFW aerial surveys which show a normal dearth of ducks in areas where much of the *japonica* removal is now proposed, we now have what is known in my previous occupation as an "anomalous indication". In the interest of best available science and ecology, such indications need to be resolved before major action is taken. No member of the public has the resources, time, ingress rights, or staff, to undertake such an effort. This can only be pursued by DOE, or another agency that apparently would need DOE permission. There is currently no monitoring of this situation by qualified personnel independent of DOE that we are aware of. Many beds where coverage is now being requested fall in such zones of anomalous indication. The permit as written is inadequate to protect all forms of *z. marina*, for which protection is legally required. Many subject requests are located in the main if not only remaining Pacific Brant wintering areas. Brant eat mainly eelgrass, and in our bay still concentrate on *z. marina*, which would be significantly affected where the two cannot be told apart by applicants, who are not motivated to tell them apart anyway. I have taken brant in the vicinity of beds requested to be sprayed. Those that were eating contained both species of eelgrass.

Some of our tideland is in the now well documented low flushing zone, south of a Nahcotta to Sandy Point line running southwest to northeast on the NOAA chart. It is at further risk of damage by much of the requested spraying. We had every indication of retarded growth last year, with no other credible explanation seen, and no state checks to ever find out. DOE has refused to conduct such monitoring. Only in a situation where an agency issues itself a permit can this happen. DOE staff writing and approving this permit have denied the existence of the no flushing zone and circulation of a vertical boundary estuary here, while other DOE staff actually demonstrated its existence in the recent workshop on imidacloprid in South Bend. Same department, opposite story. In the workshop a study was referenced which describes the circulation of a vertical boundary estuary, with a large dead zone in the south bay, in exquisite detail. This input is still deemed not applicable to the imazamox permit, while another draft (imidacloprid) permit proposed significant restrictions due to the same phenomenon. DOE management present, two individuals, were asked by me (ROSS) about the status of Chinook and Chum runs in our bay. Both responded that they did not know. This

is hard to accept. One of the individuals was the regional water quality manager.

Both permits propose to apply different chemicals to the same areas, including the Nemah Flats. The imazamox permit writer and his management claim low flushing conditions do not exist, while the same management chain says they do exist for other purposes. This is a major unresolved problem which by itself removes a large area from safe application of either chemical, let alone both.

A condition for cancellation or modification of the imazamox permit is when the cumulative effects become too great. This is the case when looking at imazamox alone, especially in areas which are clearly differentiated from others. Still, the public is not in a position to properly comment on subject requests for coverage because another possible permit to apply imidacloprid may be coming. Imidacloprid public comments have not been resolved to date, so in the 30 day window being provided for imazamox coverage, we cannot be expected to know the integrated impacts on our bay. I am confident that the statement in subject permit and coverage requests that "thou shalt not spray" imidacloprid within four days of imazamox cannot resolve the subject of cumulative impacts. On its face, cumulative effects of two chemicals cannot be avoided when applied on the same site within one or two half lives of each other. One kills vegetative cover, the other kills animal life such as crustaceans. Removal of Chum smolt's food and cover at the same time would not work for them. If imidacloprid is to be applied this year, we cannot adequately anticipate cumulative impacts on our land or the Willapa drainage at this time.

Cumulative impacts clearly do not have to be between two or more chemicals. They can be the sum total of past and present practices, such as salmon overharvest and hatchery practices, and failure to monitor no net loss requirements for eelgrass long ignored. Salmon for example were outside management limits before eelgrass chemical removal was instituted. A new salmon management policy is being prepared, and will make it clear that sharper reductions in harvest of Natural Origin Spawners are called for. Reductions already instituted have been well documented to be ineffective in stopping ongoing declines. The removal of estuarine habitat at an accelerated rate is a large cumulative effect too far at this time. DOE must not ignore these facts in review of requests for coverage.

#### Recommendations;

1. Do not spray more acreage than last year while generating a useful monitoring plan. Do not spray without such a plan. Such a plan must include a regular look at the health of the entire bay, not just a few meters alongside a kill box. Include the public and all agencies in such a plan. Create a new level of independence from the permit holder in such a plan. Generate documentation as to what each agency has to say. Without this the public is not adequately

served, and has no indication that all state agencies have done their part, or even been required or allowed to do so.

2. Do not spray imazamox on or near public tidelands. These would include so-called Public Oyster Reserves managed by WDFW, and DNR land.
3. Do not spray imazamox in connectivity zones between gravel bearing streams and channels where salmon smolts must transit.
4. Do not spray in the low flushing zone where the permit ignores the hydrodynamic features of Willapa Bay described by Banas and Hickey 2006. Do not spray where the circulation of the bay will carry chemicals immediately into the low flushing zone.
5. Do not spray imazamox without a 60 day period for public comment and resolution on an imidacloprid permit if one is coming. Do ensure all cumulative effects are knowable to the public, and that a judgement can be made how impactful they are, taken together. Do not spray hundreds of acres with imidacloprid under another existing permit that does not allow such scrutiny, and call it a "test", as was done last year.
6. Do not spray without baseline and monitoring parameters suitable to protect and restore z marina, Pacific Brant and their forage, Winter and Spring. Do not spray without such monitoring and corrective action as needed to restore Chum and Chinook to their Natural Origin Spawner goal levels for the Willapa Drainage.
7. Do not spray eelgrass in or near the North River estuary, which is being designated a wild Chinook River, with no hatchery origin fish allowed. This is consistent with WDFW goals to restore a natural spawning run which is almost or actually lost.
8. Do not spray eelgrass in the estuary of any river designated "primary" for a salmon species under the legal requirements for application of HSRG ( hatchery science reform group) standards. These designations are under final review at this time, in a public process. Restrict spraying as appropriate in estuaries of rivers designated as "contributing" under HSRG standards.
9. Do not spray eelgrass inside the demarcation boundary of the Willapa National Wildlife Refuge. This was created as a Brant Refuge, and the z. marina and brant are gone. Allow them to come back. Institute restoration of marina in this area. Since it is in the no flushing zone, work with USFWS to monitor the restoration.
10. Do not spray waterfowl forage in refuge land that was purchased by the public with duck stamp money. This was purchased to conserve ducks, not kill their food and drive them

off. Make no detectable reduction of waterfowl forage in Willapa Bay. This could be defined as 10% below that which was available in the Fall of 2012.

11. Do not spray near a swale containing *Zostera marina*. The permit allows spraying IN a swale if the water is not moving. It will move within an hour or two and kill all the *marina* exposed. A definition of "near" must be developed which takes into account that the ten m. downslope buffer zone has tested negative. An hour or two is a fraction of the half life of an ALS substance. Without a surfactant, it will move and kill readily in a swale.

12. Do not spray on the Nemah Flats. This is mostly in the no flushing zone and is the nursery area for Chum and Chinook smolts entering the bay from the Naselle and Nemah River systems. This constitutes at least seven streams with Chum runs significant to the whole drainage ecology, and recreational and commercial fishing. Most of these fish are of natural origin. There appear to be three beds requested for coverage on the Nemah Flats for this year. They are up flow from our tideland. We will suffer irreparable harm due to loss of waterfowl forage on our land, and salmon fishing in the Nemah River where we have historically fished since the late 1970's, if the Nemah Flats receive any significant imazamox treatment.

In closing we would like to mention that in every case we could see, coverage is requested for every acre in each bed listed in the public notice. It is not legally possible to treat every acre under subject permit. A buffer is required which must subtract several acres in every case. We could find few if any beds bounded on four sides by other requested beds. In addition, if DOE has approved last year, or were to approve approve this year, such requests, this is defacto recognition that it is allowing applicants to remove ALL protected *Zostera marina* on every bed so approved. This constitutes an intentional spread of pollution beyond the intent of the EIS, and beyond any justified need for clam culture on many beds. In conjunction with discharge management plans previously approved, it allows and encourages establishment of clam or oyster beds, replacing existing essentially pure *Z. marina* beds, as long as there are a few sprouts of duckgrass anywhere on a multi-acre site. Let us be clear, this blanket approach to entire beds allows removal of predominately *Zostera marina* beds. It goes beyond the word and intent of the Shoreline Management Act, and enables protected eelgrass removal for activities beyond clam culture, whereas *Z. marina* beds cannot be legally removed even for clam culture. Unless DOE expressly prohibits such activity in an appropriate manner, visits each site before and after treatment for verification, and enforces the intent of the EIS, this is the path to illegal, "permitted" defoliation of a bay already not meeting wildlife and ecological management expectations of the public and other public agencies and landowners.

Thank you for your kind attention,

Ross P. Barkhurst  
Christine W. Barkhurst

South Bend Washington    March 31, 2015

**From:** [Ross Barkhurst](#)  
**To:** [Lubliner, Nathan \(ECY\)](#)  
**Cc:** [Commission \(DFW\)](#); [Director \(DFW\)](#); [REEVES, BLAIN \(DNR\)](#); [RECHNER, MICHAL \(DNR\)](#)  
**Subject:** Second Set of comments re Japonica Request for Coverage  
**Date:** Monday, April 6, 2015 8:49:07 PM

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I am writing you with more comments. These backup some of our recommendations in the first set. Would you please advise that you received this and the previous comments, also sent by e-mail?

A further detailed review of the Request for coverage No. 054-15 in the Chinook Observer shows that approximately 1,640 acres of mapped, protected *Zostera marina* are requested to be sprayed under the umbrella of *Z. japonica* removal. I used the same map as the FEIS, USDA 2006/07, by Dumbauld et al. About one third of the beds in the notice cannot be located by me on the county shellfish bed map, as previously stated. At the same rate of occurrence, a total of 2,460 acres of *Z. marina* would be removed. This says that the subject requests would directly remove 12% to 18% of the remaining protected eelgrass in Willapa Bay in one year alone.

There are locations, such as the three bed cluster of C-67, C-101, and C-28 on the Nemah Flats, where virtually the entire proposed area falls within known, mapped, *Z. marina* medium and heavy density beds. In this example, the same area is laced with drainage/ lower elevation locations. Still, the entire acreage is in the request.

The FEIS contains several pertinent statements that in fact would not be implemented in the permit. One such is on p. 25, where it says that the permit should not allow spraying in " low elevation areas". In fact the permit allows such spraying " as long as the water is not moving." Subject requests contain no carveouts, even though again, the FEIS assumes a grower "will not be motivated to spray there because clams do not usually grow there." I can tell you that a) clams do sometimes grow there, and b) oysters are much easier to harvest in such lower areas if *Z. marina* is first removed. In cases such as this, where the FEIS assumes a grower will not take a damaging action due to lack of motivation, with no in situ oversight, it must assume that with such motivation, he will take such action.

The permit does not carry out the safety assumptions of the FEIS for the requests in question. Such instances are much more noticeable when faced with actual coverage requests and maps, and these can be compared to pre-suppositions of the FEIS. We have left theoretical space and entered Willapa Bay.

We have also determined that there is a major low-flushing zone in Willapa Bay. DOE has the study ( Banas and Hickey 2005.) A review of the 2006/07 USDA maps we both use shows about one half of all protected *Z.marina* in the bay occurs within this zone. Another fifteen % feeds directly into this zone with the counterclockwise current rotation of this major

estuary. This totals about two thirds of mapped significant marina beds. The FEIS itself demonstrates that very low levels of ALS inhibitor will impact/retard plant growth. We have referred you to Humbolt Bay Brant studies showing Brant need new growth in northward migration and must move to find it. The FEIS assumptions of DOE and EVIRON about dilution are clearly not valid. As a result, the two thirds of Z. marina in Willapa Bay referenced above is subject to growth retardation or can be directly removed.

The FEIS says that buffer zones between marina and japonica should be established, and assumes they will be. Such zones do not apply between the two species of eelgrass per se, and are not prescribed by the permit itself. As a result, DOE has assumed now already known to be failed buffer zones can continue to fail over a period of at least three years, during which thousands of acres of marina are lost, without permit revision in the interim.

In summary, the requests for coverage would directly remove 12% to 18% of the remaining Z. marina in Willapa Bay in one year. The application to a low flushing zone unreviewed in the FEIS puts two thirds of the remaining protected eelgrass species in the bay at risk of degraded growth conditions not analyzed for in the FEIS. These constitute two major unreviewed water pollution safety questions. The permit does not properly cover these situations as written, because they fall outside Final Environmental Impact Statement support.

We have previously advised as to the orders of magnitude errors in the FEIS waterfowl forage budget. In keeping with the above analysis, waterfowl historically present in Willapa Bay Fall and Winter migration could no longer be sustained under subject requests. In a similar fashion, FEIS assumptions about salmon smolts preferring Z. marina, implying them to be safe from japonica loss, are clearly invalidated by the massive impact on marina by a permit which, if applied to the body of coverage requests, falls far outside FEIS assumptions. In one short year we would be in space we can label as " unreviewed water pollution safety questions." FEIS reviews one set of parameters, requests for coverage generate another set by impacting thousands of acres of mapped, protected, medium and heavy density Zostera beds. In my previous comments I attempted to outline a few recommendations designed to avoid such questions.

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**To:** [Lubliner, Nathan \(ECY\)](#)  
**Cc:** [fritzi cohen](#); [John B. McAninch](#); [kurtsnyder@outdrs.net](#)  
**Subject:** FW: Brant Farewell Spring Staging?  
**Date:** Monday, April 13, 2015 4:14:45 PM

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Please consider this input to legal notice 054-15 re request for coverage for NPDES permit for imazamox for control of *Z. japonica*.

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From: rp.barkhurst@hotmail.com  
To: laura.l.hendricks@gmail.com; mikavan@aol.com; nwducks@frontier.com; ttienson@landye-bennett.com  
CC: commission@dfw.wa.gov; nlub461@ecy.wa.gov; mab451@ecy.wa.gov  
Subject: Brant Farewell Spring Staging?  
Date: Mon, 13 Apr 2015 18:57:20 -0400

Saturday morning, April 12, on an outgoing tide, I witnessed about 1,800 Pacific Brant staging in Willapa Bay. They were quite vocal and this attracted my attention while working on the beach. They were on the outer Nemah Flats, leapfrogging each other in flights as the water exposed mapped *Z. marina* eelgrass beds out there. They were right in the area I have identified near the old oyster station, and three shellfish beds where imazamox permit coverage has been requested. The subject beds are C-67, C-29, and C-101, 134 acres total claimed. You may remember I said I have taken Brant in this vicinity, sampled their gullets, and they contained predominately *Z. marina*, with *Z. japonica* also present.

This area is south of the Dispersion Gap, well within an area of 45 day old water. Banas and Hickey 2005 states clearly that the best indicator of the degree of flushing is water age. Imazamox is an ALS inhibitor, would be applied at 600 parts per million, and can retard growth at a few parts per billion, our pesticide expert tells us. These birds were exhibiting feeding behavior across mapped medium and heavy density beds. It is easy to identify this area because remains of the old Oyster Station are excellent landmarks. It will be difficult to believe if a State agency authorizes devegetation of such areas this Spring. I have found many on the map of requested eelgrass removal for this year. Over half are in the low flushing zone, and many are in areas frequented by depleted numbers of Pacific Brant. Some are in the Willapa National Wildlife Area. Some are even public tideland.