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Subject: Comments on DOE Draft Proposal to Renew Eelgrass Spray Permit
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We are writing to provide our comments on the draft Zostera japonica Management on Commercial Clam Beds in Willapa Bay General Permit. We appreciate the effort to communicate to the public at your workshop of Oct 22 workshop in South Bend. I could not navigate the DOE form so am asking you Jon to please include these comments as formal comments on the subject.

1. In the workshop staff showed data from five years of spraying. It was not clear that spray was applied for six years under the last five year permit. The number of annual applicants and acres requested was not shown for 2019. It certainly was not clear that it seems this permit would result in eleven years of eelgrass spraying, or more, under two five year permits.

2. It was not made clear that the elimination of eelgrass root and rhizome systems allows lugworms and burrowing shrimp to flourish. On our OB C 130 most eelgrass has disappeared under six years of spraying further out in the bay. These worms and shrimp are flourishing and our bottom no longer supports oyster culture. This has never happened before here in over forty years. We are forced to shift to more long line culture to continue, and to racks with grow out bags. Every year since spraying began we have had major eelgrass die offs, both species, never experienced before. Needless to say waterfowl use has gone downhill. our more common waterfowl, Widgeon, pintail, and mallards eat japonica and roots. Greenwing teal do not. The last few days we have had numerous Greenwing Teal on our bed with not one other species visible with binoculars. We have never seen this situation in over forty years. Under now six years of imazamox spraying the habitat is totally altered.

3. It was not made clear to the public that this old permit allows removal of ALL eelgrass from any permitted clam bed. Zostera marina which is still protected can be removed also. We have double checked this with Nathan Lubliner and he has confirmed this to be the case. After reading the summary you put out the general public would have no clue. Your summary does make clear that any protected Zostera marina lost in from a bed does not count as net loss of ecological function. This is incredible, and we believe illegal. It makes no sense related to conservation of wildlife or fish.

4. Pacific County recently renewed its Shoreline Master Plan. This was done under the funding and supervision, with final approval by, WA DOE. It clearly states that should protected Zostera marina return to an aquaculture bed, it is no longer protected. This is incredible, and we believe illegal. It is surely the way to cut back on native species from fish to waterfowl to forage fish to marbled murellets to Orcas to a list too long to recite.

5. A recent US District Court Decision against the Army Corps of Engineers universal

nationwide aquaculture permit has made it clear. No net loss of ecological function has not been scored by the Corps. This includes that caused by pesticides. Previously the Corps has claimed since it does not control NPDES permits it does not count such losses. The court made it clear that it must. That permit is declared illegal. Still in discussion with your Lubliner and Jennings in South Bend they made it clear that in DOE opinion " that has nothing to do with us". Incredible. The WA Shoreline Management Act makes it clear that no net loss of ecological function is allowed in Shorelines of Statewide Significance such as Willapa Bay. The State seems to act as if there are three Willapa Bays. One is regulated by the Federal Government, one by DOE, and one by the county in which it resides. Clearly this cannot be true.

6. Conversations in South Bend workshop seemed to center around a concept that HPAs are used to control habitat loss in Willapa Bay. Since HPAs are not required for aquaculture, then loss of ecological function is not controlled, and therefore acceptable. This clearly cannot be. The US District Court Decision makes it clear. The no net loss requirement makes it clear. The refusal to prevent or track losses is not acceptable.

7. The District Court decision also made it clear that net loss prevention cannot be handled by merely looking at eelgrass. DOE proposes to accomplish no net loss without even looking at eelgrass. Incredible.

8. Willapa Bay is now suffering a simultaneous failure of multiple species that we have not witnessed in over forty years. Chinook salmon, coho salmon, chum salmon are all failing to meet Salmon management requirements all at the same time. Herring spawning mass has declined from four hundred tons to zero. Waterfowl numbers have fallen during the November peak from 100,00 two years before eelgrass spraying to 70,000 one year before to 22,000 the first year of this permit. WDFW quit counting at that point. We know what 22,000 looks like and have not seen that reached since. Herring spawning mass was not surveyed for years starting when Spartina was sprayed. Spartina spraying was a one off, eelgrass spraying is proposed to go on indefinitely now by DOE. The permit would continue to allow spraying eelgrass in herring spawning beds. The structure for eggs there is eelgrass. This permit says it becomes unprotected as soon as it is removed. The permit as written would continue the unmeasured unmonitored removal of ecological function under the already mentioned unacceptable regime. WDFW has abandoned policy guidelines requiring recovery of natural spawning salmon. We were recently treated to a paper written by Fish Department Region Six personnel that purports to show that cutting back on harvest of by non selective nets does not produce any more natural spawners. This was used as justification to stick with original harvest seasons this year when fish did not show up in numbers even resembling those forecast. As a result WDFW does not have even enough hatchery fish to meet policy egg take requirements. That Department has issued a pie in the sky goal to markedly increase Chinook production in Willapa Basin hatcheries to help feed the Orcas. Eggs for this do not exist, and may not exist for years without drastic measures WDFW has avoided to date. Habitat is a key player in this, along with irrational over exuberant preseason forecasts that do not materialize.

9. The Willapa Salmon Management Policy stresses the management of Four H's. One of

these is habitat. We are not allowed to discuss Habitat in our Salmon Management Advisory Group Meetings. Fish Department staff " does not have time." Incredible.

10. A citizen's group called Willapa Basin Ecosystem Review Team (WBERT) has been formed to advise WDFW Commission on habitat matters in Willapa Bay. An extensive report was provided on March 20 2019. It contained several recommendations. As of this date none of these have been acted on. The report is well referenced with scientific papers, most peer reviewed, to back up its recommendations. DOE can obtain a copy should it find that useful. WBERT recommended that no more chemical eelgrass removal be allowed unless or until that can be surveyed against a referenced 2006/07 baseline. In discussions before and after the Oct 22 workshop, DOE and WDFW staff expressed the opinion that a 2015 survey by Dumbauld of USDA demonstrated no loss of eelgrass. It was done using spot checks chosen to show no loss. They are not representative of what is there. The US District court properly rejected a Dumbauld study when the Corps tried to use it to show net loss was being monitored. And, of course a long list of wildlife is telling us the same thing. Also that court made it clear that measuring eelgrass is not enough to inventory ecological function. We agree. Eelgrass is a major enabler for what we all deserve, plentiful fish and wildlife.

11. The summary claims imazamox in sediment is not a concern because Willapa Sediment does not contain Organic Carbon in sufficient amounts to attract it. The same DOE when it first issued a permit for imidacloprid sampled and delineated large areas of North, and especially South Willapa Bay below the dispersion gap as off limits for imidacloprid. The reason given was the high amount of organic carbon in the sediment!

12. The continuance of such a permit as this relies totally on passing the required " buffer validation test". The test failed. The report of results was not released until AFTER an appeal of this permit to the state PCHB. The acceptance criteria for the test were exceeded. These criteria were changed to make it pass. The test was supervised by WDFW Fish Department. Its independent scientists were evicted from the test site after they required further inspection of damage done well outside the ten meter buffer being "validated". They later were replaced by K Patten, who had originally been responsible for the actual test spraying. He wrote a supernumerary supplemental report saying the original buffer was OK and should pass. WDFW declared it passed. WA Department of Natural Resources reviewed the test and declared it failed. As did R. P Barkhurst, an author of these comments. The DOE summary to the public did not inform the public of these questionable circumstances, nor did it inform the public that Mr Patten was convicted of an ethics violation related to selling clams to the WGHOGA eelgrass committee head while supposedly inputting WGHOGA on an EIS for the permit. The contract was cut on a state computer. The permit now assumes the buffer prevents damage outside the permitted area. It did not. In addition if the applicator finds a " cooperating landowner" as a neighbor, he CAN kill protected eelgrass outside his bed if it is OK with the neighbor. This whole permit is the route to ratchet eelgrass habitat out of existence.

13. The EIS assures us that no more than a certain number of acres will be defoliated under this permit and thus that will assure plenty of eelgrass for waterfowl including Pacific Brant and another species of concern now, Pintail. Calculations arriving at this number were off by

several orders of magnitude and this has been testified to in court (PCHB). In the South Bend workshop the question was asked as to how DOE tracks total acres defoliated cumulatively over the years. They could not answer that question. Apparently not tracked. The decline in waterfowl in Willapa Bay tells the rest of the tale. The refusal to count them is inexcusable.

14. The DOE summary again claims "tidal dispersion" as the cure for chemical spread which could retard growth of other non target plants outside the failed ten meter buffer. Banas and Hickey 2006 made it clear this does not work on the macro bay scale. It is well documented that little exchange with the sea exists south of the Dispersion gap. Still, Patten has claimed that within the low exchange area in the south, there is plenty of water to exchange and dilute without "carrying it out to sea" as claimed to date. Now we are faced with the well publicized Banas, Wheat, and Ruesink study released earlier in 2019. It shows in detail how starting only 500 meters from channels, in shallow areas the same water can stay around for over five or six tidal cycles. The shellfish end up filtering "old" water and growth is slowed. This even occurs in the big picture high circulation to sea area North of the dispersion gap. So much for tidal dispersion. To continue to foist this misleading dispersion theory on the public is unconscionable. The public should also have been advised that if under this permit the applicator does not stray into the so called ten meter buffer, he does not have to monitor for any damage or report same.

15. The summary to the public now gives the example of an "established hayfield" discussed on the imazamox product label as justification for why up to 50ppb of this chemical drifting around outside of a sprayed area in the bay will be just fine. There are two problems with this pure speculation. First is "established". Second is "hayfield." Much of our eelgrass propagation is through seed. The spray window is April 15 through June 30. Regrowth of eelgrass is occurring during this time. This must be obvious. When one reads the label further one sees strong precautions against using water on golf courses or in nurseries at imazamox concentrations equal to or greater than ONE PPB (emphasis added). Vendors now like to tout that imazamox has some pre emergent toxic benefits. In other words if you want to start plants in a nursery or fertilize, reseed, and maintain a golf course, forget using water containing any imazamox. Forget recovering or establishing eelgrass in an estuary too.

16. When asked in the public workshop if DOE checks current vectors crossing a requested spray location the answer was no. This can easily explain loss of both eelgrass species the author has observed and shown to WDFW personnel on the Nemah Flats. A current vector has been mapped leading from approved spray sites right to the heart of those flats and OB C130 which we own. Numerous other such vectors are well mapped but ignored under coverage approvals we now know.

17. DOE personnel in South Bend workshop indicated this draft had been discussed with WDFW in its current form and no problems were expressed. We hope that WDFW fish, wildlife, and habitat people will provide some robust comments prior to the deadline. That lead Department is presiding over a failed ecosystem and sharply reduced fish and wildlife. It needs to commence a turnaround of the habitat immediately and this will not be likely with further implementation of permanent chemical removal of habitat under this ill advised draft

permit.

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