

Comments on SEIS from Olympic Environmental Council

We are a 501c3 organization in Washington State that is concerned with protection and preservation of natural systems. We serve as an umbrella organization for other organizations and groups dedicated to defending natural systems. Historically, we have been active in this arena for over 25 years since the dawn of GMA process and have had to appeal several bad agency decisions.

I am sure we will not be alone in noting that absurdity of permitting non-lethal levels of insecticide, and the inevitability that this approach will predictably fail to address the deep systemic problems that the industry and the agencies have created over the past 50 years, by focusing in single issues w/o considering to potential scale or importance of the unintended consequences of the actions taken to protect an industry that is based on entirely unsustainable methods and fundamental misunderstandings of ecosystems.

First things first: if we look at this as an ecosystem, the burrowing shrimp have coexisted in balance with the oysters in Willapa Bay forever. They have been in the estuary at high population levels since before the ice age. If population of a single species appears to be increasing rapidly the first question that needs to be asked is "Where?" And the second question is of course "Why?" The answers to both of these questions point to a long history of gross negligence by the shellfish industry.

At the turn of the century self-serving exploiters basically strip-mined the estuary and destroyed the shell reefs that had supported the oysters, kept the shrimp out of oyster territory, and kept aragonite levels in the water column ideal for oyster propagation. Since then, almost everything that has been tried has had the appearance of a macabre comedic sort of rolling catastrophe. Growers introduced numerous invasive species, each of which has complicated the situation. They introduced japanese oysters, whose means of reproduction is poorly suited to the chemical conditions in the estuary, manila clams, oyster drills, spartina, and japonica. And someone introduced the isopod parasite that is currently driving the mud shrimp to the verge of extinction on the west coast.

Historically, mats of japonica rhizomes supported vast populations of migratory waterfowl. The stuff has been called 'duckgrass' for a very long time, because ducks and geese eat the blades, roots, or both.

American Wigeon, Northern Pintail, and Mallard are the three main species of ducks that eat duckgrass on Willapa Bay. These ducks are dependent on duckgrass to survive; in fact the Wigeon's diet consists of more plant matter than any other dabbling duck. The Northern Pintail is considered a common bird in steep decline.[ii] The Dusky,

a goose, eats both duckgrass and *marina*, and on paper, the Dusky is a protected goose, due to low a population.

There are several species of migratory geese that are almost totally dependent on it being here and when they fly into Willapa Bay expecting to feed and fatten for their migration, they now find barren defoliation. This is genuinely life threatening: they simply cannot survive a mistake of this magnitude. But it is not the ducks' mistake, it is the mistake of Washington State that is permitting the destruction of duckgrass and marina with Imazamox.

Since the 1980's scientists have consistently reported (see Feldman 2000 review paper and excerpt below) that eelgrass keeps shrimp from burrowing in the areas where it grows. The eradication of *japonica* has now damaged or destroyed both species of eelgrass (*marina* and *japonica*) over vast areas of Willapa Bay and opened those areas to shrimp. The wholesale destruction of Eelgrass using the herbicide Imazamox not only reduced the shrimps' predators, who used it as habitat and hiding cover, it removed a key physical constraint - the mats of rhizomes were an obstacle to the shrimps' burrows and the destruction of the Eelgrass (to support another introduced invasive species: Manila Clams) has allowed the shrimp to move into vast areas where they could not live when the Eelgrass was there. "Field surveys have been consistent with Brenchley's (1982) findings, noting the abrupt decline and low densities of ghost shrimp burrows in *Zostera marina* beds compared to adjacent intertidal mudflats (Swinbanks and Murray 1981; Swinbanks and Luternauer 1987). Harrison (1987) reported that an expansion of *Z. marina* and *Zostera japonica* habitat was accompanied by a corresponding reduction in ghost shrimp density."

So now the industry wants to poison the sediments with a different neurotoxin in an effort to paralyze the shrimp so that they will suffocate in their burrows.

A lawsuit brought against the state and industry by citizen activists to end the use of carbaryl resulted in a hard won settlement agreement with the Willapa Bay Grays Harbor Oyster Growers Association. This agreement called for the phase-out of carbaryl and gave the industry **over a decade** to develop and adopt an integrated pest management plan to replace their unsustainable pesticide-based shrimp control measure. This settlement agreement was based on a serious legal challenge from citizens -- not the state -- against ecosystem scale contamination. It is not what the industry PR machine is now pretending was a voluntary phase-out based on some sort of magic wand of enlightenment among the growers: they kept spraying year after year and spent hundreds of thousands of dollars (including public funds) exploring alternate chemical approaches rather than embracing non-chemical approaches to restore ecosystem balance. During that 10 year negotiated phase out, the National Marine

Fisheries Services determine in 2009 that the application of carbaryl in both Willapa Bay and Grays Harbor jeopardized the continued existence of endangered salmon and adversely affected or destroyed their habitat.. Also in 2009, the NMFS determined the application of carbaryl adversely affected ESA listed green sturgeon in these same bays. The spraying continued unabated.

A great deal of public money was spent exploring chemical means to control a native animal species whose growth has been facilitated by destruction of a native plant species. As far as we can tell, the use of USDA's IPM funds to develop a pesticide based approach to destroy a native animal species in support of a non-native animal species is entirely unprecedented, and is especially disturbing in the face of the population collapse of the native mud shrimp that is currently underway. It is not clear if, when, or how the required IPM was actually adopted, but it is very clear that almost none of the usual principles of IPM are involved in the latest pesticide permit proposal. The DEIS to which this EIS is attached is deeply flawed, because it fails to address the complex interactions between species. For example, the estimates for incidental take of non target organisms are just plain wrong, and the role of crabs as oyster predators is not discussed, but millions of <1 juvenile crabs are poisoned, though older crabs are not destroyed.

Because the pacific oyster spawns into the water column, and the initial layer of shell is developed in the water column, rather than under controlled conditions inside the female oyster, as occurs in the olympia oysters that were native to these waters, water conditions are critical, if shell building is to proceed properly. In an effort to control this process, and to allow the propagation of sterile triploid oysters, the industry adopted a hatchery program to supply seed. Mismanagement of the hatcheries and misunderstanding of chemical processes involved in shell building led to the claim that ocean acidification was destroying oysters and that pacific oyster was the canary in the coalmine for ocean acidification. This was an interesting story and it played well in the press, and continues to be played by politicians, but it was based on both a serious misunderstanding of water chemistry and a willful convenient falsehood.

The real problem is that unlike the native oyster, the pacific oyster is near the edge of its natural range and its means of reproduction in the water column is only suited to chemical and temperature conditions found in these water some of the time. When those conditions are not present, shell-building in the first 48 hours is compromised. It is a very human trait to assume that every year is pretty much the same as the ones before it, but this assumption leads to human development along unstable slopes and riverbanks that move and so the development gets wiped away when weather

conditions drift outside the normal range. Same with the oysters. Water conditions 80 years ago were perfect for them. Since that time, vast tracts of forest in the watersheds that feed the estuaries have been removed, potentially altering the pH of the water entering the estuary, the eelgrass in the bay has been eradicated, and the ecological balance has been drastically altered by ground culture methods that involve dragging the bottom of the bay with chain dredges and harrows, stirring up sediments.

We also see a very serious issue emerging in that the primary proponent of the pesticide approach has been found to be in violation of the state's ethics rules. It appears to us that the ethics board may actually have failed to follow the rules set forth in the APA that appear to us to call for agency actions taken on the basis of ethically compromised testimony to be revisited. The key presenter and salesman for this new pesticide and its permit has been censured and fined by the ethics board for his involvement with the industry [] which should raise serious concerns for agencies who have relied on his testimony and sale pitches.

What we find astonishing is that your agency and you as individuals know more than we do about what is going on. You know ALL of this and more, and you know that it is just plain wrong. This is willful blindness on your part and is not an acceptable defense.

It is time for you to be asking hard questions, not us.

Joe Breskin
Olympic Environmental Council

