



State of Washington
Department of Fish and Wildlife

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RE: COMMENTS ON DRAFT *ZOSTERA JAPONICA* MANAGEMENT ON COMMERCIAL CLAM BEDS IN WILLAPA BAY GENERAL PERMIT

Thank you for the opportunity to provide comments on the draft *Zostera japonica* Management on Commercial Clam Beds in Willapa Bay General Permit. The Washington Department of Fish and Wildlife (WDFW) is dedicated to preserving, protecting, and perpetuating the State's fish, wildlife, and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities. In recognition of these responsibilities, we submit the following comments.

Zostera marina (*Z. marina*), a native eelgrass, which occurs in the low intertidal to sub-tidal area, appears to be at or near historical abundances in Willapa Bay. Invasive eelgrass, *Zostera japonica* (*Z. japonica*) appears to be expanding in the mid to upper tidal zone, which is also the preferred ground for growing commercial quantities of clams. Infestations of *Z. japonica* on commercial clam beds can have significant negative impacts. It is documented that non-native eelgrass can negatively affect the growth of manila clams, increases the costs of production, and reduces overall yield on shellfish beds.

WDFW reviewed the Permit and literature associated with the use of Imazamox in order to identify negative impacts that could occur to wildlife resources. When used as described in the permit, Imazamox is unlikely to have significant negative impacts on wildlife species in Willapa Bay. Some indirect impacts may occur to invertebrates, waterfowl, and shorebirds that occupy eelgrass beds at the time of treatment. However, *Z. japonica* is non-native component of the eelgrass system and is not known to be a critical resource for native wildlife species. To address the potential concern that waterfowl are indeed utilizing *Z. japonica* as a food source, a migratory waterfowl foraging budget for *Z. japonica* was presented in the Final Environmental Impact Statement for the original authorization of this permit in 2014. This foraging budget estimated that 1,600 acres of *Z. japonica* may be needed for waterfowl forage. During a 2006/2007 eelgrass (*Z. japonica* and *Z. marina*) survey by USDA, it was estimated that there were approximately 12,000 acres of moderate to heavy density *Z. japonica* within Willapa Bay. With an anticipated treatment of up to 3,000 acres of intertidal habitat to control *Z. japonica*, and inclusion of the waterfowl budget acreage, it is estimated that more than 7,000 acres of *Z. japonica* would remain in Willapa Bay.

WDFW also reviewed the Permit and literature associated with the use of Imazamox in order to identify potential negative impacts to fish and shellfish resources. When used as described in the permit, Imazamox is unlikely to have significant negative impacts to fish or shellfish species in Willapa Bay. Some indirect impacts may occur to fish and shellfish that occupy eelgrass beds at the time of treatment. Native eelgrass provides valuable habitat for salmon and other marine organism. The benefits provided by healthy native eelgrass beds include protection from predators, improved water quality and increased insect production. Pacific Herring (*Clupea pallasii*) spawn in the estuaries of Washington State, including Willapa Bay, and eelgrass is commonly utilized by spawning herring as a substrate to deposit eggs. Herring eggs have been observed more commonly on *Z. marina* than on *Z. japonica* due to the greater prevalence of *Z. marina* and its tendency to grow at greater depths than *Z. japonica*. The potential negative impacts to Green sturgeon (*Acipenser medirostris*) are less understood but one food source is Ghost shrimp (*Neotrypaea californiensis*). Ghost shrimp densities appear to be less abundant in an area with established *Z. japonica* therefore removing *Z. japonica* could increase forage for Green sturgeon.

In review of this Permit, and current available information and data, we anticipate no significant direct impacts to fish and wildlife resources in Willapa Bay associated with treatment of japonica as described in the permit. However, we do have a few specific comments regarding the special conditions of this Permit surrounding product use, treatment buffers, monitoring, and reporting.

S4. PRODUCT USE A. 2(b)

It is required that applicators not apply Imazamox at an application rate greater than 1.4 ounces per acre. In an attempt at preventing spills in an amount that would cause unacceptable negative impacts, we suggest limiting the total quantity of Imazamox allowed on-site to the quantity needed to cover the acreage that can be sprayed for the day.

S4. PRODUCT USE A. 2(e)

There is limited information available relative to herring populations within Willapa Bay, but documented spawning grounds are found in the southern portion of the bay and observations of herring spawning activity has occurred in February and March. The Permit authorizes the application of Imazamox from April 15 through June 30. This work window falls outside of the observed herring spawning timing for Willapa Bay, thus, should prevent unacceptable reductions in spawning substrate for herring.

S4. PRODUCT USE A. 2(i) and B.

One application requirement mandates a 10m buffer on each parcel property boundary to protect resources outside of the treatment area. While this buffer has been supported by previous studies to protect resources outside the parcel boundaries, the requirement does not address adjacent *Z. marina* within the parcels themselves. As indicated by *Imazamox control of invasive Japanese eelgrass (Zostera japonica): Efficacy and nontarget impacts*: “The greatest ecological risk to native eelgrass from imazamox is from short-term, unintentional in-water exposure at locations where it is naturally found. This could occur when the concentration and exposure time (CET) to Imazamox in on-site static pools and swales became high enough to cause damage.” The Permit requires the Permittee to not directly apply Imazamox into any drainages that contain *Z. marina* and is moving water off the treatment site. It would be beneficial to require the same 10m buffer around any on-site native *Z. marina* patches to aid in the protection of this native species.

S5. MONITORING

The Permit states that Permittees must conduct routine monitoring on all treated clam beds. WDFW recommends that monitoring frequency should be explicitly stated in the Permit, i.e., after every treatment, or some other frequency. Also, the Permit focuses on self-monitoring by the applicant with no indication that neutral party studies are planned to either independently monitor treatment or compile data

to help determine the effectiveness of the application or in the buffer intended to protect native eelgrass and other species. WDFW recommends developing a third-party independent review program to verify effectiveness and to ensure that the conditions of the Permit are followed.

S7. REPORTING C.

The Permit relies on self-reporting by the Permittee. This includes the events in which the Permittee is unable to comply with terms and conditions of the Permit that may endanger health of the environment. The Permit states that when a Permittee finds themselves out of compliance, they must stop activity and take actions necessary to return to compliance. While it may or may not be appropriate for a Permittee to make the call on noncompliance, we feel that it is inappropriate for the Permittee themselves to determine they have returned to compliance.

Thank you for the opportunity to review and offer comments on the Draft *Zostera japonica* Management on Commercial Clam Beds in Willapa Bay General Permit. If you have any questions regarding our comments and/or recommendations, please feel free to contact me at (360) 249-1211 or Larry.Phillips@dfw.wa.gov.

Sincerely,

Larry Phillips
Regional Director

cc: Kelly Susewind
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