

## Summary

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| <b>Meeting dates:</b> | March 14, 2014, Commission Conference Call  |
| <b>Agenda item:</b>   | Petition requesting that WDFW protect <i>Zostera japonica</i> from the herbicide imazamox and to list it on the WDFW Priority Habitat and Species List. |
| <b>Presenter(s):</b>  | Lisa Veneroso, Assistant Director, Habitat Program  |

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**Background summary:** The Fish and Wildlife Commission received a petition for rule making (RCW 34.05) from Rob Kavanaugh, L. Hendricks, W. Weiler, J. Thornton, F. Cohen, and The Coalition to Protect Puget Sound to protect *Zostera japonica* (Japanese eelgrass) from the toxic herbicide imazamox and to list *Z. japonica* on the WDFW Priority Habitats and Species List.

The Department of Agriculture's Noxious Weed Control Board is responsible for identifying the State's Noxious Weed List. This Board listed *Z. japonica* as a Class C noxious weed in January 2013, allowing for its removal. In response to this listing, the Department of Ecology is developing a NPDES permit to allow the use of imazamox for the purpose of controlling *Z. japonica* on commercial clam beds in Willapa Bay.

The WDFW Priority Habitats and Species (PHS) list, data, and recommendations are non-regulatory and provide best available science to guide land use practice decisions made by governmental and non-governmental entities. The PHS list currently includes only native marine vegetation. The petitioners are asking the Commission to include *Z. japonica* in our PHS list so other regulatory agencies (Counties, Department of Agriculture and Ecology) can reference PHS to protect the non-native eelgrass *Z. japonica*.

The stated bases for this petition are:

1. *Z. japonica* is protected by county, state and federal laws.
2. Virtually no difference in functions between *Z. japonica* and *Z. marina* (native eelgrass).
3. Claims of economic losses to aquaculture industry are not supported in Department of Revenue records.
4. Noxious weed listing of *Z. japonica* and eradication efforts threaten existence of native eelgrass (*Z. marina*).
5. Shoreline Management Act protects both species of eelgrass.
6. Scientists and DNR have concerns over efforts to eradicate *Z. japonica*.
7. Listing by the State Noxious Weed Control Board was not based on science, but politics.
8. Scientific evidence shows that *Z. japonica* performs vital biological functions in Willapa Bay for tens of thousands of migratory waterfowl, invertebrates to salmon, herring and ESA listed green sturgeon.

### What we know about *Zostera japonica*

- Native to Asia, including eastern Russia, China, Japan, Korea, Taiwan and Vietnam (WSNWCB 2011).
- Not native to west coast of N. America (Ruesink et al. 2010, Thom et al. 2011, Shafer et al. 2013).

- Distribution on the west coast of N. America extends from British Columbia to Humboldt Bay, California.
- Currently listed as a Class C noxious weed in Washington, a Class A noxious weed in California (eradication efforts are underway), but not listed as noxious in Oregon.
- Coverage in Willapa Bay has expanded
  - 1997 – 6,700 acres (Ruesink et al. 2010 as cited in DEIS for Management of *Zostera japonica* in Willapa Bay, 2014)
  - 2007 – 12,200 acres (Dumbauld and McCoy 2007 as cited in DEIS 2014)
  - 2012 – 18,000 acres (DEIS 2014).
- Coverage in Lower Yaquina estuary (central Oregon coast) has expanded
  - 1998 to 2007 - 400% increase in area (Young et al. 2008).
- Difficult to control due to prolific seed production and perennial rhizomes.
- Colonizes the upper tidal zone, converting bare mud flats into heavily vegetated areas.
- Having a strong, negative impact to the shellfish industry, particularly in the production of hard-shell clams in Willapa Bay.

Staff comments in response to the stated reasons for submitting this petition:

1. (and #5) The Department of Ecology administers the Shoreline Management Act in partnership with local governments, who develop local plans to protect shoreline ecological functions. The Shoreline Master Program guidance to local governments is being updated to state that invasive, non-native species should not be protected under local shoreline master programs.

NOAA and NMFS consider sea grasses as habitat of special concern. Executive Order 13112 disallows promoting the spread of invasive/noxious plants.

2. *Z. japonica* does serve some of the same functions as native eelgrass by providing three-dimensional structure and cover for several species. It does not serve the same function for all species, however, due to its location higher in the intertidal zone than native eelgrass. *Z. japonica* can adversely affect valuable ecological functions of normally un-vegetated mudflats that are historically present in the northwest (Harrison 1987, Posey 1988, Nomme and Harrison 1991).
3. *Z. japonica* colonization in Willapa Bay is estimated to be the cause of an average 44% reduction in mean yield clam production on beds in current cultivation (Fisher et al. 2011), and an estimated 3,000 acres not cultivated due to *Z. japonica* infestation (EIS 2014).
4. (and #6.) The Department of Agriculture's State Noxious Weed Control Board listed *Z. japonica* as a Class C noxious weed statewide in January 2013. This listing does not require landowners to control *Z. japonica*, but it does allow the Department of Ecology to issue a permit for the application of imazamox.

Imazamox is considered by EPA to be a reduced-risk herbicide, and has been authorized by EPA for use in marine/estuarine environments. This herbicide is described as practically non-toxic to animals, highly water soluble, adheres poorly to all soil types, and breaks down rapidly in the presence of light (EIS 2014, EPA Pesticide Fact Sheet 1997).

The Department of Ecology's permit allows for the use of imazamox only on commercial clam beds in Willapa Bay. This permit requires application of imazamox to occur at low tide when plants are exposed, and to maintain a minimum buffer distance of 10m from native eelgrass. Application of this herbicide will be monitored for potential impacts to native eelgrass and efficacy. WDFW and Department of Ecology scientists will be on a team that will evaluate the monitoring results and identify if there are unintended impacts.

7. The State Noxious Weed Control Board does not typically rely on PHS information to inform listing decisions. Although we can't comment on the basis of the Weed Board's decision to list *Zostera japonica* as a Class C noxious weed, we can speak to the rationale for excluding *Zostera japonica* from our PHS list.

In February 2011, Representative Blake asked WDFW why the PHS listings protected non-native eelgrass, including *Z. japonica*. We informed Representative Blake that PHS information did not protect *Z. japonica* because only native marine vegetation is referenced in PHS. The emphasis on native marine vegetation protection is due to the uncertainties associated with impacts to fish and wildlife habitat from non-native marine vegetation. In response to Representative Blake, and to clarify the intent of PHS to protect native marine vegetation, we revised the listing of eelgrass species to specifically exclude *Zostera japonica* as a priority habitat needing protection.

We understand that two years after clarifying the PHS listing, the State Noxious Weed Control Board listed *Z. japonica* as a Class C noxious weed on commercially managed shellfish beds. One year after that, in January 2013, that Board expanded the Class C listing statewide.

8. *Z. japonica* offers some benefits to the estuarine habitat because it provides waterfowl foraging habitat (Baldwin and Lovorn 1994), and serves as habitat to an abundance and diversity of species that live beneath the surface of the sediment (Ferraro et al. 2011).

This non-native eelgrass is detrimental to near-shore habitat and the animals that depend on that habitat due to its effect on sediment trapping/change in sediment texture (Bos 2007), conversion of historic mudflat habitat (Posey 1988), and decrease in green sturgeon feeding habitat (K. Patten per. obs.). *Z. japonica* may out-compete native eelgrass in disturbed areas (Bando 2006).

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**Policy issue(s) you are bringing to the Commission for consideration:**

In response to the petition to protect *Zostera japonica* from the herbicide imazamox, should the Commission:

- a) Accept the petition and change the current PHS listings to include non-native marine vegetation and add *Z. japonica* to the WDFW Priority Habitat Species list, or
- b) Deny the petition in writing, stating the reasons for denial, addressing the specific concerns raised by the petitioners.

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**Public involvement process used and what you learned:** N/A

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**Action requested:**

Department staff requests that the Commission deny the petition and maintain the current protection of only native marine vegetation in the Priority Habitat and Species listing. If this action is accepted, staff would continue to advocate for cautious management of *Z. japonica*, supporting its removal in areas where the distribution is having detrimental impacts on the near-shore habitat, and advising cautious use of removal treatments to protect native eelgrass.

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**Draft motion language:**

I move to **deny** the petition to protect *Zostera japonica* (from the herbicide imazamox) and to list it on the WDFW Priority Habitat and Species List.

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**Justification for Commission action:**

Although *Zostera japonica* provides habitat for waterfowl and some infaunal species, it is a nonnative, invasive estuarine species that has been spreading on the West Coast. Its population and areal coverage has recently expanded in Willapa Bay, it is difficult to control due to prolific seed production and perennial rhizomes, and it colonizes the upper tidal zone, converting bare mud flats into heavily vegetated areas. These mud flats provide habitat for native shellfish and other invertebrates, which are in turn an important part of the marine food web. *Zostera japonica* is currently listed as a Class A noxious weed in California, where eradication efforts are underway.

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**Communications Plan:** N/A

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Form revised 12/5/12