From:	jerry johannes
To:	Hamel, Kathy (ECY)
Subject:	imazamox and Z. japonica
Date:	Friday, March 09, 2012 2:56:58 PM

Dear Kathy--

Thank you for the opportunity to provide comments on the proposal to use imazamox to control zostera japonica on commercially managed shellfish beds.

At this time, it is not appropriate to approve the general permit.

The paramount reason is that imazamox will destroy zostera marina just as easily as it destroys japonica. This chemical is subject to movement by everchanging tidal flows, winds, and waves. It very well may leak onto beds of marina that grow coincidentally with japonica.

Imazamox has not been well studied in marine waters, and may affect algae (more research is needed). Imazamox needs to combine with surfactants to be effective. Surfactants are not only toxic themselves to aquatic organisms, but also may have synergistic effects when combined with pesticides and herbicides (from Preliminary Survey of Pyrethroid Pesticides and Surfactants in San Juan County Surface Waters [page 3] by Barsh, Bell, Halliday, Clifford & Mottet). Imazamox has the potential to develop resistant weed populations ("superweeds")--this potential is relatively great and can happen quite quickly. An EIS is called for here because of the adverse impacts.

Pages 3 and 4 of the workshop on japonica here http://www.wsg.washington.edu/mas/pdfs/Machetal2010ZJWkshopRep.pdf delineate some of protections for zostera. They include provisions under both the SMA and GMA. There are federal, state and local laws, regulations, and codes that protect zostera. In addition, under the federal Clean Water Act (CWA), section 404, eelgrass is a protected species. Under the federal Magnuson/Stevens Act eelgrass is considered Essential Fish Habitat (EFH) and thus protected.

There are a plethora of protections for zostera. We need to monitor and enforce what is already on the books.

In the study here http://www.int-res.com/articles/meps/103/m103p119.pdf Baldwin and Lovvorn document the *millions* (my italics) of use days that japonica provides for our migratory waterfowl. This usage pattern is duplicated many times throughout a myriad of bays in our marine waters, including Willipa Bay. On page 125 of the study it relates that japonica generates substantial inverterbrate production that feeds both fish and waterbirds. It is documented that herring spawn on japonica, so spawn would be destroyed. Forage fish and our ESA listed salmon use japonica for feeding and refuge as well as nursery areas.

Also, on page 125 (right column) the researchers note that japonica may be an unusual example of an introduced species that benefits major components of an ecosystem.
That really sums it up.

This application for a general permit needs to be denied.

Regards,

Jerry

Jerry Johannes
Anderson Island Tidelands Group