COALITION
To Protect Puget Sound Habitat

BEFORE THE NOXIOUS WEED CONTROL BOARD
FOR THE STATE OF WASHINGTON

IN THE MATTER OF THE PETITION FOR RULEMAKING TO AMEND WAC 16-750-015 State Noxious Weed List – Class C Noxious Weeds	**NO.** **PETITION OF COALITION TO PROTECT PUGET SOUND AND ROBERT KAVANAUGH**

Pursuant to RCW 34.05.330, Petitioners COALITION TO PROTECT PUGET SOUND and ROBERT KAVANAUGH (collectively, Petitioners) file this Petition for Rulemaking to amend WAC 16-750-015 State Noxious Weed List – Class C Noxious Weeds.

I. Petitioners Contact Information

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II. Responsible Agency

With the enactment of RCW 17.10, the Legislature sought to limit economic loss and adverse effects to Washington's agricultural, natural, and human resources due to

the presence and spread of noxious weeds on all terrestrial and aquatic areas in the state. RCW 17.10.010. To facilitate this mandate, the Legislature created a State Noxious Weed Control Board (Board). RCW 17.10.030. One of the primary functions of the Board is to annually adopt the State Noxious Weed List pursuant to the guidelines adopted by the Board. RCW 17.10.080(1); .080(2); WAC 16-750-22.

The State Noxious Weed List was last adopted by the Board on December 11, 2013 and was published in the Washington State Register, Issue 13-01, becoming effective on January 12, 2013. WSR 13-01-038. With this adoption, the Board amended its classification of Japanese Eelgrass as a Class C noxious weed when located on commercially managed shellfish beds to a Class C noxious weed with no restrictive language. WSR 13-01-038.

III. Action Requested

As permitted by RCW 34.05.330(1), Petitioners seek the amendment of an existing rule, WAC 16-750-015 State Noxious Weed List – Class C Noxious Weeds. The Petitioners seek to amend this rule by deleting Japanese Eelgrass as a Class C Noxious Weed. Japanese Eelgrass, due to its many beneficial characteristics, should not be listed as a noxious weed – of any classification – at all.

IV. Basis for Proposed Amendment

RCW 17.10.010(1) defines "noxious weed":[1]

> A plant that when established is highly destructive, competitive, or difficult to control by cultural or chemical practices.

[1] Aquatic plant species may also be included as a noxious weed. RCW 17.10.010(10).

There are three types of noxious weeds – Class A, Class B, and Class C. RCW 17.10.010(2) provides:

> a) Class A consists of those noxious weeks not native to the state that are of limited distribution or are unrecorded in the state and that pose a serious threat to the state;
> b) Class B consists of those noxious weeks not native to the state that are of limited distribution or are unrecorded in a region of the state and that pose a serious threat to that region;
> c) Class C consists of any other noxious weeds.

Pursuant to RCW 17.10.080, the State Noxious Weed Control Board adopts the State Noxious Weed List annually. In making modifications to the list, the Board is to consider data from scientific sources regarding any invasive and noxious qualities of the species and from existing positive economic benefits before taking any action. RCW 17.10.080; WAC 16-150-022.

In 2011, a proposal was submitted to the Board to include *Zostera japonica* (Japanese Eelgrass) as a Class C noxious weed on the State Noxious Weed List. On December 15, 2011, the Board approved this proposal, classifying, for the first time, Japanese Eelgrass as a Class C noxious weed but limiting this classification to commercially-managed shellfish beds. WSR 12-01-050, effective January 15, 2012. As required by RCW 17.10.080, the Board provided its rationale for limiting the location of this listing:

> *Zostera japonica* has been proposed as a Class C noxious weed because it is non-native, difficult to control, and is negatively impacting the shellfish industry. Because this species is thought to also have some beneficial uses in unmanaged tideland areas, the Washington State Noxious Weed Control Board is considering the modified listing of *Z. japonica* as a Class C noxious weed *on commercially managed shellfish beds only* at this time.

September 1, 2011 Written Findings of the Board (emphasis in original).

In 2012, the Pacific County Noxious Weed Control Board presented a proposal to the Board to list Japanese Eelgrass as a Class C weed for all lands in Pacific County. The Pacific County Board asserted that while it "was a good decision to at least list all commercial shellfish properties" the restrictive listing did "not serve the needs of all property owners and land managers who wish to control Japonica on their property in Pacific County." Pacific County Board Proposal (January 13, 2013).

In the July 24, 2012 Noxious Weed Board Committee meeting, the following draft minutes stated: "In the Japanese eelgrass wording on proposal-Mike Nordin—proposal is to strip modified language from listing; committee talked about lack of new research."

Despite the Board's Advisory Committee recommendation to not adopt the proposal due to a lack of new scientific data and public testimony in opposition, on December 11, 2012 the Board approved the request, deleting the shellfish bed limitation from the State Noxious Weed List. WSR 13-01-038, effective January 1, 013; October 8, 2012 News Release RE: November 2012 Public Hearing in Yakima, WA. Pursuant to RCW 34.05.325(6), the Board prepared a Concise Explanatory Statement that set forth its reasons for adopting the 2012 modifications to the State Noxious Weed List. The Board stated:

> The WSNWCB adopt this proposal to provide support to the shellfish industry and to Pacific County Noxious Weed Control Board, which submitted the proposal. Although Japanese eelgrass has been documented to have some beneficial values, it is still nonetheless a nonnative, invasive estuarine species that has been spreading on the West Coast. It is currently listed as a Class A noxious weed in California, where eradication efforts are underway because of its still-limited populations there. In Washington, its population has recently expanded in Willapa Bay, and it is difficult to control due to prolific seed production and perennial rhizomes. It colonizes the upper tidal zone, converting bare mud flats into heavily vegetated areas. Research indicates that Japanese eelgrass has

> numerous biotic and abiotic interactions – both beneficial and detrimental – in the intertidal zone, and research is still ongoing. However, it is clear that Japanese eelgrass is having a strong, negative impact to the shellfish industry, particularly in the production of hard-shell clams. Many of the shellfish growers expressed their firsthand observations that Japanese eelgrass is also harmful to the mudflat ecosystems in and around their shellfish farms. Because Japanese eelgrass is a nonnative, invasive species that is an economic concern to shellfish growers, a Class C listing is appropriate. The WSNWCB does not require the control of Class C noxious weeds, although county weed boards have the option of requiring control. The Class C listing allows the WSNWCB to educate the public about the complexities of Japanese eelgrass, including the impacts it's having on the shellfish industry and how it differs from the valuable native eelgrass, Zostera marina.

December 11, 2012 Concise Explanatory Statement.

However, the Board, contrary to RCW 17.10.080(5), did not provide specific written findings for this listing like it did in 2011 to support the Noxious Weed List published in WSR 12-01-050. According to the Board's executive secretary, Alison Halpern, no findings were issued in 2012 nor were the prior findings updated apparently because there was no new information to support new findings. Thus, the findings remain those from 2011.

1. Japanese Eelgrass Provides Numerous Beneficial Functions and the Board failed to Adequately Consider Scientific Evidence in this regard.

As the Board noted in its 2011 Written Findings, Japanese Eelgrass benefits the aquatic environment:

> Japanese eelgrass provides habitat functions similar to native eelgrass that are likely beneficial to some organisms, as it creates three dimensional structural complexity not present on bare mudflats … The structural complexity and epiphytic food resources attached to the grass are attractive to fish and other organisms and the structure provides predator protection and potential spawning substrate.

And, the Board further recognized that there were unknowns (both positive and negative) about Japanese Eelgrass's function within the intertidal zone.[2]

Both in 2011 and in 2012, scientific information clearly demonstrated the ecological benefits derived from Japanese Eelgrass. Yet, the Board discounted those benefits in exchange for economic benefits to small percentage of Washington's economy. The benefits of Japanese Eelgrass clearly outweigh the economic gain from the shellfish industry as documented below.

Study Documentation

Japanese eelgrass is considered beneficial fish habitat, and provides many of the same functions as native eelgrass (Precision Identification, 2004). Faunal diversity is greater in *Z.japonica* beds when compared to unvegetated substrates (Posey, 1988; Williams, 2007). A study done by de Graaf (2006) found a positive correlation between the existence of Japanese eelgrass and an abundance of Asain hornsail and mudsnail. In the Trent River Delta on Vancouver Island 48 % of 38 000 birds representing 124 species were observed utilizing Japanese eelgrass beds for feeding, foraging, or preening (Wright, 2002). In fact, a study done by Lovvorn and Baldwin (1996) show dabbling ducks on the Fraser River Delta avoiding native eelgrass and mainly eating *Z. japonica* (Table 3). *Z. japonica* leaves are important food sources to American wigeon and brant geese (Figure 3), and the seeds are favoured by Northern Pintail, whereas Green-winged teal prefer amphipods over both *Z. marina* and *Z. japonica* (Lovvorn & Baldwin, 1994). While foraging is usually done at low tide, waterfowl can reach Japanese eelgrass leaves at depths of 0.5m, and American wigeon often utilize the floating leaves that get released from the sediment when mallards and Northern pintails dig through the eelgrass to get to the eelgrass rhizomes and invertebrates (Lovvorn & Baldwin, 1994).

[2] It is interesting to note that one of the "unknown concerns" about Japanese Eelgrass is its potential to change biological communities – benefiting some while impacting others. Board Written Findings (2011). In other words, that the recruitment of Japanese Eelgrass results in a modification of the intertidal zone which leads to a change in the biological community. This, of course, is exactly what aquaculture (specifically geoduck aquaculture) does when it introduces a hardscape of tubes.

Baldwin and Lovvorn note that Japanese eelgrass had spread to Puget Sound and south to coastal bays in Oregon and likely plays a similar vital role as valuable waterfowl habitat in those areas as well.

As cited in the Baldwin and Lovvorn study, in pertinent part: Although Zostera Japonica was introduced inadvertently, it may be an unusual example of an exotic species being generally beneficial to major components of an ecosystem. Z japonica is now a principal food for migrating and wintering waterfowl….Z japonica is also adding many metric tons of organic matter to the detrital system…. and birds grazing. Z japonica might bypass the slow decomposition process by excreting several tons of fecal nitrogen….

According to the United States Fish and Wildlife Service March 7, 2012 letter to the Department of Ecology: "Nonnative Japanese eelgrass appears to provide physical, intertidal structure and habitat functions similar to native eelgrass, and is utilized by fish, invertebrates, waterfowl, and other fauna, including as spawning substrate for native, marine forage fish..." "we suggest that additional research is needed."

2. In listing Japanese Eelgrass, the Board Failed to take into consideration the Adverse Impacts that would arise from its listing decision. The Board appears to have ignored the following documentation and studies.

Adverse Impacts

A. Waterfowl

1. Majority of winter forage for several waterfowl species is subject to removal. Up to 100,000 waterfowl can lose up to 85% of their winter forage for several months. This equals millions of waterfowl use days eliminated.

Ref. a. Baldwin and Lovvorn 1994 on Boundary Bay B. C.
b. Testimony of Barkhurst, WA State Weed Control Board testimony Nov 2011

. 2. North American Wildlife Management Plan (NAWMP) goals are already being chronically unmet (plan shows American Widgeon, Northern Pintail, and Pacific Brant usually below goals). Willapa Bay and other WA estuaries are vital to winter several hundred thousand of these birds.

American Widgeon, a species already not meeting NAWMP goals will have the highest amount of forage removed, when it can least afford it. This is the main wintering species where 85% of food intake in coastal bays is Zostera japonica. Seven to ten million waterfowl use days can be normally expected due to Zostera japonica in Willapa Bay. Zostera japonica, their main food source, is now open to unlimited control (removal).

Ref. a. NAWMP revised 2012.
b. WDF&W waterfowl surveys Fall/Winter 2012.
c. USFWS and WDFW aerial surveys of Willapa Bay, historical and 2012-13.

d. Charts of Boundary Bay and Willapa Bay showing much larger tideland area in Willapa Bay than Boundary Bay

3. Key waterfowl forage can now be removed from remaining half of Willapa Bay where there are concentrated bird populations. Due to spartina eradication and intensive shellfish aquaculture in Cells 1 and 2, Willapa Bay Cells 3 and 4 contain 60-80% of wintering waterfowl. No consideration has been given by the Board to eliminating this major refueling stopover for waterfowl and their predators.

Ref. a. WDFW aerial surveys of Willapa Bay 2012-13 showing 60 to 80% of waterfowl over Zostera japonica beds in Cell 3 and Cell 4 in Willapa Bay. Cells 1 and 2 show no more than 30% of the birds.

4. Pacific Brant, which used to inhabit other areas of Willapa Bay, is open to loss of its final wintering grounds. Brant are now 90% concentrated in Cell 2 of aerial surveys in Willapa Bay and Cell 2 contains clam beds frequently discussed by Taylor Shellfish as a target for Zostera japonica removal. This cell has a high degree of overlap and mixing of both Zostera species and Pacific Brant eat both species. We have seen no consideration of these scientific concerns by the Weed Board when issuing blanket "everywhere" removal with no limits. These impacts may be imminent in any area of the coast as there was no scientific deliberation of this issue before the Weed Board listed Zostera japonica as a Class C everywhere.

Ref. a. WDFW aerial surveys 2012-13.
b. 2011 State Weed Board Concise Explanation Statement calling for more scientific deliberation.
c. Dumbald and Echeviera 2006 showing eelgrass beds of Z. marina and and Z. japonica in Willapa Bay off Long Beach Peninsula, (Cell 2 in above surveys).

5. Cumulative effects of unlimited removal of Zostera japonica and other associated marine forage for waterfowl have not been considered. At the same time this listing is in effect, USFWS and WDFW have embarked on a program of draining freshwater wetlands adjacent to marine areas (Willapa National Wildlife Refuge, Nisqually Delta, Johns River). These draining activities were to enhance salmonid habitat, but they nonetheless remove millions of waterfowl use days and transfers them onto tidelands. These actions can push more waterfowl onto bays in search of brackish water forage at the same time Zostera japonica is being eliminated.

These actions can cause overgrazing of tops of Zostera japonica by widgeon and unmeasured grubbing of the rhizomes by pintail and mallard, resulting in chronic lack of plant re-growth in spring. Chronic loss of carrying capacity for waterfowl is the expected result.

Ref. a. Testimony of R. P. Barkhurst, Wa Weed Control Board, 2011.
b. Discussion and hand delivered paper to Ecology by R. P. Barkhurst in working meeting in Olympia, Feb 201.

B. Fish

6. Removal of eelgrass cover and forage grown in eelgrass is likely to inhibit recovery of chum salmon. Chum salmon, that are highly dependent on estuarine habitat in Willapa Bay, are at low numbers, with no sport or commercial retention allowed. The effects of removing eelgrass cover and forage grown in eelgrass has not been evaluated, especially connectivity concerns and in the sides of channels where juvenile salmonids hold and transit during acclimatization to salt water. Other species routinely do not meet minimal goals for natural spawning and recovery is less likely with no eradication limits and industry self monitored removal of Zostera japonica.

Ref. a. The Jade Coast, by Butler.
b. North of Falcon public meetings in Raymond,WA 2012, 2011 status of runs, plans for seasons and limits, record of meeting escapement goals.
c. WDFW 2011, 2012 fishing regulations.
d. WCSSP (Washington Coast Sustainable Salmon Partnership) study of preferred salmon smolt habitat in Gray's Harbor study, 2011.

7. Removal of Zostera japonica will reduce documented spawning substrate for Pacific herring (Clupea pallasii), an important forage fish within the local marine food web. According to the Puget Sound Partnership, target goals include an increase in the overall amount of spawning Pacific herring throughout Puget Sound to about 19,000 tons.

Ref. a.. 10-30-12 Letter from Daniel Penttila, Washington Forage Fish Expert
b. 10-31-11 Letter from Marc Daily, PSP Deputy Director

C. Other

8. Elimination of Zostera japonica puts at risk the elimination of nearby native eelgrass, Zostera marina. Risk of damage, elimination of nearby native eelgrass by either misidentification of Z. marina or treatment effects extending beyond the area targeted for control, whether through mechanical or chemical methods. This listing jeopardizes achieving the Puget Sound Partnership goal of a 20% increase in Zostera marina eelgrass beds.

9. Willapa Bay natural ecological functions have been significantly altered by the shellfish industry already spraying Carbaryl to eradicate ghost/mud shrimp and Glysophate & Imazapyr to eradicate spartina. Pesticide sprayed to eradicate spartina has resulted in top stubble, but massive root systems are still evident. These root masses are slowly releasing significant amounts of fine sediment. There is no evidence that Zostera species have recolonized these areas. There are no published reports or monitoring that has evaluated the effects of these prior spray permits on ESA and non ESA listed species.

Ref. a. Testimony of WDFW before Washington Weed Control Board 2012 stating Willapa Bay has not recovered from spartina efforts.

b. Observations and photographs of R. P. Barkhurst in Willapa Bay tidelands in Cell 4, 2012 and 2013 that show spartina root mounds un-colonized by either Zostera species, showing extensive duck, goose, brant pits and grubbing of rhizomes of Zostera japonica.
c. Photographs shown at Dept of Ecology public meeting in Raymond, Wa. Dec 6, 2012, and at meeting with WDFW, Feb 6, 2013.
d. Dumbald and Echeviera, 2006, fig. showing high and medium density distribution of Zostera sp. in Willapa Bay.
e. Subsequent observations and photographs by R. P. Barkhurst 2012, 2013 showing Zostera missing from a 100 acre public tideland in Cell 4.

10. Removal of Zostera japonica will eliminate its function for erosion control.

11. Removal of Zostera japonica will reduce the amount of seagrass available to potentially control ghost shrimp without chemical means. The Washington Attorney General already has described Willapa Bay as a "chemical soup." (Cohen vs. Washington State).

12. Removal of Zostera japonica reduces the amount of seagrass available to sequester carbon which contradicts the shellfish industry goal of reducing localized ocean acidification.

3. In listing Japanese Eelgrass, the Board Failed to give adequate weight to public and agency concerns. The following comments received by the State Weed Board based on scientific evidence show that the State Weed Board only considered the economic argument of the industry.

A. Washington Department of Fish and Wildlife, October 25, 2012: "The Department is strongly concerned that the current proposal, given its significantly increased geographic extent, could result in substantial impacts to those species of birds and fish that utilize eelgrass for feeding, rearing and as physical habitat. Additionally, we are concerned that implementation of a statewide Class C listing for Z. japonica would significantly increase the potential for adverse impacts to native eelgrass (Zostera marina)….The importance to Z. japonica to wintering waterfowl has been well documented.

B. Washington Department of Natural Resources, dated October 29, 2012:
To date, there is limited scientific evidence that demonstrate the ecological effects of Z. japonica. Research has found that Z. japonica provides many of the same basic habitat functions as Zostera marina (Mach et al, 2010).

In areas where the two species occupy similar vertical zones and co-occur, the result can form a mixed Z. japonica and Z. marina bed or a dominant species

with patches of the other species. Removal of Z. japonica may detrimentally affect Z. marina.

C. Salish Sea Biological, Dan Penttila, October 30, 2012:
Sea-grasses of all species in this region provide a sizeable suite of ecological functions to the local marine ecosystems, including physical habitat context, larval settlement substrate, carbon fixation/sequestration, organic detritus production, oxygen generation, and herring spawning substrate. These functions can clearly be ascribed to the Japanese eelgrass as well as the native eelgrass, *Zostera marina*, the latter of which is afforded, at least on paper, "no-net-loss" regulatory protection by local, state, and federal agencies. In fact, the latter species, despite regulatory protections, is already being damaged by on-going commercial shellfish aquaculture practices both in various estuarine habitats throughout Washington State and southern British Columbia.

I can comment in detail on the usage of *Zostera japonica* as spawning substrate for Pacific herring (*Clupea pallasii*), an important forage fish within the local marine food web. I have inspected the written records of WDFW/WDFW herring spawn surveys undertaken over the last 30+ years in Willapa Bay and adjacent Grays Harbor, and found a number of instances where *Zostera japonica* beds were found to have supported herring spawn deposition, as evidenced by observation of herring eggs attached directly to the plants in-situ. I was lead-worker on most if not all of these surveys and observations. This relatively new evidence of *Zostera japonica's* ecological importance was assembled and distributed to WDFW, Sierra Club and a number of other interested parties in the spring of 2012. I am not aware whether WDOE requested or received such a data package, but it would be available from myself or WDFW for use during the consideration on this proposal. Since the initial documentation of herring spawning usage of *Zostera japonica* in the outer-coastal bays of Washington State, evidence of herring usage of this plant has also been found at several sites in the Puget Sound basin, clearly indicating a region-wide phenomenon. Based on my long personal experience with WDF/WDFW herring spawning survey protocols, I consider it very likely that the usage of *Zoster japonica* by spawning herring is much more widely-occurring throughout the region than agency records currently indicate. WDF/WDFW herring spawn surveys commonly do not approach tideflat-fronted shorelines to depths shallower than about +0' in tidal elevation, as they concentrate on native eelgrass and marine algae beds in search of herring spawn deposits. In so doing, they tend not to sample the main zone of occurrence of *Zostera japonica* in-shore of that depth and thus tend not to have sampled that plant for herring spawning usage. With the advent of *Zostera japonica* eradication proposals in the spring of 2012, after the main herring spawn survey season, WDFW staff were urged to sample that species' microhabitat more frequently in the future, which should increase the frequency of spawning-usage documentation. Meanwhile, past published statements of the lack of

evidence of herring spawning usage of *Zostera japonica* in Puget Sound should be considered incorrect and superseded by more current information. The management significance of the now-widespread observations of herring eggs on *Zostera japonica* within Washington State is that the plant should now be added to the list of near-shore marine plants that comprise "documented herring spawning habitat" and, by that measure, be afforded no-net-loss protection by the WAC Hydraulic Code Rules, the state Growth Management Act, and the state Shoreline Management Act, all of which have herring spawning habitat conservation language within them. This would seem to legally preclude *Zostera japonica* from being purposely eradicated by any party, at least without complete mitigation for purposeful damage to it. So far as I am aware, there have been no suggestions of consideration of full mitigation for proposed damage to *Zostera japonica* beds by this proposal, let alone mitigation for past damages to *Zostera* beds by the parties involved in this proposal.

Another field of inquiry and concern, pertaining to the positive ecological functions of *Zostera japonica,*for which there seems to be little or data at present, is the degree to which the plant promotes the establishment and propagation of communities of those small epibenthic invertebrates which serve as seasonal food for out-migrating juvenile salmonids throughout the shorelines of Washington State. *Zostera japonica* occupies a growth zone astride a major migratory pathway of out-migrating salmonids. Before eradication of this species is contemplated, as triggered by the proposed "noxious weed" listing, rigorous studies should be undertaken to document the salmonid-food communities within the plant's beds, compared to adjacent barren middle intertidal mudflats. Note that these investigations should be undertaken by research institutions without fiscal or philosophical connections to the commercial shellfish industry. It may well be that the presence of beds of *Zostera japonica* promotes a greater abundance of both salmonid food items and protective cover for the fish themselves, thus promoting the survival of a suite of economically important species during a period when the restoration and maintenance of salmon populations is and will be into the foreseeable future a major regional undertaking. Also, the net value of the conserved salmonids may outweigh the economic value of the exotic cultured shellfish being promoted by this proposal, adding justification to the perhaps novel concept of NOT treating the region's marine near-shore as one would a typical terrestrial, mono-culture, commodity-producing farm plot, where it has become accepted that fish and wildlife habitat values will have been purposely eradicated.

Yet another emerging ecological function fulfilled by seagrasses like *Zostera japonica* now beginning to be recognized as important in the coastal estuaries of the region presently experiencing "ocean acidification" to the alleged detriment of the commercial shellfish industry, is those plant species' enhanced ability to sequester carbon, removing excess carbon dioxide from the atmosphere, and thus possibly reducing localized acidification in the process. It is ironic that the shellfish industry now pleads in certain venues for acidification control measures,

while it itself has had a long history of destroying the very seagrass beds that might have a hand in alleviating that very problem. The proposal to purposely eradicate a carbon-fixing estuarine plant species would seem to obviously run counter to any goal of alleviating acidification.

D. Megan Mach, PHD Candidate, October 31, 2012:
It is likely the structural change *Z. japonica* has on the unvegetated mudflats causes many of the same effects on the epifauna (those organisms living above the sediment like isopods, amphipods and fish) as Pacific Oysters. The only peer-reviewed study to test how fish interact with these habitats compared *Z. japonica* habitat to Pacific Oyster flats and *Z. marina* habitat (Semmens 2008). The study found Chinook Salmon slow their swimming speed in *Z. marina* suggesting they prefer this habitat, while they found no difference between Z. japonica and the Pacific Oyster flats.

Zostera japonica is a nonnative species that has changed estuaries it invades. However, the impact of this nonnative is not always negative. It provides food to migrating birds (Baldwin and Lovvorn 1994) and provides habitat to invertebrate species that are food for commercially important fish species (Thom et al. 1995).

E. James Kaldy, Ph.D.,November 4, 2012: "The presence of *Z. japonica* likely increases the primary production, benthic microalgae colonize seagrasses and in many cases these epiphytes are actually the dominant primary producers (Moncreiff and Sullivan 2001). The leaf surface area of a *Z. japonica* bed provides much more epiphyte substrate than a comparable *Z. marina* bed. One of the critical pieces of information missing in the assessment of *Z. japonica* is a critical evaluation of the species that utilize this habitat relative to *Z. marina*. In a recent peer reviewed report, Lamberson et al. (2011) observed bird foraging in seagrass habitat and concluded there was no evidence to suggest that birds are negatively impacted by the presence of *Z. japonica*. Other recent work concluded that benthic macrofaunal species richness, abundance and biomass in *Z. japonica* habitat was greater than or equal to that in oyster, mud shrimp or *Z. marina* habitat (Ferraro and Cole 2012). Benthic invertebrate community composition, abundance, species richness, and diversity associated with patches of *Z. japonica* and *Z. marina* in Washington were similar (Hahn 2003). Although anecdotal reports suggest that fisheries species utilize *Z. japonica*, I am not aware of any published studies that have critically evaluated fisheries species (e.g. salmonids, herring, Dungeness crab, perch, etc.) utilization of *Z. japonica* in comparison to *Z. marina*. However, work in Europe with the ecologically similar *Z. noltti* has found that a variety of species utilize this habitat when flooded including spawning herring (Polte and Asmus 2006a, b). Semmens (2008) concluded that salmonids had a preference for *Z. marina* over other intertidal habitats but was based on a limited sample size of 17 fish. This brief synopsis of peer reviewed publications suggests that *Z. japonica* is an important contributor to estuarine ecosystem services with respect to primary production, bird habitat, invertebrate communities and fish habitat.

Listing *Z. japonica* habitat as a noxious weed allows the use of commercial Herbicide applications to estuarine areas, despite inadequate testing and quantification of the ecological effects. Because *Z. japonica* is currently listed as a Class C Noxious weed on shellfish beds in Washington, commercial shellfish growers can use industrial methods to control the plant. Washington Department of Ecology is actively working on developing a National Pollutant Discharge Elimination System (NPDES) permit for the use of the herbicide Imazamox to control *Z. japonica* on commercial shellfish beds in estuarine waters. Imazamox is registered for use in the aquatic environment by the US Environmental Protection Agency (US EPA 2008), despite the lack of evidence for efficacy on estuarine plants and major data gaps with regard to effects on estuarine/marine fish, shrimp and mollusks (US EPA 1997).

Finally, it is important to note, that listing *Z. japonica* as a noxious weed is diametrically opposed to national and international seagrass conservation efforts (Orth et al. 2006) and may have legal ramifications. There are several existing Washington State statutes that appear to be in direct conflict, since there are statutes that protect *Zostera* species as critical habitat. Consequently, by listing *Z. japonica* as a noxious weed Washington agencies appear to be choosing to ignore state statutes. Likewise, Federal laws and regulations may also come into play since seagrasses are generally considered essential fish habitat under the Magnuson-Stevens Act. It is my opinion, that listing *Z. japonica* as a noxious weed is not supported by the available scientific data. The unknown economic and ecological costs associated with mechanical and or chemical removal do not outweigh the ecological benefits and as a result listing as a noxious weed is not justified at this time.

4. In listing Japanese Eelgrass, the Board acted contrary to other State and Federal Regulations that seek to protect Eelgrass.

According to the Board, Zostera japonica written findings were primarily based on excerpted material from the Washington State, Zostera japonica Workshop (Mach et al. 2010) and an Environ report. The Workshop report included the following legal regulations:

A multitude of existing state and federal regulations seek to protect eelgrass due to the beneficial function it provides within the aquatic ecosystem. Under Washington's Hydraulic Code Rules, WAC 220-110-250 defines Saltwater Habitats of Special Concern and seeks their protection. It states, in relevant part:

> In the following saltwater habitats of special concern, or areas in close proximity with similar bed materials, specific restrictions regarding project type, design, location, and timing may apply …
>
> (3) The following vegetation is found in many saltwater areas and serves essential functions in the developmental life history of fish or shellfish:
>
> (a) Eelgrass (Zostera spp);
> …

WAC 220-110-250.

The Shoreline Management Act, RCW 90.58, Washington's overarching framework for the protection, preservation, and restoration of the ecological functions and values of Washington's shorelines, defines Critical Saltwater Habitats and mandates protection:

> Critical Saltwater Habitats include all … eelgrass beds … Critical saltwater habitats require a higher level of protection due to the important ecological function they provide … effective protection and restoration of critical saltwater habitats should integrate management of shorelines as well as submerged areas.

WAC 173-26-221(2)(c)(iii)(A).

> Master programs shall include policies and regulations to protect critical saltwater habitats and should implement planning policies and programs to restore such habitats …

WAC 173-26-221(2)(c)(iii)(B).

As noted above, the Shoreline Management Act is focused on protecting and preserving Washington's shorelines for generations to come. Therefore, the Shoreline Management Act, through its implementing regulations, requires no net loss of ecological function. WAC 173-26-186(8). As for aquaculture, which the Board cited as a basis for its action, a local jurisdiction's shoreline regulations should not allow it to be

permitted in areas where it would result in a net loss of ecological functions or adversely impact eelgrass. WAC 173-26-241(3)(b)(i)(C).

The Growth Management Act, RCW 36.70A, mandates the designation and protection of critical areas by including the best available science into the decision-making process. RCW 36.70A.170; .172. Fish and Wildlife Habitat Conservation Areas are considered a critical area. RCW 36.70A.030. Pursuant to WAC 365-190-130, the purpose of these areas is to support viable populations of fish and wildlife over the long term via cooperative planning and coordination. WAC 365-190-130(2)(d) specifically lists eelgrass beds as a types of fish and wildlife conservation area.

As to areas under the federal government's control, there are several regulatory measures in place that protect Japanese Eelgrass. These controls include:

Federal

- Army Corps of Engineers, Seattle, Washington – Regional General Permit 6
- Army Corps of Engineers, Seattle, Washington – Regional General Permit 48
- Army Corps of Engineers - Nationwide Permit 48

County/State

- Critical Area Ordinance – Fish and wildlife habitat conservation areas
- Pacific Coast Ground fish Fishery Management Plan
- Habitat Areas of Particular Concern (HAPC) 7.3

All of the above recognize the important eelgrass plays within the saltwater ecosystem. There are other regulations that further support protection of this vital element of the ecosystem. Yet, despite federal and state governmental entities acknowledgment of eelgrass's importance, the Noxious Weed Control Board authorized

the eradication of this Japanese Eelgrass in juxtaposition to these other regulatory structures.

V. Summary and Requested Remedy

The State Noxious Weed Control Board is to adopt a State Noxious Weed List that fulfills the Legislature's intent and is in harmony with other state and federal actions that seek to protect the ecological functions and values of Washington's saltwater shorelines. By listing *Zostera japonica* (Japanese Eelgrass) as a Class C Noxious Weed throughout the saltwater environment, the Board has acted contrary to the Legislature's purpose. The State Noxious Weed Control Board should promptly initiate rulemaking proceedings in accordance with RCW 34.05.320 to amend WAC 16-750-015 so as to delete reference to *Zostera japonica* (Japanese Eelgrass) in its entirety.

Dated this 18th day of April, 2013.

Respectfully submitted,

COALITION TO PROTECT PUGET SOUND HABITAT and Robert Kavanaugh

By: _____
Petitioners Representative: Laura Hendricks