Washington State

Aquatic Nuisance Species Committee

Report to the 2012 Legislature

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On the cover:
Upper left - New Zealand Mudsnails are discovered in Capitol Lake, Olympia, in November of 2009 (Photo by A. Pleus).
Upper right - Chehalis Tribe members Bill Secena and Dennis Cayene on a diver dredge removing Brazilian elodea from the Chehalis River in 2001 (Photo by K. Hamel).
Lower left - Eradication efforts for Eurasian watermilfoil on Capitol Lake, Olympia (Photo by K. Hamel).
Lower right - WDFW biologist Jesse Schultz decontaminating a watercraft found with zebra mussels (Photo by A. Pleus).

EXECUTIVE SUMMARY

This report is submitted to the 2012 Legislature to meet the biennial reporting directive of Chapter 77.60.130 RCW. This is the Aquatic Nuisance Species Committee's (ANSC) sixth biennial report to the Legislature since its establishment under SSB 6294 (2000 c 149).

The ANSC was formed to foster state, federal, tribal, and private cooperation on Aquatic Nuisance Species issues and implement the Washington State ANS Management Plan. Members worked to cooperatively identify and implement tools and management practices to minimize the unauthorized or accidental introduction and spread of nonnative aquatic nuisance species such as *Spartina*, milfoil, Brazilian elodea, invasive tunicates, crayfish, nutria, and zebra and quagga mussels. The ANSC believes that we have met the directives of this legislation and that future work can best be accomplished under the Washington Invasive Species Council. This report summarizes the ANSC's key accomplishments since 2000 and focuses on a set of eight final recommendations including:

1. End the Aquatic Nuisance Species Committee as a legislatively-established independent committee and transition those responsibilities to the Washington Invasive Species Council;

2. Revise/enhance Department of Fish and Wildlife's aquatic invasive species statutes on policy and authorities levels;

3. Continue support and enhance Department of Fish and Wildlife's Ballast Water Management Program;

4. Address Increasing AIS Risks from Hull Fouling;

5. Continue support and enhance the Department of Fish and Wildlife's AIS prevention and enforcement program;

6. Continue support of the Department of Agriculture's Noxious Weed Control Board programs;

7. Continue support of the Department of Ecology's Aquatic Weeds Program; and

8. Continue support of multi-agency *Spartina* eradication programs.

Aquatic Nuisance Species Committee
Report to the 2012 Washington State Legislature

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Aquatic Nuisance Species Committee

Report to the 2012 Legislature

1.0 INTRODUCTION

The mission of the Aquatic Nuisance Species Committee (ANSC) has been to minimize the unauthorized or accidental introduction of nonnative aquatic species with special emphasis on prevention. To accomplish this mission, the ANSC was established by the legislature in 2000 to foster state, federal, tribal, and private cooperation on aquatic nuisance species (hereafter termed aquatic invasive species or AIS) (Appendix A).

The ANSC consists of representatives from most state and federal natural resource agencies, local governments, Tribes, and a variety of stakeholders including conservation and environmental interests as well as industries that may be affected by, or serve as pathways for, AIS (Appendix B). The main objectives have been to improve coordination, collaboration, and communication within its membership and between other groups working on AIS issues.

Since the establishment of the Washington Invasive Species Council (WISC) by the legislature in 2006, the ANSC has been working closely with WISC to integrate information, reports, and recommendations into their statewide strategic planning process. We have found that AIS issues and collaborative forums have evolved significantly since 2000 and the ANSC believes that its efforts are duplicative of WISC and that further work can best be accomplished through the Council.

1.1 ANSC Accomplishments

This is the sixth biennial ANSC report to the legislature since its establishment in 2000. All reports are available for review or download online at www.wdfw.wa.gov/ais. Each report provides lists of accomplishments on the six key duties of the ANSC as directed by the legislature and other AIS priorities for the current biennium and recommendations for the next. ANSC accomplishments are completed through the authority and cooperation of member agencies and stakeholders, and which includes statewide AIS management activities whether or not directed or facilitated by the committee.

Table 1 provides a summary of ANSC member management actions since establishment. Agencies are limited to those specifically identified by statute and species include all aquatic invasive species identified on the WISC management priority species list. Therefore, this is a not a comprehensive summary of all member contributions or species under management. Listed contributions were taken from ANSC and other member reports and could have occurred anytime between 2000 and 2011. Activities are listed that covered at least a 6 month period

(cumulative). Since the future intent of the ANSC is to work under WISC, the table uses only those aquatic species (24) identified on their top 50 list (plus ballast water).

For each species/agency, there are six possible activity codes as follows:

"#" = Coordination: provided active coordination activities on one or more significant groups/committees involving other member agencies and/or stakeholders
"$" = Funding: provided funds ($10K min) to other member agencies and/or stakeholders to accomplish management goals
"C" = Control: provided staff on the ground to conduct prevention, containment, control, or eradication actions
"R" = Research: conducted research on species and/or control methods
"M" = Monitoring/Data management: conducted monitoring activities and/or data management services
"E" = Education/Outreach: provided education, outreach, or training activities to member agencies, stakeholders, and/or public

Table 1. Summary matrix of legislatively-directed ANSC member and partner agency activities by Washington Invasive Species priority management aquatic species.

ANSC Agency	General AIS	Aquatic Plants/Algae										Aquatic Animals													
		Eurasian & Variable leaf milfoil	Brazilian elodea	Hydrilla	Parrotfeather	Spartina	Purple loosestrife	Knotweed	Phragmites	Water Chestnut	Caulerpa	Ballast Water	Zebra/quagga mussels	Green crab	Mitten crab	Tunicates	New Zealand mudsnails	Nutria	Crayfish	VHS virus	Asian carp	Marine clams	Atlantic salmon	N Snakehead	Bullfrogs
Fish & Wildlife	#, C, R, M, E	#, C, M, E	#, M, E	E	#, C, E	#, C, R, M, E	#, C, E	#, C, R, E	#, C, E	E	E	#, $, C, R, M, E	#, $, C, R, M, E	#, $, C, R, M, E	M, E	#, $, C, R, M, E	#, C, R, M, E	#, $, C, E	#, C, E	C, M	C, M	M	M	M	C, M
Ecology	#, $, C, R, M, E	#, $, C, R, M, E	#, $, C, M, E	#, $, C, M, E	#, $, C, R, M, E	C	#, $, M, E	M, E	#, $, M, E	M, E	#	#, $, R, E	M, E			#	R, M, E								
Agriculture	#, $, C, R, M	M	M	M	M	#, $, C, R, M	#, $, C, R	#, $, C, R	M	M						#									
Health												M													
Natural Resources	$, M	$	#, C			$, C, M		#, $, C, E	$, C							$, C									
Puget Sound Partnership	#, $, E					$						#, $	#	$		#, $, E		$					E		
State Patrol		C	C	C	C								$, C, E												
Nox. Weed Control Board	#, $, C, R, M,E	#, $, E	#, $, E	#, $, E	#, $, E	#, $, C, R, E	#, $, C, E	#, $, R, E	#, $, C, E	E															
WA Sea Grant/UW	$, R, E	E	E	E	E	$, E	E	E			E	R, M, E	M, E	E		E	M, E	E	#, R, M		E	E			E
Tribes	C, R, M					C		#, C					M			C									
USFWS	#, $, M, E		$			$, C		$				$	#, $, E	#, $, E	#, E		$, C, M, E	$, C, M			#, M, E		E		
PSMFC	#, $, E					$						#, $, R	#, $, C, R, E		$ E		E						$, C, M		
EPA	#, $, E					$		$				$, R	$	$, R			$									
USGS	M											$, R, M	M, E												

Activity code: # = Coordination; $ = Funding; C = Control actions (prevention to eradication); R = Research; M = Monitoring and/or data management; E = Education/outreach including training

1.2 Summary of ANSC Legislative Directive Accomplishments

1.2.1 ANS Management Plan.

The legislature directs the ANSC to periodically revise the state of Washington Aquatic Nuisance Species (ANS) Management Plan, originally published in June 1998. The ANS Management Plan serves as the ANSC's base work plan and qualifies the state for National Invasive Species Act (NISA) funding through the U.S. Fish and Wildlife Service. A revision was produced in 2001 and has not been changed since. The Washington State plans were considered to be a model for other states to use in the development of their state plans, and the Western Governor's Association contracted with WDFW to assist other states in developing their state plans. Table 2 provides annual funding disbursements WDFW has received since 1998. Federal funding is based on a $1.095 million annual allotment and split equally among states with approved ANS Management Plans. The amount of funding has consistently diminished since 2001 as more state plans have been approved and the federal allotment has not changed. To date, there are 33 individual state plans and three interstate plans sharing in this funding with nine more expected next year (Figure 1).

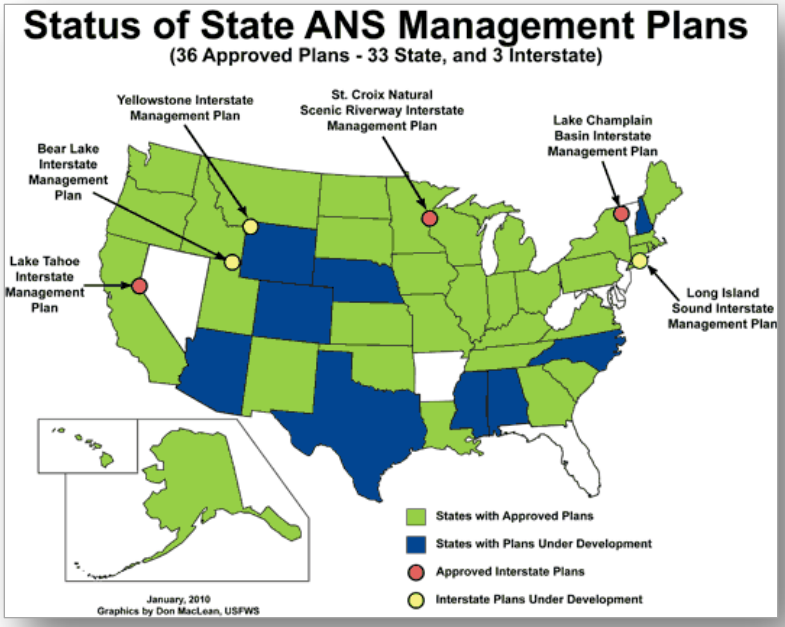

Figure 1. Status of approved state and interstate Aquatic Nuisance Species Management Plans receiving federal NISA funding and pending plans that may be approved in 2012.

Table 2. Federal funding disbursements to WDFW to implement the state ANS Management Plan since 1998.

Year	Disbursement
1998	$ 29,482
1999	$ 32,000
2000	$ 126,177
2001	$ 130,036
2002	$ 100,000
2003	$ 62,800
2004	$ 72,023
2005	$ 70,303
2006	$ 57,600
2007	$ 51,643
2008	$ 43,134
2009	$ 34,677
2010	$ 33,593
2011	$ 29,861

1.2.2 ANS Classification and Regulation.

The legislature directs the ANSC to make recommendations to the legislature on statutory provisions for classifying and regulating aquatic nuisance species. The majority of recommendations have been provided in these biennial reports with implementation of selected recommendations through fourteen legislative acts as provided in Table 3.

Table 3. Legislative ACTS regarding aquatic invasive species by bill, year, description, and original legislative sponsors since 1998.

Legislative Bill and Year	ACT Description	Original Sponsors
SSB 6114 (1998 c 153)	Emergency legislation relating to the prevention and control of nonindigenous aquatic species; established the Zebra Mussel and European Green Crab Task Force led by WDFW.	Senators Jacobsen, Oke, Spanel, Kline, Snyder and Haugen
SSB 6294 (2000 c 149)	An ACT relating to aquatic nuisance species; formally established the ANS Committee under the Washington Department of Fish and Wildlife (WDFW) and set the basic duties as still required today.	Senators Jacobsen, Haugen and Oke
SHB 2466 (2000 c 108)	An ACT relating to ballast water management; set up the basic framework of the state Ballast Water Management Program under WDFW including coastal exchange, inspecting, enforcement, sampling and treatment technology approval elements.	Representatives Regala, Ericksen, Buck, Linville, Anderson, Barlean and Mitchell
SSHB 1499 (2001 c 86)	An Act relating to the regulation of marine fin fish aquaculture by WDFW; provisions for the development of an Atlantic Salmon watch program to monitor escapements from aquaculture facilities and for occurrences of natural production.	Representatives Jackley, Buck, Rockefeller, Eickmeyer, Sump, Doumit, Pennington, and Dunn
SSB 5961 (2001 c 253)	An Act relating to making technical corrections to fish and wildlife statutes; made it illegal to release, plant or place deleterious exotic wildlife – zebra mussels and European green crab – or any aquatic plant within the state.	Senators Jacobsen and Oke
SB 6538 (2002 c 282)	Emergency legislation relating to ballast water; established the Ballast Water Work Group chaired by the governor's executive policy staff; Special emphasis placed on promoting cooperation and coordination with Oregon and the US Coast Guard.	Senators Regala, Jacobsen and Oke
SSB 6553 (2002 c 281)	An ACT relating to invasive aquatic species; gave WDFW authority to: classify nonnative aquatic animal species; prohibit the use or release of prohibited ANS; designate infested state waters; develop a rapid response plan in cooperation with the ANS Committee; prohibit the transportation of any aquatic plant species on state roads; and develop a plan to inspect watercraft.	Senators Poulsen, Oke and Regala
SSB 6329 (2004 c 227)	An ACT relating to extending the date for ballast water discharge implementation; added new member categories and tasks to the Ballast Water Work Group; extended the treatment technology implementation timeline; and added an interim ballast water management report requirement.	Senator Oke

Legislative Bill and Year	ACT Description	Original Sponsors
ESSB 5699 (2005 c 464)	An ACT relating to preventing and controlling aquatic invasive species (AIS) and algae; provided a consistent state funding source through the AIS Prevention, Enforcement, and Freshwater Aquatic Algae Control accounts; funding from fees on recreational boater registration applications and directed to the development and implementation of an AIS Prevention Program through WDFW; an AIS Enforcement Program through the WSP and WDFW; and an Aquatic Algae Control Program through the Washington Department of Ecology.	Senators Oke, Jacobsen, Spanel, Doumit, Kline, Rockefeller and Rasmussen
ESSB 5385 (2006 c 152)	An ACT relating to creating an invasive species council; created the statewide Invasive Species Council under the Recreation and Conservation Office to provide policy level direction, planning, and coordination.	Senators Jacobsen, Oke, Fraser, Swecker, and Kline
ESSSB 5923 (2007 c 350)	An ACT relating to aquatic invasive species enforcement and control; filled a gap in AIS check station enforcement authority; modified WDFW's Ballast Water Management Program statutes as recommended by the Ballast Water Work Group for clarity and consistency.	Senators Swecker, Jacobsen, and Sheldon
SHB 1778 (2009 c 333)	An ACT relating to modernizing certain provisions in Title 77 RCW regarding fish and wildlife; provided enhanced authorities to require any transported watercraft last used in a known infested water body outside of the state to have documentation the watercraft was inspected and found free of AIS or be liable for decontamination expenses; removed the specific due date requirement of the biennial report.	Representative Blake
SSB 5036 (2011 c 169)	An ACT relating to the derelict vessel and invasive species removal fee; removed the expiration date for the WDFW AIS Prevention account, the Washington State Patrol AIS Enforcement account, and the Department of Ecology's Aquatic Algae Control account.	Senators Regala, Swecker, and Fraser
HB 1413 (2011 c 154)	An ACT relating to the expiration date of the invasive species council and account; extended the Washington Invasive Species Council expiration date an additional five years to June 30, 2017	Representatives Blake, Chandler, Tharinger, and Hinkle

1.2.3 Aquatic Noxious Weed Classification.

The legislature directs the ANSC to recommend to the state Noxious Weed Control Board (NWCB) that a plant be classified under the process designated by RCW 17.10.080 as an aquatic noxious weed. Since 2000, 23 species of aquatic noxious weeds have been classified or reclassified by the NWCB (Table 4).

Table 4. Aquatic noxious weeds classified or reclassified by the state Noxious Weed Control Board since 2000.

Year	Species	Class
2000	• Water primrose (*Ludwigia peploides*) • Yellow floating-heart (*Nymphoides peltata*) • Japanese knotweed (*Polygonum cuspidatum*) • Giant knotweed (*Polygonum sachalinense*)	• Class B • Class B • Class C to B • Class C to B
2001	• Yellow floating heart (*Nymphoides peltata*)	• Class B
2002	• Fragrant water lily (*Nymphaea odorata*) • Yellow flag iris (*Iris pseudacorus*)	• Class C • Class C
2003	• Himalayan knotweed (*Polygonum plystachyum*) • Dense-flower cordgrass (*Spartina densiflora*) • Common reed (*Phragmites australis* - nonnative genotypes)	• Class B • Class A • Class C
2004	• Hairy willow-herb (*Epilobium hirsutum*) • Bohemian knotweed (*Polygonum bohemicum*)	• Class C • Class C
2005	• Grass-leaved arrowhead (*Sagittaria graminea*) • Curly-leaf pondweed (*Potamogeton crispus*) • Bohemian knotweed (*Polygonum bohemicum*)	• Class B • Class C • Class C to B
2006	• Floating willow-herb (*Ludwigia peploides*) • Reed sweetgrass (*Glyceria maxima*)	• Class A • Class A
2008	• Variable-leaf milfoil (*Myriophyllum heterophyllum*) • Ricefield bulrush (*Schoenoplectus / Scirpus mucronatus*) • Common cordgrass (*Spartina anglica*) • Common reed (*Phragmites australis* - nonnative genotypes)	• Class A • Class A • Class B to A • Class C to B
2009	• Flowering rush (*Butomus umbellatus*) • Smooth cordgrass (*Spartina alterniflora*)	• Class A • Class B to A
2010	• N/A	•
2011	• Hairy willow-herb (*Epilobium hirsutum*)	• Class C to B
2012	• Japanese eelgrass (*Zostera japonica*)	• Class C (on commercially managed shellfish beds only)

1.2.4 Coordination and Management.

The legislature directs the ANSC to coordinate education, research, regulatory authorities, monitoring and control programs, and participate in regional and national efforts regarding aquatic nuisance species. To this end, most members participate in other associated state, regional and national AIS groups, including: the Washington Invasive Species Council (WISC), WDFW's Ballast Water Work Group, the regional Pacific Ballast Water Group, the national Aquatic Nuisance Species Western Regional Panel, Puget Sound/Georgia Basin International task Force, Lower Columbia River Estuary Partnership, West Coast Governors Agreement on Ocean Health, and the Columbia River Basin 100th Meridian Team.

Since 2000, ANSC members have conducted numerous coordination actions including (report year coverage in brackets):

- Development and implementation of the statewide Aquatic Nuisance Species Management Plan (2002).
- Contracting with the Korean Women's Association and the Indochinese Cultural and Service Center to develop educational brochures on live market pathway invasive species in Cambodian, Laotian, Vietnamese, Korean, Samoan, and Filipino languages (2004)
- Supported establishment of the state Invasive Species Council and development of the statewide strategic Plan (2006, 2008, 2011),
- Development and implementation of the Puget Sound Water Quality Action Team's Puget Water Quality Management Plan (2002),
- Development and implementation of the Columbia River Basin Interagency Invasive Species Rapid Response Plan (2006, 2008, 2011),
- Development and implementation of regional multi-agency management plans for the control and eradication of *Spartina* including the recent incorporation into the regional West Coast Governor's Agreement on Ocean Health (2002, 2004, 2006, 2008, 2011).
- Advancement of invasive species issues through the bi-nation Puget Sound Georgia Basin International Task Force and inclusion in their biennial research conference (2004, 2006,
- Continued to incorporate invasive species into Puget Sound clean-up initiatives including the Puget Water Quality Management Plan and the current Puget Sound Partnership Action Agenda (2002, 2004, 2006, 2008, 2011).

Since 2000, ANSC members have conducted numerous management actions including (report year coverage in brackets):

- Unprecedented *Spartina* control and eradication actions that have reduced the overall infestations on both coast and Puget Sound areas by over 99% (2002, 2004, 2006, 2008, 2011).
- Provided $500,000 to $1,000,000 annually to state and local governments to help control nonnative aquatic weeds through Ecology's Aquatic Weed Program (2002, 2004, 2006, 2008, 2011).
- Early detection, prevention, education/outreach, and rapid response actions that have helped to keep the state and the whole Columbia River Basin free of zebra and quagga mussels (2002, 2004, 2006, 2008, 2011).

- Annual multi-agency/state rapid response table-top exercises to implement the Columbia River Basin plan (2008, 2011).
- Development of the ANSC WatchList and WISC's Management Priority Species list tools (2008, 2011).
- Development and implementation of Ecology's National Pollutant Discharge Elimination System (NPDES) permit for the control of aquatic invasive species (2008, 2011).
- Development and implementation of numerous multi-agency control and eradication actions for invasive Purple loosestrife, European green crab, hydrilla, milfoil, and knotweed species (2002, 2004, 2006, 2008, 2011).
- Development and implementation of a statewide ballast water management program that monitors 4,000 vessel arrivals per year discharging increasing volumes of ballast water into Puget Sound and Columbia River ports (2002, 2004, 2006, 2008, 2011).
- Development and implementation of an invasive tunicate management program that surveyed over 100 sites in the Puget Sound, conducted control actions to remove tunicates from boats to prevent spread, and eradicated infestations at two sites (2006, 2008, 2011).
- Development and implementation of multi-agency actions to use native Signal crayfish in school science curriculum instead of invasive species and educating teachers on preventing the release into the wild of any species used in the classroom (2008, 2011).
- Development and implementation of multi-agency actions to contain and control New Zealand mudsnail infestations in the Puget Sound basin.

1.2.5 Stakeholder Consultation.

The legislature directs the ANSC to consult with representatives from industries and other activities that may serve as a pathway for the introduction of aquatic nuisance species to develop practical strategies that will minimize the risk of new introductions. Since its establishment, the ANSC has maintained an open membership and directly encouraged participation by potential AIS pathway stakeholders. The largest participating industry groups have been from recreational boating, aquaculture, shipping, academia, and the pet/aquarium trades. Table 5 provides a summary of the most active industry participants since 2000.

Many of these stakeholders participate mostly in other AIS partner forums such as WISC, the Noxious Weed Control Board, Ballast Water Work Group, and Tunicate Response Committee. This is not a comprehensive list and more detail on stakeholder outreach and participation can be found in individual agency reports.

It is also important to note that local, state, federal and tribal natural resource agencies have been working to address our own potential for introducing and spreading AIS. ANSC members contributed to WISC's standard inspection and decontamination protocols and many agencies have now established internal protocols as well.

Table 5. Industry/pathways and primary representative stakeholders who participated in AIS planning and actions to prevent introduction and spread.

Industry/Pathway	Primary Representative Group
Recreational Boating	• NW Marine Trade Assoc. • WA Recreational Boaters Assoc.
Aquaculture	• Taylor Shellfish • WA Fish Growers Assoc. • Pacific Shellfish Institute • Skookum Shellfish • Lummi Tribe
Shipping	• WA Public Ports Assoc • Western States Petroleum Assoc. • Pacific Merchant Shipping Assoc. • Columbia River Steamship Operators Assoc.
Academia	• University of Washington • Washington State University Extension • Superintendent of Public Instruction • Pacific Education Institute • Delta Education/School Specialty Science • Everett Education School District • Olympic Education School District
Pet, Aquarium, & Live Food Trade	• Korean Women's Assoc. • Seattle Aquarium • Tacoma Zoo/Aquarium • Mountain Home Biological • Niles Biological

1.2.6 Biennial Reports to the Legislature.

The legislature directs the ANSC to prepare a biennial report to the legislature with the first report due by December 1, 2001, making recommendations for better accomplishing the purposes of this chapter, and listing the accomplishments of this chapter to date. As noted above, this is the ANSC's sixth biennial report to the legislature since being established in 2000 (Figure 2). Reports are coordinated, edited, and published through WDFW with members contributing data, information, and accomplishment sections as necessary. ANSC reports are reviewed and approved by members before being reviewed and approved by WDFW prior to submission to the appropriate legislative committee. All reports are available online at www.wdfw.wa.gov/ais for review and download.

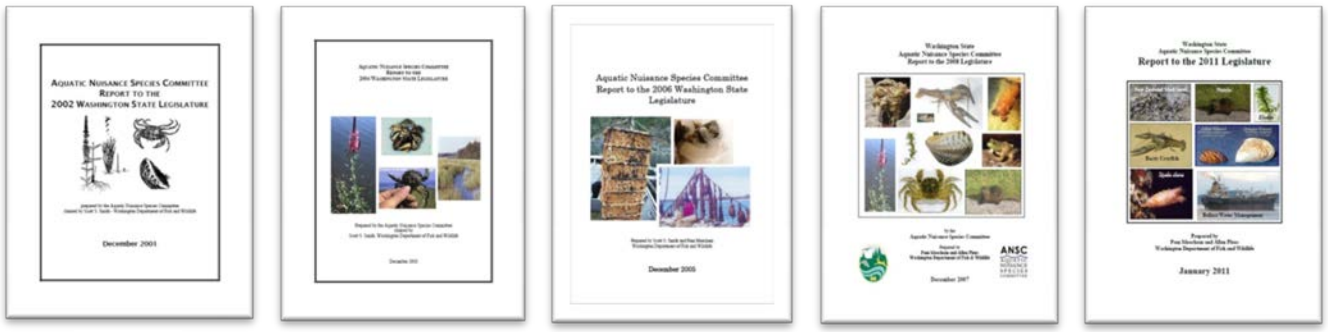

Figure 2. Covers and legislative session dates of five previous ANSC reports to the legislature.

Each report contains detailed information on ANSC accomplishments and recommendations for the prior two-year period by both members and non-members for a comprehensive review of statewide AIS efforts. As the ANSC evolved, the reports have become more of a summary of other more detailed agency reports and less a review of otherwise unreported information.

2.0 RECOMMENDATIONS

Recommendations on how to better accomplish the purposes of chapter 341, Laws of 2007 are provided herein as requested under RCW 77.60.130(3)(f). These recommendations have been developed by the Aquatic Nuisance Species Committee in consultation with the Washington Invasive Species Council. Aquatic invasive species (AIS) – both freshwater and marine – are causing increasing damage to Washington's water, fish and wildlife. Without natural predators, these invaders can displace native animals, destroy natural habitat and cause billions of dollars of damage to public infrastructure.

The recommendations include:

1. End the Aquatic Nuisance Species Committee as a legislatively-established independent committee and transition those responsibilities to the Washington Invasive Species Council;

2. Revise/enhance the Washington Department of Fish and Wildlife's aquatic invasive species statutes on policy and authorities levels;

3. Continue support and enhance Department of Fish and Wildlife's Ballast Water Management Program;

4. Address Increasing AIS Risks from Hull Fouling;

5. Continue support and enhance the Department of Fish and Wildlife's AIS prevention and enforcement program;

6. Continue support of the Department of Agriculture's Noxious Weed Control Board programs;

7. Continue support of the Department of Ecology's Aquatic Weeds Program; and

8. Continue support of multi-agency *Spartina* eradication programs.

The following pages provide a brief rationale summary for each recommendation.

2.1 End the Aquatic Nuisance Species Committee as a Legislatively-Established Independent Committee and transition those responsibilities to the Washington Invasive Species Council.

The purpose of the Aquatic Nuisance Species Council (ANSC) as a stand-alone and legislatively-established committee has been met and members agree that further aquatic invasive species coordination and facilitation work is best accomplished under the Washington Invasive Species Council. Section 1.2 above provides a clear summary of the extent of efforts currently underway statewide, how this work is becoming more complex, and how member resources are being stretched.

As noted in the ANSC report to the 2011 legislature, the work of the members is increasingly being spread among a variety of other priority invasive species groups and committees. We have found that as more groups and sub-groups are formed, ANSC work is becoming more duplicative of those other efforts and that members cannot continue to participate at past levels as resources become increasingly limited. Figure 3 is a graphic from the Washington Invasive Species Council's 2008 strategic plan showing primary coordination entities including the ANSC under "Program Partners." Prior to the establishment of the council, a graphic showing the coordination links with the ANSC would look very similar.

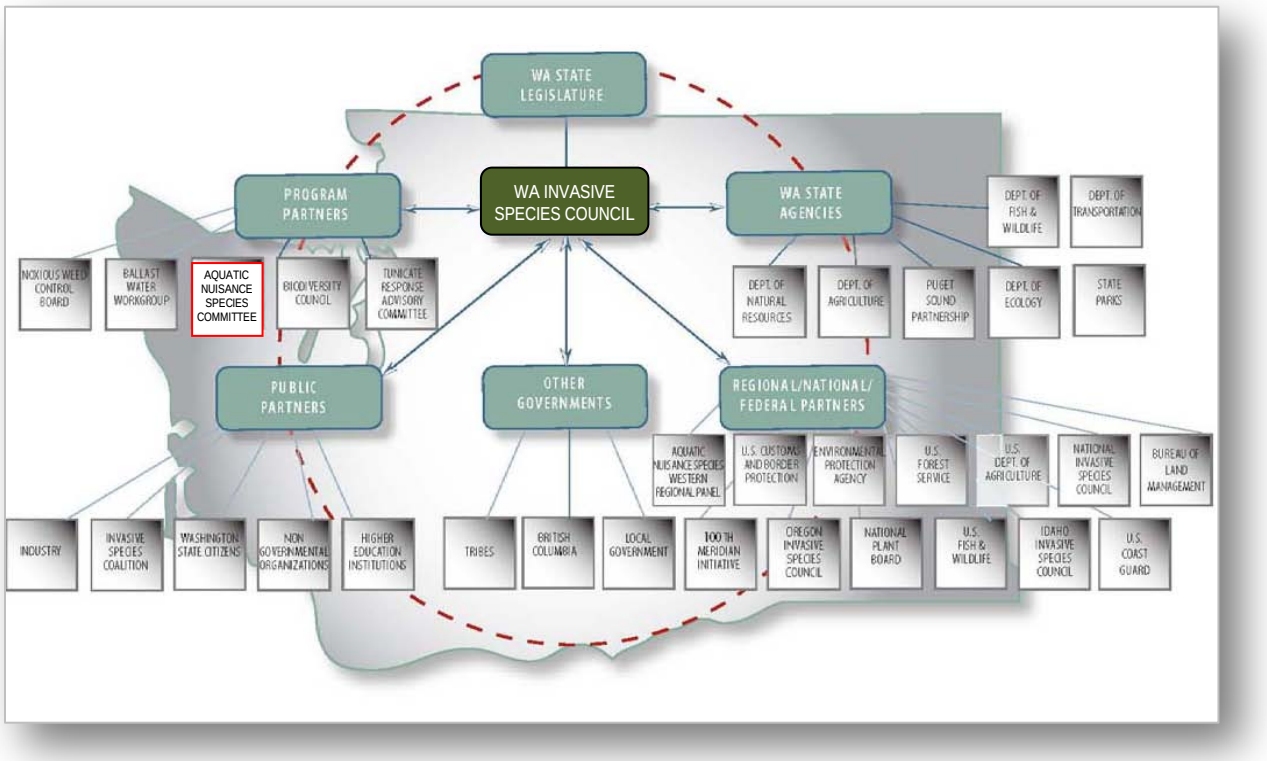

Figure 3. Graphic from Washington Invasive Species Council's 2008 strategic plan showing primary coordination entities including the ANSC.

2.2 Revise and Enhance WDFW's Aquatic Invasive Species Statutes on Policy and Authority Levels.

State laws guiding control of invasive animal species are scattered throughout Title 77 of the state's legal code, creating jurisdictional uncertainty for WDFW and other agencies that regulate invasive species (Table 6). Statutes have been added or modified under multiple chapters without a clear program nexus and some laws have not been changed since 1998. WDFW requests are similar to authorities currently used by the Department of Agriculture for addressing noxious weeds and pests. Revising and enhancing WDFW's AIS statutes is supported by the Attorney General's Office, the Washington Invasive Species Council and the Puget Sound Partnership.

In coordination with partnering agencies, WDFW recommends statutory changes which include, but are not limited to:

- Creating a unified single invasive species chapter and filling management authority gaps;
- Providing greater authority to implement the invasive species program through rules;
- Clarifying WDFW's role and responsibilities in providing a rapid response to infestations by animal invasive species;
- Allowing WDFW to close or limit activities on infested waters;
- Providing WDFW with clear authority to decontaminate, seize, or quarantine watercraft or other property suspected of containing invasive species; and
- Addressing procedures for responding to terrestrial invasive species such as nutria and feral pigs.

Table 6. WDFW Title 77 RCW statutes regarding aquatic invasive species by chapter, section, title, and year adopted or revised.

RCW	Title	Year Adopted/ Revised
77.08.010	Definitions (Purpose in NOTES)	2002, 2007
77.12.020	Wildlife to be Classified	2002
77.12.875	Prohibited aquatic animal species - - Infested state waters	2002
77.12.878	Infested waters - - Rapid response plan	2002
77.12.879	AIS prevention account - AIS prevention program for recreational and commercial watercraft - - Enforcement program - - Check stations - - Training - - Report to the legislature	2005, 2007, 2009
77.12.882	AIS - - Inspection of recreational and commercial watercraft - - Rules - - Signage	2007
77.15.080	Fish and wildlife officers - - Inspection authority	2002
77.15.250	Unlawful release of fish, shellfish, or wildlife - - Penalty - - Unlawful release of deleterious exotic wildlife - - Penalty	2001
77.15.253	Unlawful use of prohibited aquatic animal species - - Penalty	2002, 2007
77.15.290	Unlawful transport of fish or wildlife - - Unlawful transport of aquatic plants - - Penalty	2007
77.60.110	Zebra mussels and European green crabs - - Draft rules - - Prevention of introduction and dispersal (Intent in NOTES)	1998
77.60.120	Infested waters - - List published	1998
77.60.130	Aquatic nuisance species committee	2000, 2007

2.3 Continue to Support and Enhance WDFW's Ballast Water Management Program.

Scientific studies estimate that shipping-related pathways are responsible for an average 69% of the established AIS worldwide. San Francisco Bay is an example of what Puget Sound could eventually look like where 97% of all species are now non-native. If this were to happen in Puget Sound, the hundreds of millions of dollars going into its clean-up would be in vain. This would be devastating for cherished Washington species such as Orca whales, salmon, and endangered rockfish populations. Contrary to popular thought, the AIS threat continues to evolve with development of new ports around the world, new trade routes, new vessels capable of traveling between those ports more quickly, and changes in global climate creating greater potential for establishment (Figure 4). Although most people would consider California as having a higher risk for invasive species because it has more annual vessel arrivals than Washington (10,000 vs. 4,000 respectively), our state receives significantly more ballast water discharge per year (15 vs. 10 million cubic meters). This is one of the most important risk factors for invasive species and shows that Washington State is perhaps at higher risk than any other west coast state.

A brief summary of program accomplishments include:

- 100% ballast water report filing rate reached since the second half of 2010;
- Meeting the 90% Government , Management, Accountability and Performance (GMAP) compliance target for vessel arrivals into Puget Sound (statewide rate = 88%; statewide rate for only those vessel arrivals discharging ballast water = 81%);
- Boarding and inspecting over 300 vessels per year; and
- Effective management consultations with stakeholders through the department's Ballast Water Work Group and the regional Pacific Ballast Work Group.

A brief summary of program challenges ahead include:

- Improved detection and evaluation of partially-compliant ballast water discharges;
- Seven-day coverage to catch non-compliant vessels before they can discharge or have to spend hundreds of millions of dollars to conduct a proper open ocean exchange;
- Improved data management capacity including reporting form entry automation;
- Improved management coordination with Oregon on the Columbia River; and
- Tracking, response and implementation of any new federal requirements.

Additional information and reports are available at www.wdfw.wa.gov/ais/ballast.

Photo: WDFW - K. Strieck

Photo: UW - J. Cordell

Figure 4. The Zhen Hua 9 (left) transporting container cranes is capable of holding 70,000 cubic meters of ballast water and the small crab (right) was found swimming in another vessel's ballast tank during inspection.

2.4 Address Increasing AIS Risks from Hull Fouling.

Addressing hull fouling is timely as: new California, national, and international laws are being adopted that will eventually eliminate toxic paints used to currently manage hull fouling growth and replacing them with less- or non-toxic paints that will require more frequent hull cleaning; rising fuel prices are pushing the need for cleaner hulls as even low amounts of hull fouling can result in 8%-18% greater fuel consumption (costing hundreds of thousands of dollars per year for transoceanic vessels); and increasing concerns about harmful atmospheric emissions contributing to climate change due to inefficient fuel use. Most scientific studies place hull fouling as having a higher pathway risk of AIS than ballast water in both fresh and marine waters, and combined comprise the two most significant aquatic invasive species pathways threatening Puget Sound (Figure 5). Loss of the invasive tunicate response funding has eliminated department capacity to manage AIS introduced or spread through the recreational and commercial watercraft hull fouling pathway. Current funding is focused on ballast water and overland transportation of freshwater AIS which leaves little ability to manage AIS transported over water, especially in marine and Columbia River systems. WDFW and the Department of Ecology have already been approached by both vessel paint manufacturers and local hull cleaning operators for regulatory guidance on in-water cleaning.

Addressing hull fouling management is consistent with directives and recommendations from:

1. WDFW's stakeholder Ballast Water Work Group 2007 report to the legislature consensus recommendations 1.2.7 and 1.2.8;
2. West Coast Governor's Agreement on Ocean Health Marine Invasive Species Action 2.3 to reduce pathways of introduction such as vessel hulls of commercial ships;
3. Western Governors' Association Policy Resolution 10-4 to support a coordinated regional approach to combating invasive species;
4. RCW 77.60.130(3)(d) directive to coordinate regulatory authorities, monitoring and control programs with regional efforts;
5. Puget Sound Partnership (PSP) Action Agenda NTA Priorities A.5.1 and A.5.2;
6. Proposed revised PSP's Action Agenda Priority action B8.1 NTA 3; and
7. Washington Invasive Species Council's recommended Strategic Plan Action 22.2 to strengthen current state regulations.

Photo: WDFW - L. LeClair

Photo: CSLC - C.Scianni

Figure 5. Examples of hull fouling on a recreational watercraft in Puget Sound (left) and on a commercial vessel in California.

2.5 Continue to Support and Enhance WDFW's and WSP's AIS Prevention and Enforcement Programs.

The legislature created the nationally-leading AIS Prevention and Enforcement programs in 2005 with funding provided by a two dollar fee on annual resident watercraft registrations that is allocated to WDFW and the Washington State Patrol (WSP). The primary purpose of the programs is to address the threat of invasive zebra and quagga mussels transported overland by recreational and commercial watercraft. The program also strives to cover all of the Washington Invasive Species Council's priority management aquatic (14) and terrestrial (1) invasive species that can be introduced or spread by numerous pathways.

A brief summary of program accomplishments include:

- Since 2008, early detection monitoring for zebra/quagga mussels has been conducted at a total of 229 unique sites (142 in eastern Washington and 87 in western Washington) representing 91 different water bodies statewide with no positive detections.
- Since 2006, the WDFW has responded to 37 incidents of watercraft entering Washington that were contaminated with zebra/quagga mussels. Many of these were found during routine inspections by the WSP at one of their five Port of Entry weigh stations.
- Since 2008, a total of 2,955 watercraft inspections at mandatory AIS Check Stations have been conducted at 53 unique sites of which 97 (3.5%) were infested with AIS.
- A multi-stakeholder work group has been formed to replace nonnative crayfish with native crayfish species for use in statewide grade and middle school science curriculum with expected full implementation for the 2012-13 school year.

A brief summary of program challenges include:

- Approximately 40% in budget reductions between FY 2007 and 2012 through loss of:
    - Tunicate funding (~$160,000/yr);
    - Federal funding (ballast water, Atlantic salmon, and general AIS management (from ~$150,000/yr to projected $26,000/yr);
    - General state funds ($32,000/yr green crab monitoring); and
    - AIS Prevention and Enforcement program direct funding (~$85,000/yr in implementation of 15.9% indirect costs.
- AIS Prevention account allocation for FY 2013 was cut $133,000 due to concern of adequate balance reserve to cover low revenue months.

Additional information and biennial reports are available at www.wdfw.wa.gov/ais.

Figure 6. Left picture is a watercraft inspection at a mandatory AIS Check Station. Right picture is of zebra mussels found on an infested watercraft from Michigan that was sub-sequently decontaminated. (J. Schultz photos)

2.6 Continue to Support the Department of Agriculture's Noxious Weed Control Board Programs.

The Washington State Noxious Weed Control Board (NWCB) is one of the leading entities involved in policy development of invasive plant control in Washington and is an active member of WISC (Figure 7). The NWCB is an advisory board to WSDA regarding noxious weed control in Washington and is responsible for adopting the annual noxious weed list, by which all state and private landowners must abide. In addition, the NWCB coordinates and supports all county noxious weed control boards and weed districts in the state, which implement noxious weed control programs and carry out the noxious weed laws.

During the 2010-2011 biennium, the NWCB adopted a few changes to WAC 16-750 that were pertinent to aquatic noxious weeds. In 2010 the WSNWCB clarified the definition of "control" in WAC 16-750-003(a). It was originally defined as "to prevent all seed production and to prevent the dispersal of the following propagules of aquatic noxious weeds – turions, fragments, tubers, and nutlets". Recognizing that the list of propagules did not encompass all means of vegetative reproduction and that the general public might not understand these specific terms, the WSNWCB adopted a new definition in 2010. "Control of noxious weeds" is now defined as "to prevent all seed production and to prevent the dispersal of all propagative parts capable of forming new plants". Not only does this definition better apply to species such as the knotweed complex, *Polygonum* spp., which can sprout new plants from rhizomes and stems, and flowering rush, *Butomus umbellatus*, which uses bulbils as part of its reproductive strategy. The revised definition also complies with Executive Order 05-03, which requires all agencies to adopt Plain Talk Principles. The WSNWCB changed the classification of the facultative wetland species hairy willow-herb, *Epilobium hirsutum*, from a Class C noxious weed to a Class B noxious weed since its statewide distribution was better understood. The Class B listing allows better management from a statewide perspective by designating it for control in all regions where it has not yet spread.

The NWCB also provided $5K in pass-through funding to support eradication efforts of flowering rush by the Whatcom County Noxious Weed Control Board in FY10 and $10K in pass-through funding to the Nisqually Watershed CWMA Knotweed Control Project to survey for knotweed infestations in portions of that watershed.

Additional information and biennial reports are available at: http://www.nwcb.wa.gov/default.asp.

Figure 7. Left picture is of J. Andreas (WSU Integrated Weed Control Program) releasing the purple loosestrife biocontrol and right picture is of P. Grover (Mason County Noxious Weed Control Board) injecting herbicide into Knotweed.

2.7 Continue to Support the Department of Ecology's Aquatic Weeds Program.

Brazilian elodea update: Brazilian elodea is found in 28 sites and only in western Washington water bodies. Brazilian elodea has been eradicated from three sites: Lone Lake, Battle Ground Lake, and Silver Lake in Cowlitz. It is being aggressively managed in 11 lakes/rivers (Figure 8). It is being controlled on a site by site basis in various locations within Lake Washington/Portage Bay. Other sites where it is not managed include back waters of the Columbia River.

Caulerpa update: Caulerpa has not been detected in Washington waters. There is now a funding mechanism in place that will allow Saltwater Algae Funds to be used for its management should it be discovered here.

Hydrilla update: Hydrilla, a Class A noxious weed, has been declared eradicated from Washington. The closest infestation is in Idaho and Idaho managers are aggressively controlling these populations.

Variable-leaf milfoil update: Ecology is working with Pierce and Thurston County Weed Boards to eradicate variable-leaf milfoil, a Class A noxious weed, from five lakes (the only lakes in Washington infested with this species). So far, variable-leaf milfoil is eradicated from one lake, at low levels in three lakes, and being intensely managed in the remaining lake. Ecology suspects that plants may be germinating from seeds.

Additional information on Ecology's aquatic weeds program activities and accomplishments are available at http://www.ecy.wa.gov/programs/wq/plants/grants/index.html.

Photo: ECY - K. Hamel

Photo: ECY - K. Hamel

Figure 8. Ecology's Aquatic Weed Grant Program has funded planning/control/eradication efforts for Brazilian *elodea* on the Chehalis River (left - Andy Olson) and fragrant waterlily (and algae) on Long Lake (right).

2.8 Continue to Support the Department of Agriculture's Spartina Eradication Program.

In 2011, the Washington State Department of Agriculture (WSDA) along with state and federal partner agencies, tribal entities, local governments and landowners treated or removed approximately 22 solid acres of *Spartina* in Puget Sound, Grays Harbor and Willapa Bay (Figure 9).

During the summer of 2011, this coalition and the aquaculture industry cooperatively treated over ten acres in the Puget Sound and approximately 2.5 solid acres of Spartina scattered throughout Willapa Bay.

The combined statewide effort to eradicate *Spartina* in the marine waters of the state over the past nine years has reduced the overall infestation by over 99%.

With the largest of the state's infestations controlled, the effort has evolved into a 'survey and eradicate' model focused on finding and treating the remaining individual plants and scattered infestations that exist throughout the previously infested area. This requires significant personnel on the ground to give individual attention to the same areas that helicopters or large machines were previously able to cover in a relatively short amount of time. The amount of herbicide needed to treat the infestations has declined, bringing herbicide costs down. However, the number of personnel needed has increased labor costs. As a result, to meet the program's goal of eradicating *Spartina*, continued funding is imperative over the next three years.

For more information see WSDA's annual Reports at:
http://agr.wa.gov/PlantsInsects/Weeds/Spartina/.

Photo: WSDA - C. Phillips

Photo: WSDA

Figure 9. A *Spartina anglica* plant intermixed with native vegetation in the Puget Sound and aerial photo of Willapa Bay after extensive effective Spartina eradication.

3.0 APPENDIXES

A. Legislative Intent
B. ANSC Membership

APPENDIX A

RCW 77.60.130 Aquatic Nuisance Species Committee

(1) The aquatic nuisance species committee is created for the purpose of fostering state, federal, tribal, and private cooperation on aquatic nuisance species issues. The mission of the committee is to minimize the unauthorized or accidental introduction of nonnative aquatic species and give special emphasis to preventing the introduction and spread of aquatic nuisance species. The term "aquatic nuisance species" means a nonnative aquatic plant or animal species that threatens the diversity or abundance of native species, the ecological stability of infested waters, or commercial, agricultural, or recreational activities dependent on such waters.

(2) The committee consists of representatives from each of the following state agencies: Department of fish and wildlife, department of ecology, department of agriculture, department of health, department of natural resources, Puget Sound partnership, state patrol, state noxious weed control board, and Washington sea grant program. The committee shall encourage and solicit participation by: Federally recognized tribes of Washington, federal agencies, Washington conservation organizations, environmental groups, and representatives from industries that may either be affected by the introduction of an aquatic nuisance species or that may serve as a pathway for their introduction.

(3) The committee has the following duties:

(a) Periodically revise the state of Washington aquatic nuisance species management plan, originally published in June 1998;

(b) Make recommendations to the legislature on statutory provisions for classifying and regulating aquatic nuisance species;

(c) Recommend to the state noxious weed control board that a plant be classified under the process designated by RCW 17.10.080 as an aquatic noxious weed;

(d) Coordinate education, research, regulatory authorities, monitoring and control programs, and participate in regional and national efforts regarding aquatic nuisance species;

(e) Consult with representatives from industries and other activities that may serve as a pathway for the introduction of aquatic nuisance species to develop practical strategies that will minimize the risk of new introductions; and

(f) Prepare a biennial report to the legislature with the first report due by December 1, 2001, making recommendations for better accomplishing the purposes of this chapter, and listing the accomplishments of this chapter to date.

(4) The committee shall accomplish its duties through the authority and cooperation of its member agencies. Implementation of all plans and programs developed by the committee shall be through the member agencies and other cooperating organizations.

[2007 c 341 § 59; 2000 c 149 § 1.]

APPENDIX B

Aquatic Nuisance Species (ANS) Committee
Membership List

RCW 77.60.130 requires that the ANS Committee consist of representatives from eight state agencies and shall encourage and solicit participation by tribes, federal agencies conservation and environmental groups, and affected industry representatives. The committee may invite other entities to participate such as those with scientific and technical interests. Non-members may participate through official member groups, may request membership status if they qualify under one of the designated categories, or may request being a formal point of contact. ANS Committee meetings are open to the public. The general public and other interested parties are invited to attend any ANS Committee meeting and receive any materials produced by the committee by requesting to be included on the general email distribution list or by request of specific information.

Active Members

Active members are those that have expressed a commitment to regularly participate in meetings or comment on committee activities.

State Agency	Lead
Dept of Fish and Wildlife	Allen Pleus
Dept of Ecology	Kathy Hamel
Dept of Natural Resources	Blain Reeves
Dept of Agriculture	Tom Wessels
Noxious Weed Control Board	Alison Halpern
Dept of Health	Jerry Borchert
Puget Sound Partnership	Kevin Anderson
State Patrol	Bill Balcom
Dept of Parks and Recreation	Lisa Lance
Invasive Species Council - RCO	Wendy Brown

Tribes	Lead
Northwest Indian Fisheries Commission	Fran Wilshusen
Skokomish Tribe	Randy Lumper

Federal Agency	Lead
US Fish & Wildlife Service	Kevin Aitkin, Paul Heimowitz
US Geologic Survey	Scott Smith
Pacific States Marine Fisheries Commission	Steve Phillips

Conservation & Environmental Groups	Lead
Washington Sea Grant	Jeff Adams
Washington Invasive Species Coalition	Herb Curl

Science & Technical Interests	Lead
University of Washington	Julian Olden
Species expert	Gretchen Lambert
Oregon State University	Sam Chan

Affected Industry or Pathway	Lead
Recreational watercraft	Steve Grieves
Shellfish industry	Diane Cooper, Gordon King, Brett Bishop
Bonneville Power Association	Jim Irish
Washington Public Ports Association	Eric Johnson

Non-Members: Points of Contact

To fulfill the requirements of RCW 77.60.130(3)(d), the ANS Committee encourages non-member formal points of contact to facilitate coordination with key local, regional, national, and international entities. Points of contact are not expected to participate regularly, but serve as an entity's liaison to disseminate information as necessary.

Entity	Point of Contact
Governor's Office	Bob Nichols
NOAA/NMFS	Blake Feist
National Parks Service	John Wullschleger
US Coast Guard	Rebecca McCann
West Coast Governor's Agreement	Lisa DeBruyckere
State of Oregon	Rick Boatner
State of Idaho	Amy Ferriter
State of California	Susan Ellis
State of Alaska	Tammy Davis
State of Hawaii	Katherine Cullison
British Columbia, Canada	Matthias Herborg
ANS Western Regional Panel	Don MacLean

State of Washington
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