
COLUMBIA RIVER BASIN TEAM MEETING

October 1–2, 2014

Heathman Lodge

Vancouver, Washington

Attendees: Eric Anderson, Rick Boatner, Steve Bollens, Jim Capurso, Sam Chan, Tim Counihan, Lisa DeBruyckere, Glenn Dolphin, Hannah Dondy-Kaplan, Robyn Draheim, Joanne Grady, Jana Grote, Michele Hanson, Paul Hayduk, Rian Hooff, Bob Kibler, Carl Klein, Lloyd Knight, Tamara Knudson, Megan Levy, Alecia Malone, Madelyn Martinez, Rich Miller, Christine Moffitt, James Naramore, James Parker, Stephen Phillips, Alan Pleus, Christine Pratt, Martyne Reesman, Jim Ruff, Stacy Schmidt, Marcie Steinmetz, Mark Sytsma, Damian Walter, Teagan Ward, Stephen Waste, Steven Wells, and Kate Wilson. On the phone: Mark Anderson, Matthias Herborg, Bob Kibler, Jordon Nielsen, Tom McMahon, Karen Vargas, Thomas Woolf, John Wullschleger (phone)

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EXECUTIVE SUMMARY OF ACTION ITEMS

ACTION ITEM: Make a one-pager/flow chart/table of the next steps on perimeter defense, adding the comments from participants. Include action items that states can take back to their respective agencies. Ensure roles and responsibilities for action items are described.

ACTION ITEM: Explore the need for Section 10 and Section 404 permits associated with addressing management actions associated with dreissenid introductions.

ACTION ITEM: Explore costs, storage, and ordering time associated with copper and Zequanox® products.

ACTION ITEM: Correct the “Responding to an introduction of dreissenids in Oregon and Washington” document to reflect, in the case studies section, the toxicity of Zequanox® to juvenile salmonids.

ACTION ITEM: Determine if a particular company is required to install limno curtains and determine their efficacy relative to water flow/veligers, etc.). Check on sources for limno curtains.

ACTION ITEM: Ensure state Departments of Agriculture register Zequanox® and any other additional products to be used for mussel control.

I. QUAGGA/ZEBRA MUSSEL ISSUES

STATUS OF FY2014 FEDERAL QZ FUNDING (R. DRAHEIM, USFWS; J. WULLSCHLEGER, NPS)

\$930,000 available from Region 2 for FY2014. A total of 11 applicants requested a total of \$1.5 million. A total of 5 projects were not funded; 3 projects were funded at levels less than requested.

Process

- Input was gathered from partners in the West – informational meeting May, 2014.
- A proposal evaluation team comprised of AIS coordinators from regions 1, 2, 6, and 8 ranked the proposals independently, then the group discussed the rankings
- Final approval from Fisheries ARD Region 2, Stewart Jacks

Proposal ranking criteria

- Geographic area to benefit
- Levels of infestation and boater traffic at target areas
- Consistency with QZAP priorities
- Project \$ devoted to on-the-ground actions
- Degree to which the applicant has previous experience with western quagga mussel containment and prevention efforts
- Degree of cooperation/coordination with USFWS partners
- Estimated feasibility of the project
- Cost effectiveness

- In addition, inspection and contamination projects outranked outreach activities, which outranked research activities

Awards

- Colorado Parks and Wildlife – Regional Data Sharing System for WID Stations
- PSMFC – Watercraft Inspection and Decontamination Training Program
- Arizona Game and Fish – Mobile Watercraft Decon Program
- Lake Havasu Marine Assn – LHMA AIS Program
- Utah Division of Wildlife Resources – containment of quagga mussels to the Lower Colorado River Drainage and Lake Powell
- Nevada Division of Wildlife – Lake Mead National Recreation Area AIS removal stations

FY2015 – uncertainty about funding

In addition, nine park service units were given \$2 million for containment and enforcement work:

- [Amistad NRA](#) - \$70,000 – hired a mussel coordinator – developed a plan, building and deploying sampling devices, visitor questionnaire
- [Bighorn Canyon NRA](#) - \$90,000 – worked with states of Wyoming and Montana on a ramp program
- [Black Canyon NP/Curecanti NRA](#)- \$200,000 – funded ramp crews
- [Glacier NP](#) - \$60,000 – for QZ mussel work
- [Grand Teton NP](#) - - \$50,000 – repair on boats, boat rangers to make public contacts, seasonal technician to perform boat inspections, public outreach
- [Lake Mead NRA](#) - \$530,000 – Quagga education team, monitoring, purchase of wash station, repair and maintenance of existing wash station (operated by Nevada Dept. Wildlife)
- [Lake Roosevelt NRA](#) - \$250,000 – gave \$180,000 back, and it was transferred to Lake Mead, which was added to the agreement with the Nevada Dept. of Wildlife).
- [Glen Canyon NRA](#)- \$750,000 – primarily education

POWELL/MEAD/SOUTH FORK RESERVOIR

Lake Powell/Mead/South Fork Reservoir (M. Anderson, NPS)

- 2nd largest reservoir in the United States
- 3 million visitors/yr
- Predicted to be the first body of water in the West infested
- Extension prevention efforts were developed
 - Vessel certification
 - Increased penalties (\$5,000 to six months in jail; up to 400 citations were issued/year)

- Expanded decon capability (all marinas ~ \$700,000 and specialized training)
- Restricted launch ramp hours
- Staffed ramped
- Full quarantines on infested boats
- Number of inspections increased from 2006 to present
- Monitoring approaches
 - PCR, CPL microscopy, FlowCAM (plankton)
- Summer of 2012 detected first PCR hit – took 150 samples in that area over 1.5 months – 14 of the 150 came back positive
- March of 2013, first adult mussels discovered from a commercial boat hauler on Lake Powell
- Did a quagga blitz with divers inspecting marinas and pulling off adult mussels upon detection – found 811 mussels, none on natural substrate
- Then found mussels on fixed wheel gate of dam
- In other marinas and places (50-100 miles from original infestation and outside of any veliger detection), adult mussels have been detected
- Containment strategy
- Despite many years of mussel prevention efforts at Glen Canyon National Recreation Area, quagga mussels now exist in Lake Powell. In late 2012, extensive monitoring allowed a very early detection of mussel reproduction in the reservoir. Subsequent searches of shorelines and underwater structures indicated adult quagga mussels in the extreme southern portion of the reservoir. Following NPS guidance from 2007 and incorporating information from a convened problem analysis team as well as a science panel, Glen Canyon National Recreation Area modified the mussel prevention program at Lake Powell to focus on containment of mussels within an adaptive management framework. The program is based in boater education, agency controls (where they exist), maximization of regional decontamination capability, and continued monitoring for aquatic invasive species in Lake Powell.

Jordan Nielson (Utah DWR)

- 4,554 watercraft were intercepted in Utah – about 75% came from Lake Powell; this poses a significant threat to Utah.
 - 4.6% of boaters that come from infested locations – this means we need to ramp up outreach and education efforts
- Lake Powell containment
 - Administrative checkpoints were conducted March through May
 - Officers were present on the boat ramps 4 days a week during May
 - Moved technicians out of the regions to cover ramps every day
 - Received USFWS funding to provide technicians and additional checkpoints around Lake Powell for 2015
- Envisions a multi-stage inspection process – contact as many as possible before they are leaving, and contact boats offsite as well (because so many are leaving at one time). Three highway pinch points can catch almost all of the traffic leaving Lake Powell.

T. McMahon (AZGF)

- In the process of producing more signage for boaters leaving Lake Powell.
- July 2015 – Potentially, an additional \$350,000 will be coming out of the watercraft registration fund – to support a potential body at Powell and a mobile decon unit.
- In an actual field survey, 60 of the 105 contacts made had not pulled their plug on their boats – yet on a prior written survey, about 99% say they pull their plug.
- Working with Utah and the national recreation area on *Clean, Drain, Dry*

Karen Vargas (NDOW)

- **Statewide Monitoring:** NDOW routinely collects samples for both PCR/DNA and microscopy analysis. Samples are sent out of state for analysis. No adults and/or veligers have been detected at any Nevada lake or reservoir, with the exception of Lake Mead and the lower Colorado River, since 2011. In 2011 veligers were detected by Bureau of Reclamation at Lahontan and Rye Patch Reservoirs. No veligers have been detected since that time at either reservoir. Each sampling event includes visual/tactile monitoring at boat ramps and artificial substrates (buoys).
- **South Fork Reservoir (NE NV):** Monitoring results: 1/3 samples positive for ZM on 7/14/14. Samples collected earlier in the year at SF were negative. Re-sampling occurred on August 5: 4/5 samples positive for ZM (weak positives). Since that time, 12 additional samples have been taken: all have been negative for ZM and QM. Two additional samples are currently being analyzed and another 1 to 2 sample sets will be taken before the lake freezes over. NDOW has an inspection/mobile decontamination station catching watercraft both entering and exiting the reservoir. The station is open 5 days per week. Wed-Sunday (40 hrs. per week). The station is expected to remain open until Oct. 31 and reopen in the spring. Previously, NDOW had a traveling inspector rover visiting SF during the summer months. Visual monitoring at boat ramps/buoys and dam area have been negative. South Fork is both a fishing and recreational lake and has fairly good water levels.
- **Wildhorse Reservoir (NE NV):** Monitoring results: 6 samples have been analyzed thus far this year beginning in June (2 samples per visit). ½ samples tested positive (PCR) for ZM on 8/25 (weak positive). Two additional samples are currently being analyzed and NDOW is planning on sampling two more times this year. All boat ramps have been out of the water since early June. Water levels are extremely low and shore only launching is occurring. NV State Parks had mandatory boat inspections this past summer at the Park's boat ramp (May-Labor Day). Wildhorse is primarily a fishing lake.
- **Wilson Sink Reservoir (NE NV):** This is a little used reservoir (well off main highway) and is primarily used for fishing. NDOW collected one sample on August 25. That sample tested positive for ZM (weak positive). Two additional sets (2 samples each set) of samples are scheduled to be collected in the next month – one the 1st week of October and another later in October (weather providing).
- **Lake Mead:** The Lake Mead AIS Project will be receiving funding from NPS and USFWS to provide wash station/outreach staffing at LMNRA. Three large capacity AIS removal/hot water wash stations are open. NPS/LMNRA provides the maintenance and other general support of the stations. NDOW is currently operating the stations utilizing winter hours whereby watercraft generally need to make an appointment

for wash. Wash stations are open 7 days per week from 8–10 hrs. per day (by appointment during the winter). Approximately 125-150 decontaminations have been performed since Jan 2014.

- A majority of the watercraft are heading to Southern California. NDOW began operating the station in January, ten watercraft have been quarantined and/or rejected by the CA inspection stations. A majority are believed to have originated at Lake Mead NRA. NDOW had performed an AIS removal/hot water wash on one of those vessels. In addition, Utah also intercepted a quagga watercraft that NDOW had performed an AIS removal on as did Idaho/Oregon. Many times, NDOW is unable to remove all quagga mussels from a heavily infested watercraft, however, a hot water wash is still performed and the mussels are killed in the process. The current overarching goal is to intercept vessels that are bypassing the AIS removal stations through outreach at the ramps and entrance stations.

FEDERAL LEGISLATION (S. PHILLIPS)

- **PLAQ Act** H.R. 1823 (Heck) and S. 2530 (Heller)
 - 2530 has statutory exemption for public water systems
 - 2530 had a hearing on 7/16/2014. DOI does not object to the inclusion of QM but opposes the proposed exemption
 - Will not get passed in 2014, but may try again in 2015
 - Texas was able to get an exemption to the Lacey Act – for ZM for Lake Texoma, they got an exemption for ZM because they moved from OK to Texas – signed on June 9
- **Lake Tahoe Restoration Act** – there is language to legislatively list mussels. The Restoration Act contains a lot of funding and are motivated to get the bill passed, so there's a possibility in the lame duck session this bill could appear. It has bipartisan support.
- **Lacey Act** – Invasive Fish and Wildlife Prevention Act – 2 bills from Gillibrand (D-NY) in the Senate and Slaughter (D-NY) in the House to amend the Lacey Act. Section 6 provides for an emergency exemption designation – but there is uncertainty re: whether or not this could be used for species already established in the United States (unlikely). A hearing was held – potential for legislation to be introduced in 2015.
- **WRRDA signed 6/10/14** – Few of the WRRDA provisions will be part of the appropriations bill. It was authorized, but not appropriated.
- **Healthy Habitats Bill (Federal Lands Invasive Species Control, Prevention and Management Act)** – 75% for control and management, 10% for administrative costs, 15% for research and education. A hearing was held on July 9. This bill will likely be seen again in 2015.
- **FY2015 House Interior Appropriations Bill** – USFWS - \$3 million (increase of \$1 million); National Park Service - \$2,000,000. Continuing resolution for FY2015; if Republicans capture the session, the Democratic lame duck session may include an omnibus.
- **Invasive Species Strategy (DOI)** – looking at regulations and laws associated with federal agencies on federal lands. Lori Williams, executive director of NISC, retired – documents are now available for agency comments and legal review. Federal policy options, roles and responsibilities, and laws and policies should be available for review in the fall of 2014. We need better regulations for fouled watercraft that mandates decontamination.
- **EPA NPDES Vessel Discharge Permit Update** – came out of the Clean Boating Act – bill was introduced to extend or make permanent the exemption for small boats, but the bill expanded the scope to ballast water

regulations, which drew the ire of the Western and Great Lakes states. The bill would then have preempted state laws, so West Coast and Great Lake states opposed the bill. The VDP will likely be passed for smaller, non-recreational, non-military vessels – about 100,000 boats nationwide.

REPORT ON BUILDING CONSENSUS, WESTERN REGIONAL PANEL (J. GRADY)

- Building Consensus in the West has a series of partners on a planning team.
- Started with a meeting in Phoenix in 2012 with AIS coordinators, Assistant Attorney Generals, and law enforcement supervisors
- The goal was to collectively and collaboratively protect the Nation's last great wild places from Q and Z mussels while creating economies and efficiencies for both natural resource agencies and the recreational boater.
- The vision is to achieve:
 - Reciprocity for low-risk boat inspections
 - WID training
 - Model Law – left Phoenix was a 26-point action plan that included an action to develop model legislative provisions – ultimately approved by the Association of Fish and Wildlife Agencies – the model law was written to incorporate all taxa – it's now being shared with the Western Governor's Association and others. Now existing state laws are being compared to the model law – at this juncture, many states already have the authorities in place to implement WID, even if they don't have actual programs in place.
 - Next step is to write the gold standard model laws that would fit under the model law legislation.
- States had additional meetings to agree upon waterbody monitoring classifications and definitions, watercraft inspection and decontamination definitions, protocols, and procedures (2 meetings in Denver, CO).
- Manual training and updates are occurring.
- 3 states (CO, NM, and WY) crafted a reciprocity this season (accept seals and receipts for low-risk boats)
- Federal Land Managers Committee drafted appendices – papers will be ready for the November task force meeting for review. To determine if we can regulate the movement of boats off federal lands.
- January 27–28, Las Vegas, NV summit – Boat Design and Construction in Consideration of AIS Summit – 2-day summit will begin discussion to consider boat designs that minimize transport of invasive species. Several state coordinators and PSMFC will be in the rooms with engineers to discuss design standards. The hope is new standards adopted for boat production in the United States.
- Next steps include new and improved manual and online courses tests for returning inspectors, the new AIS website, review of existing state laws compared to the model law, model regulations, collective outreach messaging and inreach, boat design standards, federal lands regulation, and proposed February 2016 summit – holding ourselves accountable since the 2012 Phoenix workshop.

Comment: We need to flesh out some more the use of PCR and other methods – some states are using it, some are not. How do states decipher and process hits using techniques and technologies that other states are not using?

II. USGS/WSU DREISSENIID MUSSEL EARLY DETECTION MONITORING/ANALYSES EFFORTS (T. COUNIHAN, S. BOLLENS)

BPA (Technology Innovation Program) funded collecting and processing over 160 samples, primarily on the main stem Columbia River. Have also been conducting samples in high priority areas in Oregon and Washington; coordination with Oregon and Washington allowed states to concentrate in other areas. Samples are then processed at WSU. Tim will be sending out a data call for monitoring locations within the next week (from Columbia River Basins, British Columbia, Alberta, WRP entities).

WSU does lab processing and data analysis of the samples. There have been no veligers detected in 2013 or 2014. In 2013, there were weeks between analysis between sample collection and analysis. In 2014, samples are analyzed close to real-time. Are analyzing using PCR – also developing protocols for FlowCAM using well-replicated samples and controls. FlowCAM is somewhat more efficient than traditional microscopy, and results in more ancillary data on the plankton community. BPA provided supplemental support for a new faculty member (Karen Green) at WSU to develop environmental DNA approaches using same samples as ones analyzed using traditional microscopy. She's developing assays on Q and Z mussels using Corbicula.

At next CRB meeting, Tim and Stephen will present results of 2014 data.

III. STATE/TRIBAL/CA AIS PROGRAM INFORMATIONAL REPORTS

Oregon Department of Fish and Wildlife and Oregon Marine Board (R. Boatner and G. Dolphin): 3 check stations open through October – for the season – 11,000 inspections. Intercepted more than 200 boats (mostly with plant materials), and 20 boats with zebra (from Great Lakes), quagga, blue and other mussels. 32% of boats intercepted that were fouled had been previously inspected in other states (Wyoming, Idaho, and California). Law enforcement logged 40 citations and 31 warnings for boaters not stopping – county deputies conduct the enforcement. As of last week, 587 citations for no permits and 875 warnings. Revenue is flat and slightly declining compared to the past four years – as of July 1 of 2015 and the next biennium, there will be budget reductions (mussel sampling and Lake Watch program).

Department of Environmental Quality (R. Hooff)– inspections have been down the past couple of months (vacancy in position). Increasing fee to maintain current service levels for the program (fee increase for vessel arrivals – from \$70 to \$88). A dry dock constructed in China was transported transoceanic (on a ship) into the Willamette – lack of notification for biofouling concerns (there was biofouling growth on the hull) and lack of regulatory authority. Tanks were supposed to have been cleaned, but facility crew and environmental compliance authorities determined there were a lot of living organisms in the tanks. Exploring treatments and safe disposal options are being explored (tanks contained live fish). A federal change will change mid-ocean ballast water exchange as a primary management approach to shipboard treatment (this is a good thing for marine ports because the efficacy will be improved). This paradigm shift may not be an improvement at all. For the foreseeable future, states may be moving forward with requesting that existing mid-ocean ballast exchange. Exchange plus treatment should occur in all freshwater ports similar to what is occurring in the Great Lakes.

Washington Department of Fish and Wildlife (C. Klein, A. Pleus)– Working on rulemaking to implement 2013 legislative changes, including running inspection stations with department-authorized individuals as well as inspection and certification requirements. Investigating someone selling bullfrog tadpoles. New legislation will fund the 2013 unfunded bill – three sources of funding:

- A \$5 opt out for recreational boaters – modeled under State Parks – which has a 20% success rate (this likely won't move forward)
- Watercraft excise tax when boaters register their boats annually – asking for 4% diversion on excise tax from general fund. Boaters want to see the distribution of fees spread more broadly across more users.
- Shipping vessel fee (shipping containers, etc.) – asking them to pay their way for the WDFW program.

New Zealand mudsnails - Capital Lake (2009) – first inland detection. Since that time, Lake Washington, Ringold Hatchery (above Richmond) – hatchery complex consisting of two hatcheries with two main water sources. Hundreds of people access the hatchery area daily via boats and foot traffic. Signage, boot washing stations, etc. have been installed. About 200,000 fish on site (steelhead, rainbows, muskies). Fish could be a risk for spread as they are released from the hatchery.

Montana Fish Wildlife and Parks (S. Schmidt)

2014 Monitoring (as of 9/22/14):

- 107 waterbodies and 313 sites (so far)
- New AIS Populations:
 1. 2013 - NZMS at Quake Lake and Bluewater Creek and CLPW at Quake Lake
 2. 2014 – EWM has potentially spread to lower Madison near Jefferson River (unconfirmed)
- Additional monitoring crew hired in 2014 primarily to do macrophyte surveys, but also did standard AIS monitoring for all taxa

2014 EWM Control Work:

Columbia River Basin

- Beaver Lake near Whitefish (Lake County/Flathead basin Commission)
 - <1lb of Eurasian watermilfoil removed in 2014 (26 lbs removed in 2012 when first found)
- Flathead Lake/Flathead River (Lake County/ Flathead Basin Commission)
 - Diver dredge removal of curlyleaf pondweed
- Noxon/Cabinet Gorge Reservoir (Sanders County Task Force)
 - Noxon
 - Diver dredging around a boat ramp at Noxon Reservoir
 - 19 acres Eurasian watermilfoil treated with endothall/triclopyr
 - Bottom barriers placed at select areas around boat ramps and private docks
 - Cabinet Gorge
 - 181 acres of Eurasian watermilfoil treat with endothall/triclopyr

2014 Veliger Lab (as of 9/22/14):

- Samples received 58% completed
- Lab closed between 10/3-10/17
- 1160 samples received (370 MT and 790 out-of-state)
 - Dreissenids found in 2 out-of-state samples

- Corbicula found in 3 out-of-state samples

Legislation:

- Rulemaking postponed until after 2015 legislative session

2014 Watercraft Inspection Stations (preliminary data):

- 20 watercraft inspection stations (6 roving, 8 border, and 6 internal highway stations)
- Operated Memorial Day – Labor Day for most except some eastern MT stations opened later in the season due to staffing difficulties and Coram station opened earlier in season
- An additional roving station based out of Fort Peck was operated in September primarily to inspect hunters
- Estimated #'s: 30K boats inspected, with about 25 % from out-of-state
 - 1. About 1% of boats failed inspection:**
 1. 3 Dreissenid mussel fouled boats intercepted:
 1. Dillon Station – 6/13/14 – from MI bound for IN, dead ZM, ext. decon performed.
 2. Hardin Station – 6/23/14 – from ON (Lake Ontario) bound for WA, dead zm, ext. decon performed
 3. Hardin Station- 6/27/14 – from Lake Erie, OH bound for Missoula, MT; int. & ext. decon performed
 2. EWM: 27
 3. Marine organisms: 10
 4. Standing water: 93
 5. Vegetation (not EWM): 107
- QA/QC –successfully completed again in 2014 with the first round in late June and the second round in late July, an improvement was noticed between the two rounds so the system seems to help
- Fish Violations:

Occurrences of Illegal Live Fish in 2014				
Date	Location of Incident	Waterbody Source	Species	Region
5/27/2014	Coram Check Station	Lake Five	30 yellow perch	1
6/7/2014	Thompson Falls Station	Noxon Reservoir	1 smallmouth bass	1
6/15/2014	Hardin Check Station	Yellowtail Reservoir	1 Smallmouth Bass	5
7/1/2014	Wolf Creek Bridge	Holter Lake	8 yellow perch	4
7/2/2014	Wolf Creek Bridge	Holter Lake	2 walleye, 1 yellow perch	4
7/5/2014	Thompson Falls Station	Noxon Reservoir	trout (no number available)	1
7/5/2014	Ronan Hwy Station	Kicking Horse Reservoir	5 bass	1
7/10/2014	Thompson Falls Station	Noxon Reservoir	1 northern pike, 3 perch	1
7/18/2014	Thompson Falls Station	Noxon Reservoir	2 yellow perch, 2 pike, 3 bass	1
8/16/2014	Thompson Falls Station	Noxon Reservoir	1 yellow perch, 6 smallmouth bass	1
8/27/2014	Thompson Falls Station	Noxon Reservoir	4 yellow perch, 1 smallmouth bass	1

- Bait Violations:
 1. Helena Roving: 1 case of out-of-state leeches, no bill of sale
 2. Billings Roving: 1 case of out-of-state leeches, no bill of sale

3. Hardin: 2 cases of out-of-state leeches, no bill of sale

Montana Department of Transportation Update (as of 9/29/14):

- Between 2012-2014, 205 total vessels permitted
 - 2012: 17
 - 2013: 113
 - 2014: 75

Final Destination (2012-2014):

- Montana: 25%
- Passing Through: 75%
- 2014 Vessels passing through MT were destined for:
 - AB -7 (5%)
 - BC - 3 (2%)
 - ID - 116 (75%)
 - ND - 12 (8%)
 - WA - 2 (1%)
 - WY - 14 (9%)

AIS Coordinator Position:

- Timeline:
 1. Advertisement closed 9/2/14
 2. Interviewing mid-October

Alberta (K. Smith) – Completed 4,000 inspections – of those, busiest stations were on the eastern borders. All high-risk boats originated from the Great Lake states and Winnipeg. Only about half the boats were stopping. Conducted 25 hot water washes for unidentified species. Conducted a sniffer dog pilot that received lots of publicity. Monitored 74 water bodies – no positive hits, but the province wants to move toward a multi-taxa monitoring approach. Drafting response plan with stakeholders. Transport officers have been attending WIT II training. Of 2 cases with live mussels, one was a small, wooden, restored sailboat – the boat was never moored in one place and was in the water for only 3 days – had live attached zebra mussels on the boat. He submitted it for voluntary quarantine for 30 days. Need legislation to support mandatory inspections (will likely occur this spring). *Clean, Drain, Dry* and *Don't Let it Loose* will be campaigns in 2014. Flowering rush and Prussian carp are the two main AIS Alberta has. Hoping to have a large presence at the U.S. border, where about 50 boats a day cross in March of each year. Federal Fisheries Act will list both mussels and four types of Asian carp will be listed as prohibited in the province. Lake Winnipeg eradication was successful in the four bays in which it occurred, but they are now finding a lot more mussels in other locations in the lake, so they're working on containment.

Idaho Department of Agriculture (F. Knight) – Yesterday, the last of the 15 inspection stations were closed for the year. Did 49,000 inspections in 2014, 500 hot washes (high-risk watercraft), found 14 fouled vessels this season (only one had live mussels suspected from Lake Powell). 7 of 14 infested waters came from eastern waters – the remaining from Powell, Mead, and Pleasant. Most coming from the east are destined elsewhere, and they are usually dry (coming from storage). Idaho is a conduit. Of the vessels in mussel-infested waters the previous 30 days, most came from Lake Powell, then Havasu, Mead, and others. From 2010–2014, 2,000 boats came from Lake Powell – all other lower Colorado River boats don't total more than the total coming from Lake Powell. Havasu, Mead, and Powell boats are destined for PNW, Canada, etc. Lake Mead boats are more localized in terms of their

ultimate destination – Columbia River Basin. Survey – 590 plankton tow samples in 60 water bodies – no dreissenid mussel detections, but have found new populations of Asian clams, flowering rush, EWM. EWM is sent off for analysis to determine if it is a hybrid (which doesn't respond the same as herbicide).

Columbia River Intertribal Fish Commission (CRITFC) (B. Parker) – Blaine submitted a proposal this spring to Bureau of Indian Affairs to beef up and create late fall/early winter monitoring, but it was not funded. Conducted AIS training for individuals that work in the Columbia River gorge to look out for boats that are suspicious and may be transporting AIS.

British Columbia (M. Herborg) – No inspection stations in BC this year, but did an enforcement blitz – looked at 200 boats in SE BC at borders and at lake sites. No boats were intercepted. A total of 49 of the 50 boats were wake-boarding boats (we need to work on outreach with the wake-boarding community). Working on predicting high-risk lakes for British Columbia. Working on BC ZQ Rapid Response Plan – working on getting provincial species plan finalized first. Started doing some preliminary AIS plant surveys. *Spartina* eradication is going well with assistance from the Washington Department of Agriculture (air boats). Discussions with BSF (federal emergency registration) to use product in Canada, but the manufacturer is interested in pursuing registration in Canada. Northern pike (Kalispell tribes) surveys to prevent downstream spread. Working on an invasive species database for British Columbia (presence, treatment, surveys, with smartphone application) – the product will be online in 2016.

Portland State University (S. Wells, M. Sytsma) – awarded a new BPA project to develop a mussel subcomponent to a SQL model (hydrodynamic and water quality model) for the ZQ mussel to predict, given abiotic and biotic parameters, where in a water body the mussels will thrive. Will be looking at growth rate of juveniles and adults at different depths from San Justo Reservoir (San Benito County, California) and applying it to water bodies in the Columbia River Basin. Foul release – another BPA project – pulled out 27-month emersion treatment panels from San Justo Reservoir– panels look great (we know the coatings are effective and are testing how long they remain effective). In 5 months, the zebra mussels completely colonize the panels (and anything else – substrate, etc.). The mussels are attaching on the exposed pockets of the panels.

The Oregon Invasive Species Council asked the Council to submit a \$10 million proposal to the Governor – other agency requests totaled \$63 million. Will probably be \$13 million available, and the Council may receive some of those funds.

IV. PERIMETER DEFENSE (S. PHILLIPS, M. HERBORG)

- **DEFINITION:** Using state federal, tribal and local resources in a combined cost effective interjurisdictionally coordinated process to prevent mussels (and other watercraft vectored AIS) from entering uninfested areas AND to contain AIS at their source
- **Organizations that have expressed an interested in perimeter defense (PD):**
 - **Pacific NorthWest Economic Region (PNWER)** (and its Invasive Species working group) have been advocating perimeter defense (PD) for more than 2 years.

- PNWER has WDFW funds for PD planning – November 21 Meeting, Seattle, WA – They want to convene all groups.
- WAFWA “Concept: Multi-State Prevention and Containment WID Zones - lets make best use of that money (current spending rough estimate \$15-\$20 Million being spent by state local and federal agencies in the West and Canada)
- **Great Northern Landscape Conservation Cooperative:** AIS Committee, also interested in PD – upcoming conference call 9/22 - interest in participating - funding available
- **Canada** discussing multi-Provincial effort
- **CRB AIS COORD MT, OR, WA, UT, ID AIS:** Met 8/21 to Discuss PD
- **8/21:** Change concept to “Filtration Defense (©JN) - Multilayered Perimeter” “Regional Defense” (© TW) “Multi-State Prevention and Containment “
- **WISCE met 9/16 and formed a working group**

Perimeter Defense RE- Energized

- **PD Energized - WRRDA - Water Resources Reform Development Act (signed June 2014):** “. . . the Secretary may establish watercraft inspection stations in the Columbia River Basin [CRB] to be **located** in the States of Idaho, Montana, Oregon, and Washington at locations, as determined by the Secretary, with the **highest likelihood of preventing** the spread of aquatic invasive species at reservoirs operated and maintained by the Secretary.”. . . ~ \$20 million **authorized**

BUT FY2015 (E@W Approps Comm): No funds appropriated - CR for 2015, so 2016, hopefully some appropriations? If the WRRDA funds were to arrive, we need a plan – should we put Corps funds on the perimeter? What if these funds can only be spend on projects – what is the best use of the funds?

Fundamental Principal: We will never be able to stop all of the boats - Boater AIS Education always important
Short Term PD Strategy: Work with what we got, and optimize it, and advocate for what we “need” on the state and federal level in both policy and funding.

LONG Term: Plan for a lucrative future (e.g., WRRDA)

Strategy, Basics: PD =Multi-State/Provincial Prevention and Containment (Priorities © ISDA)

PRIORITY 1: CONTAINMENT AT THE SOURCE - Prevent mussel transport from mussel-infested waters by source decontamination/management. **Fundamental Principal:** Most cost-effective. But may also be a short-term solution because more and more water bodies are becoming infested over time.

STATUS

- Mead – improvement with NDOW taking over - we are seeing fewer Mead boats
- Powell – moving in the right direction with cooperative AZDGF, UTDNR and GCNRA working “together” - a “few” Powell boats have been intercepted in 2014
- Great Lakes GAP - Minnesota is a growing concern

ACTION

- Working Group on AIS regulations on Federal lands (DC) - there will policy options on how to address issues - more of a state of the regulations document (Late Fall)
 - “We” need to keep pushing for federal regulations and transfer of AIS off F.L.

- **Fundamental Principal: Source Containment** must be one of the highest priorities for regional defense – remember night traffic.

PRIORITY 2: PREVENTION AT THE BORDERS

CURRENT STATION OPERATIONS

- Programs operated by the states (CRB WY UT NV Canada spending \$ 5+ million/yr)
- STATIONS are open when there is the most traffic (summer, daytime) and opening dates are matched to traffic (e.g. Idaho snowbird traffic)
- Night traffic gap

PRIORITY 3: PREVENTION LAKESIDE/RAMPSIDE.

- Locally driven watercraft inspection (Lake Tahoe, CA Lake Whatcom, WA, Diamond Lake, WA: 80 stations in California, Canada entering the game)
- Benefit – can close access to waterbody; Cost: \$\$\$ to implement widely
 - GAP/ACTION: Incorporate as part of a comprehensive plan, especially for high-risk waters and Considering WRRDA. What if \$\$\$'s are to be directed at individual waterbodies?
 - Consider recommending waters that should have ramp side (or roving stations)?
 - Based on water chemistry and traffic? See Wells and Counihan (2010)
 - E.g., Fort Peck (has roving), MT Wild Horse Reservoir, NV

NEXT STEPS: Develop a Rapid Response/Perimeter Defense Plan - Important to guide WRRDA funds, but in the interim, we need to reduce fouled watercraft entering region as far away from the CRB as feasible and coordinate/optimize/enhance WIS/D operations. **Comment: WRRDA is strictly worded – if we're counting on it, it may be time and energy ill-applied because of how strictly worded it is for US Army Corps of Engineers facilities. But the Corps has an Aquatic Pest Control (used in the East) that allowed them to use federal dollars off federal lands – this could be revived, and if so, would provide a mechanism to assist the states with funding.**

A. Strategy: Geographic Scope

- Should “Our” planning focus on CRB (WRRDA language is the 4 states) - include UT, NV, WY, BC, AB
- Add layers
 - CO/NV/UT - push for addition of roadside
 - Canada - Lake Winnipeg – Federal HWY inspections
 - Great Lakes: Put stations on 100th Meridian?
 - Per H.R. 2732 (2001, Baird): Stop Westward Aquatic Threats Act (act called for watercraft inspection stations on the 100th meridian)

B. STRATEGY: Containment at the Source - Increasing Coverage

TASK: Federal agencies responsible for a waterbody need to fund WIS/D activities (less reliance on USFWS) - emphasis on positive waterbodies. Continue to seek broad mandatory federal agency rule for WI/D (see drone rule, “picture” proposed rule), e.g., Aquatic Invasive Species - The Committee remains concerned about the rapid spread of quagga and zebra mussels in the West. The Committee directs the Secretary of the Interior, within 120 days of enactment of this act, to develop rules requiring the significant reduction of the risk of the spread of aquatic invasive species from federally-managed waters including the mandatory decontamination of infested boats

leaving federally-managed waters that are infested with zebra and quagga mussels, including Lake Powell and Lake Mead. Further, the Committee directs the National Park Service to provide no less than \$X,XXX,XXX for quagga, and zebra mussel containment, prevention, and enforcement and prioritize the decontamination of watercraft and equipment leaving the watersheds of contaminated bodies, including Lake Powell and Lake Mead.

C. STRATEGY: Increasing roadside coverage

TASK: Increase Coverage (Short Term)

2015

Oregon to increase I-84 coverage in 2015 (open in March)

Idaho proposing to add station in 2015 (Clark Fork Hwy 200)

Utah will have more roadside coverage in 2015

Canada ramping up

STRATEGY: Night traffic – How to proceed?

TASK: - BIG ISSUE, programmatically possible but expensive

Decontaminate at the source!

Staffing (including enforcement), safety issues at remote locations

OR and WA only states to say “maybe”

Decision: Thoughts on night stations - Is it worth it? **Comments: Some states will not manage night stations (safety and other issues). ODFW has located a camera that would function to observe night boats. If Utah and Nevada are able to get done what they need to get done, we'll catch most boats during open check station hours. Apply a different metric to commercially versus recreationally hauled boats.**

Decision: Research on night traffic - yes?

D. STRATEGY: Coordinating Station Operations

TASK: Coordinate Station Operations into a seamless management scheme of reciprocity - Building Consensus

- Improved natural resource protection against AIS
- Increased efficiencies of state and agency fiscal and human resources
- Improved customer service to boaters and anglers
- WI/D are being conducted similarly (UMPS and WIT II Training) – leads to reciprocity, but still being trust and multiple regulations being discussed on
- WID Reciprocity: The ‘acceptance’ of another entities’ boat inspection seals and receipts.
- Work in progress

TASK: Regional Electronic AIS Data Sharing System for Watercraft Inspection and Decontamination (WID)

COPW funded by Britton (USFWS) - we'll try again - being used by CO/NM

- COPW (Brown) is reaching out to states to participate

E. STRATEGY: GAP IDENTIFICATION - RISK ANALYSIS - we need to figure out where boats are going, what we are missing, for best use of \$\$\$\$\$ - IEAB 2010 – “more research about like modes and locations of mussel introductions, including numbers and origins of trailered boats, and application of such information to prevention programs, might help allocate prevention resources and improve economic estimates.”

GAP: Boater movement – but we don't have enough detailed multi-state data on timing, source and TOTAL #'s of watercraft

- What route traffic are we missing? Prioritize WI/D based on risk
- Build upon ISDA has best data w/GIS
- Related: night traffic (Research PSU)

F. STRATEGY: DATA MANAGEMENT

DATA: PSMFC (2012-2014) collected WI data @ CRB states, WY– location, dates open, hours of operation, total effort, interceptions by station

2015: Add Utah, NV, CA, CO, NM, rampside, Feds, Canada

TASK: Expand Database Fields

Add # inspections per station (weighted by hours) by day

Add high-risk boats (versus just fouled)

Costs per station

Comment: ADD whether the boat is commercially hauled or not

TASK: Send an email to AIS coordinators and others to obtain better database - Seek additional boating pattern data - what else is out there? Broader regional database of boater data. Is it worth it?

Comments:

- **Are we systematically collecting information on how many boats are not meeting *Clean, Drain, Dry?* This gives us a much better sense of risk. We have a campaign. We need to broaden our thinking that ZQ are the only threats – to think about this in a holistic manner anywhere we can, will enhance our protection in the future. Try to have a washing protocol for anything leaving one area and moving to another.**
- **ABYC meeting (boats in Las Vegas) – add language to boat owner manuals to pull the plug in your boat.**
- **Most of the people we see have drain plugs pulled (if they're coming in from another place). Oregon could start tracking whether or not the drain plug is pulled. All states need to record whether or not the plug is pulled on their boats when they go through inspections.**

SUMMARY

- Think of PD/RD as multi-state/provincial prevention and containment
- Geographic scope of defense is CRB and neighboring states/provinces (WY, CA, UT, NV, BC, AB) – and incorporate more broadly as opportunities arise
- Priority WIS layers of source/borders/lakeside (roving)
- Fundamental principal is source containment – highest priority, continue to seek federal containment rule
- Utah Nevada and Colorado – seek increased roadside emphasis
- Eastern Flank – Great Lakes – work to do – seek a federal highway system WIS? (Baird)
- Seek coordinated opening/closings of WIS between jurisdictions (with WISCE/Building Consensus)
- Boater Traffic GAP/Data:
 - Night traffic: research

- Trial run night station?
- Broader watercraft traffic (risk) dataset
- Etc.

Western Perimeter Defense – Canada

Training

- Of enforcement staff across western Canada; protocols and training for inspections and decon; provincial natural resources
- Challenge is the Aquatic Invasive Species Regulation – Federal Fisheries Act
 - Proposing to: prohibit importation, live transport, and possession of Asian carps and ZQ – but it keeps getting delayed; current timeline aims for Fall 2014-Spring 2015. Draft legislation is in place, and it will go through 2 hearings.
- Monitoring – monitoring protocols are standardized across the PNW including Alberta and BC
- Perimeter defense presents some problems because of Lake Winnipeg . . .
- Building a regional defense can occur through PNWER
 - Support from Fed. Minister of Agriculture - \$2 Billion – but each province has to match the federal funds
 - Each province has to apply for individual funding – New West Partnership (BC, AB, SK) can be an umbrella
 - Allows for inspections and contaminations
 - Expand existing boat inspection programs within the provinces and on our eastern edge – in coordination with the United States
 - Create capacity to support CBSA staff with boat inspections and decontamination
 - Enhance our rapid response tools by working with pesticide regulators

Have been working with Manitoba to help them become more effective, but transferring funds across provinces is difficult. A lot of money is being spent on Asian carp in the provinces, but not ZQ mussel.

Comments:

- **We need to encourage and work with the province to take aggressive steps to ensure Winnipeg boats are not traveling. A concern exists that Manitoba has not expressed an interest in mandatory language or mandatory highway inspections.**
- **Should we (the United States) develop inspection stations at our northern points – Oregon protecting the southern flank, Washington protecting the northern flank, and Idaho protecting the eastern flank . . .**
- **Ballast water was the pathway to the Great Lakes, so we can't disregard, in terms of priority, the Columbia River port, Stockton, CA, etc. Should we create statutes and regulations that require additional treatment of ballast water for our ports? Oregon DEQ is pursuing stronger ballast water at the state level. 2018 is the next opportunity to address federal legislation on ballast water (VGP). For perimeter defense, we need to look at the marine "back door" – ballast water.**
- **Where is the agenda on invasive species within the Columbia River Basin Treaty negotiations? There is resistance to incorporating AIS issues into the Treaty negotiations. But the Tribes could**

take a leadership role in driving the AIS agenda in the Columbia River. Ecosystem services aspects will be incorporated.

- If there are gaps we are not catching with Watercraft Inspection Stations, we should identify what those gaps are, and begin collecting a common set of data (common inspection form). The Building Consensus group has an action to develop a universal inspection sheet.
- Can we collaborate with Canada to look at invasion risk as a whole?
- Boater movement data: The benefit of gathering the data is that it transcends the QZ issue – you can use that data for whatever is carried by the boats. That data is always collected on most forms.
- Outcome of PNWER meeting – Includes border protection in US and Canada – put together a roadmap (best case scenario) and steps to get there to guide decisions in their own states. **Comment: But how do we build support from the non-PNWER states?**

PNWER meeting will occur – November of 2014 – it will include people outside of PNWER. There's a message that can be sent to corporations, private sector, and entities with funding. We need to define roles and responsibilities for all next steps moving forward (for PNWER, Building Consensus, Great Northern LCC, e.g.).

V. PROGRESS WITH FEDERAL AGENCY INFORMATION CONSULTATION AND INTERNAL COMMUNICATION EFFORTS ON CRB DREISSENIDS (L. DEBRUYCKERE)

Background – We Took Action

- Preventing an Invasion – May 2013 – 90 people
 - Goal: Develop regulatory/policy, outreach, funding, and research actions to address dreissenid barriers and challenges in the PNW
 - Hosted by NPCC, PSMFC, PSU, PNWER
 - Outcomes
 - Declaration of Cooperation – 24 signatories
 - Action Plan
 - 33-member Vulnerability Assessment Team
 - 38-member Rapid Response Working Group

Progress

- Updated CRB documents (control options/permitting)
- Developed state RR plans for Oregon and Washington
- Conducted a contingency planning exercise for OR and WA in 2013
- Addressed pesticide registration/efficacy issues by state
- Created a magic website – westernais.org (goes live this Friday)
- Initiated discussions with NOAA-NMFS and USFWS to address ESA issues (a programmatic consultation, sort of ...)
- Developed Best Management Practices
- Identified pesticides likely to be used
- Set goals and geographic scope

Next Steps

- Mechanism to designate PSMFC as the non-federal representative in preparing a biological assessment or convening signatory agencies to collaboratively conduct an informal programmatic ESA Section 7 consultation with federal partners
- Potential letter from PSMFC to USFWS and NOAA to request designation as non-federal lead convener
- Implement an in-reach communications plan with the federal and state partners
- Obtain buy-in to invest resources in discussions and document preparation – BA

VI. RAPID RESPONSE GROUP EXERCISE (L. DEBRUYCKERE)

Workshop participants split into 2 groups to use the decision-making framework, best management practices, and Washington and Oregon Rapid Response plans to work through issues, actions and protocols leading to a management action, identifying key barriers, challenges and questions for further action items. The Washington group address a dreissenid introduction on Lake Washington, and the Oregon group addressed a dreissenid introduction on Prineville Reservoir. Bob Kibler, USFWS – Boise, was on the phone to address, with Jana Grote, permitting issues associated with EPA.

Washington scenario (led by A. Pleus – site: Lake Washington)

1. Notification of rapid response action

- ▶ Affected stakeholders (marina, state & federal agencies, county, tribes)
- ▶ Public notification/media release and management

2. Declare quarantine area – Just the marina (WDFW). Statute requirements: notification. County emergency management system to augment. In this case also Harbor Patrol – Seattle

- ▶ Law enforcement: Containment of all vessels on water. Marina operator (notify of quarantine process). Officers at every boat launch to limit access. Floatplanes cannot leave.
- ▶ Quarantine notification per RCW

Message to rest of the people on lake: Clean Drain Dry

- ▶ Decontamination of all boats in marina – can quarantine if all boats if can't be cleaned immediately.
- ▶ Resources required: complex – industrial activities. If whole lake to be quarantined, could be very complicated – would require National Guard. Heavily congested urban area.

3. Implement actions to contain infestation – enhance isolation. Physical aspect of containment (breathing room to discuss/negotiate treatment)

- ▶ *How would we close that particular marina? Every situation will be different
- ▶ Samples taken & analyzed in a matter of days (from entire lake) – while treating continuing to monitor (adults and veligers).
- ▶ Limno curtain installation – initiate process to get ASAP
- ▶ *How quickly can we get? Where we can we get a limno curtain?
- ▶ Assume it takes 10 days to get curtain in
- ▶ WDFW has capital asset team that can install curtain (manpower, resources)

4. Notify federal and state agencies of management actions required

- ▶ NOAA, NMFS and FWS, Dept of Ecology, Dept of Ag. Emergency Hydraulic Permit Application (HPA)

5. Obtain Hydrology information/map

- ▶ *What are water temperatures? Are mussels spawning? ~ typically below spawning temps
- ▶ Inflow and drinking water considerations
- ▶ May likely require a Section 10 permit (not a Section 404 permit) from the Corps

6. Chemical treatment selection: Zequanox® or copper sulfate preferred?

- ▶ Fish considerations: Outside of window for threatened species
- ▶ Sooner get chemicals in the water, efficacy of rapid response likely increases (better chance of containing) – do this while
- ▶ *Option: Use Zequanox® until curtains can be obtained and then move to copper

7. Obtain permits required

- ▶ Would this be considered for an Emergency Consultation? FWS and NOAA would decide. Depends on timing. If emergency, would consult after the fact.
- ▶ Prohibited level one response in WA: EMERGENCY, rapid response required
- ▶ NPDES state-wide permit (have already for Zequanox® and copper sulfate)

Dept of Ag has NOT registered Zequanox® for open water – need permit and could take weeks!

Expediency: Copper sulfate might be a faster process since already listed (Dept. of Ag.) under NPDES

*Have ability to go to Governor's office for emergency situation – could request expedited process to apply

Zequanox®

- ▶ Other areas to explore:
 - ▶ Legislative appropriation?
 - ▶ Permits in place beforehand
 - ▶ Stockpile of the chemical and the barrier
 - ▶ RAPID RESPONSE KIT (like oil spills, tsunami debris response)
 - ▶ Education & outreach on possible treatment options
 - ▶ What is response to public outcry if concerned about safety of products?
 - ▶ Develop materials & fact sheets in advance
 - ▶ Ideas about physically removing adults found in marina
 - ▶ Need to look at time of rollout of a chemical
- ▶ Zequanox is acutely toxic to juvenile salmonids

Oregon scenario (led by R. Boatner – site: Prineville Reservoir)

- **Notifications:** Director and contact FW and NOAA, Warm Springs Tribe, City of Prineville, BLM, Irrigators and law Enforcement
- Public Outreach Group Engaged
- Closed to boater and all human access
- Can we restrict water releases?
- We will approach decision of treatment of local or whole lake with CuSO₄ – binds with sediment

- Conduct survey of depth and surface area to calculate area to be treated
- Assure temperature regime is appropriate for Copper
- Consult with irrigation and BOR for models of inflow and volume
- Evaluated T and E, and consult again with NOAA, FWS
- Retain all water in reservoir and determine minimum flow requirements for basin- can alternate sources be used?
- Calculate dosage for chemical for treatment from ODFW
- Verify ODFW pesticide application plan includes CuSO4 for Quagga and Zebra
- Where is the label in our treatment document and recommended treatment dosage?
- Whole lake treatment is recommended, and consult with NOAA to go for the whole lake
- Contact appropriate group for curtain and barriers
- RR Team is ready for this treatment assistance (trailers, bodies)
- Post Treatment monitoring of copper in dissolved and sediment fraction should occur for one year
- We will open the reservoir after safe levels are determined
- Monitor downstream after flows resume after consulting with irrigation district
- Approach reimbursement options Oregon Invasive Species Council, Federal Funds?
- Problems: If we have issues with temp/approvals we could treat with Zequanox? What assurance do we have for this situation?

PREVENTING AN INVASION – MAY 2013 – 90 PEOPLE (L. DEBRUYCKERE)

Develop regulatory/policy, outreach, funding, and research actions to address dreissenid barriers and challenges in the PNW – hosted by NPCC, PSMFC, PSU, PNWER

- Outcomes
 - Declaration of Cooperation – 24 signatories
 - Action Plan
 - 33-member Vulnerability Assessment Team
 - 38-member Rapid Response Working Group
- We're making progress . . .
 - Updated CRB documents (control options/permitting)
 - Developed state RR plans for Oregon and Washington
 - Conducted a contingency planning exercise for OR and WA in 2013
 - Addressed pesticide registration/efficacy issues by state
 - Created a magic website – westernais.org (goes live this Friday)
 - Initiated discussions with NOAA-NMFS and USFWS to address ESA issues (a programmatic consultation, sort of . . .)
 - Developed Best Management Practices
 - Identified pesticides likely to be used
 - Set goals and geographic scope
 - We've got a ways to go . . .
- Mechanism to designate PSMFC as the non-federal representative in preparing a biological assessment or convening signatory agencies to collaboratively conduct an informal programmatic ESA Section 7 consultation with federal partners
 - Letter, MOU, or a handshake

- Implement an in-reach communications plan with the federal and state partners
 - Obtain buy-in to invest resources in discussions and document preparation – BA

From Bob Kibler via email: Determining Who to Contact for Consultation - Emergency or otherwise, with the FWS
<http://www.fws.gov/oregonfwo/Administration/ContactUs/>
http://www.fws.gov/wafwo/offices_new.html
<http://www.fws.gov/idaho/Contact.htm>

ACTION ITEM: Explore the need for Section 10 and Section 404 permits associated with addressing management actions associated with dreissenid introductions.

VII. HOW A WATERCRAFT INSPECTOR CAN QUICKLY AND CONCLUSIVELY PROVE AN ATTACHED DREISSENIID IS LIVE (D. MOLLOY)

Inspectors have no problems spotting a live mussel if they see it gaping and moving – inspectors should consider to look for gaping mussels on watercraft. The problem is that a lot of mussels are closed on a watercraft. Three-stop protocol determines that a mussel is live – only a mussel that passes all three steps can conclusively determined to be live.

1. **Step 1** - Scrape off the mussels and place them in a tray of water, and immediately collect the sinkers. Closed mussels that sink have the greatest chance of being alive – collect the sinkers.
2. **Step 2** – Force the mussels to gape and see if they try to close – takes a few seconds to 1 minute per mussel. The mussel is forced to gape and tries to close.
3. **Step 3** – Place the mussel underwater to observe it naturally opening and closing – the definitive evidence that it is live. (Put it on a glue dot – the posterior of the mussel on the glue). This takes a minimum of one minute. One can observe the mussel for as long as one wishes.

Comment: Don't use your personal smartphone to take pictures or video because your phone will be confiscated as evidence.

VIII. HYDROXIDE STABILIZATION AS A NEW TOOL FOR BALLAST DISINFECTION: EFFICACY OF TREATMENT ON ZOOPLANKTON (C. MOFFITT)

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Effective and economical tools are needed for treating ship ballast to meet new regulatory requirements designed to reduce the introduction of invasive aquatic species related to ship traffic. We tested the efficacy of hydroxide

stabilization as a ballast disinfection tool in replicated, sequential field trials on board the M/V Ranger III in waters of Lake Superior. Ballast water was introduced into each of four identical 1,320 L stainless steel tanks during a simulated ballasting operation. Two tanks were treated with NaOH to elevate the pH to 11.7 and the remaining two tanks were held as controls without pH alteration. After retention on board for 14–18 hours, CO₂ rich gas recovered from one of two diesel propulsion engines was sparged into the tanks treated with NaOH for a period of 2 hours to force conversion of NaOH ultimately to sodium bicarbonate thereby lowering pH to our target of about 7.1. The engine exhaust was treated, prior to use, by a unique catalytic converter/ wet scrubber process train. Following carbonation, the contents of each tank were drained and filtered through 35 µm mesh plankton nets to collect zooplankton. The composition and relative survival of the contents of each tank were evaluated in the laboratory by microscopy. Zooplankton populations were dominated by rotifers, primarily *Keratella earlinae*, but also included copepods and cladocera. Hydroxide stabilization was 100% effective in killing all zooplankton present at the start of the tests. Our results suggest hydroxide stabilization has potential to be an effective and practical tool to disinfect ship ballast. Further, the end product of the reaction utilized provides an increase in alkalinity as well as a net reduction in ship engine CO₂ emissions.

IX. FLOWERING RUSH (*BUTOMUS UMBELLATUS*) SURVEY (RAVENNA GRASS UPDATE) IN OREGON (R. MILLER)

- Class A weed in Oregon and Washington – Eurasian native - has emergent and submergent phenotypes – can grow in full depth pools up to 20 feet deep – dispersed via rhizomes and bulbils – can clog irrigation canals – has both ecological and economic impacts
- Showed up in 1949 in the Snake River and in 1967 in Flathead Lake. In 2008, it showed up in the Yakima River.
- Conducted surveys in August of 2014 along the Columbia River (Lake Wallula, Lake Umatilla, McCormack Slough, McNary Wildlife Ponds) – focused on protected, shallow waters where it is more likely to establish.
- All OR detections above McNary Dam – 5 of 6 sites in protected areas.
- ODA and USACE are looking into eradication via permits – possibly diver dredging – a meeting will be held in October re: how to deal with the infestations.
- Also detected Ravenna grass (*Tripidium ravennae* spp.) – proposed as a Class A noxious weed in Washington.
- Also detected disc waterhyssop (*Bacopa rotundifolia*).

X. AIS WEBSITE LAUNCH (L. DEBRUYCKERE)

<http://www.westernais.org>, which will launch by the first of next week, features information on aquatic invasive species in the West.

XI. INVASIVE TUNICATE WORKSHOP SUMMARY AND KEY NEXT STEPS (L. DEBRUYCKERE)

An invasive tunicate workshop was held in August 2014 to discuss the environmental and economic risks associated with non-native tunicates; share information, efforts, successes, and challenges; identify management

options, research needs and funding priorities; and determine if a regional management plan is needed, and if so, create an action plan to inform scoping and development. The group decided that the Western Regional Panel on Aquatic Invasive Species would request that the Pacific Marine States Fisheries Commission take the lead in convening regional entities to scope the development of a regional plan.

XII. MEMBER, ISSUE UPDATES (ALL)

- **Northwest Planning and Conservation Council**—Next week in Pendleton, Oregon, the Council expects to adopt a new web-based program with a special strategy devoted to invasive species.
- **VAT update**—Seattle district has completed their vulnerability assessments using BOR staff (L. Willett, etc.)
- **Watercraft Inspections**—Added non-motorized watercraft and have 15 inspectors – 8,700 inspections – Lake Whatcom and Lake Samish – 1,430 people took a course on AIS
- **Alberta**—Calgary, Alberta – January – evaluation of program

NEXT MEETING WILL BE MAY OF 2015