
COLUMBIA RIVER BASIN TEAM MEETING

May 13–14, 2014
Red Lion Hotel at the Park
Spokane, Washington

Attendees: Eric Anderson, Nick Bean, Rick Boatner, Steve Bollens, Sandy Christiansen, Lisa Clear, Tim Counihan, Lisa DeBruyckere, Hannah Dondy-Kaplan, Robyn Draheim, Amy Ferriter, Erik Hanson, Debbie Harkness, Matthias Herborg, Stacy Horton, Betsy Hull, Rayola Jacobsen, Carson Keeler, Carl Klein, Kave Klutz, Crystal Klym, Tamara Knudson, Scott Lund, Erin Mader, Todd McLaughlin, Ken Merrill, Christine Moffitt, Tom Moorhouse, Jordan Nielson, Jenifer Parsons, Jeffrey Pettingill, Stephen Phillips, Christine Pratt, Peter Rice, Jim Ruff, Jesse Schultz, Lisa Scott, Marcie Steinmetz, Michael Stephenson, Barb Stewart, Mark Sytsma, Pamela Tully, Steven Wells, Kate Wilson, Thomas Woolf. On the phone: Allison Begley, Tom McMahon, Karen Vargas, and John Wullschleger

EXECUTIVE SUMMARY OF ACTION ITEMS

ACTION ITEM: If you are not on the Columbia River Basin listserv, contact Stephen, and he will add you.

ACTION ITEM: Let Stephen know if you have changes to the meeting minutes from last CRB meeting, which have been posted on the 100th Meridian website.

ACTION ITEM: By close of business May 14, comments on FY2014 QZ Federal funding priorities are due to Robyn Draheim or David Britton.

ACTION ITEM: Lisa will notify everyone on the VA Team via email when updates are made to the Vulnerability Assessment report.

ACTION ITEM: Lisa will send Christine (Seattle City Light) examples of simple boater surveys conducted on site at boat ramps.

ACTION ITEM: If anyone has any suggestions or previous experience with *Corbicula*, contact Tom Woolf or Christine Moffitt.

ACTION ITEM: Robyn will distribute the PowerPoint and final report on Malloy's four-step process to determine whether or not live dreissenids exist when the report is completed.

ACTION ITEM: If you are interested in upcoming Watercraft Inspection Trainings, contact Stephen for D. Davis' address.

ACTION ITEM: When Stephen, Mark, and Tim hear about the results of the Great Northern Landscape Conservation Cooperative proposal, which would provide funding to develop a strategy for a watercraft inspection perimeter defense in the Pacific Northwest and provide additional funds for early detection monitoring coordination, they will communicate next steps with the CRB and discuss with PNWER.

ACTION ITEM: Stephen will send Water Resources Development Act language out on the listserv.

ACTION ITEM: Send in any comments on the non-native and invasive species section of the NWPC's [Columbia River Basin Fish and Wildlife Program](#) – comment period open until July 9.

ACTION ITEM: Webinar to discuss upcoming early detection monitoring season.

ACTION ITEM: Work with Kate Wilson to include Alberta's early detection monitoring locations for the upcoming seasons.

QUAGGA/ZEBRA MUSSEL ISSUES

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

Annually since 2012, ~\$1 million of USFWS funds have been allocated for quagga prevention with a focus on the lower Colorado River basin and containment. In 2013 and 2014, a stakeholder meeting was convened to inform funding allocation – this year, the meeting occurred May 1 in Phoenix, AZ. The focus for funding allocation proposed for 2014 is “**containment**,” which includes inspections, outreach, sharing data on boat movements, boat washes/decontamination, and watercraft inspection training. David Britton is currently drafting the RFP, which will soon be made available on Grants.gov.

ACTION ITEM: By close of business May 14, comments on these priorities are due to Robyn Draheim or David Britton.

Other topics discussed at the May 1 meeting:

- Prevention is important, but that topic isn't the highest priority for these funds.
- No match for these proposals is required, but welcomed.

Decontamination at source of infestation is critical – last year, \$902,040 was approved—Nevada received \$391,071 to establish cleaning stations at Lake Mead. Now that Lake Powell is infested, departing watercraft will need inspection, decontamination and enforcement.

The Park Service is dedicating \$2 million in FY2014 to QZ mussels for prevention, containment and enforcement at nine parks. The funding will be allocated as follows:

- [Amistad NRA](#) - \$70K
- [Bighorn Canyon NRA](#) - \$90K
- [Glacier NP](#) - \$60K
- [Glen Canyon NRA](#) - \$750K
- [Grand Teton NP](#) - \$50K
- [Lake Mead NRA](#) - \$530K
- [Lake Roosevelt NRA](#) - \$250K
- [Black Canyon NP/Curecanti NRA](#) - \$200K

Glen Canyon NRA is developing [Quagga/Zebra Mussel Comprehensive Management Plan](#) for Lake Powell. The plan reflects a change in direction and emphasis for mussel related activities at Lake Powell, from prevention to containment. The Superintendent of Glen Canyon NRA will be reaching out to the states of Arizona and Utah for assistance in developing an effective containment program for Lake Powell.

Other topics discussed:

- **Quagga Mussel Prevention and Containment at Glen Canyon** – NPS had scheduled discussing alternatives for the planning process in April, but they discussed near-term response for Lake Powell instead. At Glen Canyon, they will be focusing on containment and cleaning slipped and moored boats – and will make an effort to contact all exiting watercraft. It is the hope that Utah will be funded to administer decontamination stations - NPS does not have the funding to do so. A significant threat for Utah is recreational boaters leaving with water onboard. It is the intention of the NPS to notify boaters that their boats are potentially contaminated, that the boats should be cleaned, and that it's against state laws to transport a boat across state lines.

RESPONSE TO LAKE POWELL QUAGGA MUSSEL INFESTATION (J. NIELSON)

Utah can issue a [closure order](#) (ranging from requiring boats to decontaminate to closing the water body) – this acts in place of a control plan.

In Utah, it is illegal for someone to knowingly allow a boat to leave (a [class A misdemeanor](#)) an infested water with a dirty boat.

A wildlife board listing process and a control plan drafted by Utah Department of Wildlife Resources are needed for Utah to list a waterbody as infested.

Decontamination in Utah includes professional hot water decontamination (to Pacific States Marine Fisheries Commission [PSMFC] WIT II Standards) as well as inspect, clean, drain, dry (preferred method over hot water).

In 2014, quagga mussels were discovered in Lake Powell in colonies 24 miles upstream from Glen Canyon dam, and about 90 miles north of the dam. Utah considers this to be a reproducing population.

Efficiency measures:

- Allowing boats to come and go from the same location.
- Revised waterbody listing and delisting process
 - Three locations have been delisted ([Sand Hollow](#), [Red Fleet Reservoir](#), and [Electric Lake](#))
 - 2010 – found a single adult mussel in Sand Hollow Reservoir, but incident and supporting evidence was suspect
 - 2008 – found single zebra mussel veliger in Electric Lake and a single quagga mussel veliger from Red Fleet Reservoir – nothing has been found since
 - Only threat comes from [Lake Powell](#)
- [Bear Lake](#) spans both Utah and Idaho (ID does roadside inspection stations; UT will be doing roadside inspections at Bear Lake) (2 main roadways that enter the valley will exist in Utah, and the ID station will remain for the time being).
- Utah has planned roadside inspection stations at three locations at Lake Powell. The state estimates it would cost about \$1 million to inspect all boats leaving Lake Powell during 8–9 month of the year.
- Utah is working with the NPS to help Lake Powell Boaters succeed – a new flyer will have Utah and Arizona information to help boaters comply with state laws.
- Utah law enforcement officers are assisting NPS at boat ramps with boat tagging; 2 officers will be stationed at each of the major NPS boat ramps to give people a flyer, provide public information and tag their boats (Utah would like to move toward using a boat seal with documentation).
- Utah has mobile decontamination stations, which are not as efficient as the permanent stations
 - [Jordanelle State Park](#) and [Willard Bay State Park](#) will have the stations – boater access funds will be used to establish the stations.
- Lower Colorado containment
 - I-15 Port of Entry in 2013 – stopped 2 encrusted boats, inspected 1,272 watercraft, and worked with 2,881 people.
 - In 2014 – Utah received more funding from the legislature – has not seen any encrusted boats yet.
- Utah has been involved in local and national legislative interactions. The Utah Congressional delegation is interested in moving the AIS issue forward in Congress.
- Utah Division of Wildlife would like to enter into a possible contractual relationship once the plan is released. The contract would pay for boat inspections and tagging.
- Outreach efforts – launched a new campaign to brand invasive species as a “skiff-transmitted disease” in lakes – or “STD of the Sea”.

TOM MCMAHON, ARIZONA GAME AND FISH DEPARTMENT – Arizona summer intern has had a job to talk to boaters coming in – that intern will now be used to talk to boaters, assisting in decontamination, etc. Arizona would like to

work together with NPS and Utah re: law enforcement. Tom will be applying for some grant funding for the annual RFP.

REPORT ON DENVER AIS COORDINATOR WORKSHOP (L. DEBRUYCKERE)

The results of the Denver 2014 AIS Coordinator Workshop in Denver Colorado was shared. A copy of the report can be found [here](#). AIS Coordinators and several law enforcement and legal representatives met February 11–13, 2014 to reach consensus on training and certification minimum standards as well as sampling and monitoring and other definitions and protocols, discuss elements of a Quality Control Toolkit and Training Standards Toolkit, provide input into the model law final process, discuss data sharing and electronic reporting, and discuss the components of an effective seal program and reciprocity for low risk conveyances.

RAPID RESPONSE WORKGROUP PROGRESS (L. DEBRUYCKERE)

As a result of the outcomes of the [December 2013 Oregon-Washington Rapid Response Workgroup](#) meeting, the Pacific States Marine Fisheries Commission convened a meeting in March with the US Fish and Wildlife Service and National Marine Fisheries Service to discuss key next steps in preparing the Columbia River Basin for a dreissenid introduction, with the focus on navigating Endangered Species Act and permitting issues. PSMFC was tasked with providing three deliverables to advance the discussion – a decision matrix, best management practices, and case scenarios, all of which describe the individual steps, details, and decisions informing a control action. PSMFC shared the results of these three products. PSMFC will be meeting again with the federal partners on May 29 to advance discussions and make further progress on ESA and permitting issues.

FEDERAL LEGISLATION/ISSUE UPDATES

Quagga Mussel Listing – Quagga mussels are not on the injurious species list (Lacey Act) – making law enforcement difficult. It could take up to 5 years and cost about \$400,000 to list them administratively. The [Plaq Act \(HR 1823\)](#) was introduced in April of 2013 to protect lakes against quaggas. Some representatives do not want to see boaters overcriminalized. There's still hope in the [Lake Tahoe Restoration Act – HR3390](#) and S. 1451 (Feinstein), which includes exemption language for public water systems. This bill would be amended so that the Quagga Mussel listing language in the House would be added (to add the language involving the Lacey Act). But this doesn't solve the problem with Lakes Powell and Mead. The NPS is starting rulemaking for Lake Powell under NEPA, which takes a long time. So another solution is Lacey Act reauthorization, which has an emergency temporary designation for non-native wildlife taxon – (HR 996/S1153).

HR 4032 – North Texas Invasive Species Barrier Act of 2014: Lake Texoma, which spans state lines – zebra mussels - they received a Lacey Act exemption for zebra mussels. This bill passed the House.

Water Resources Development Act (S. 601) passed – Senator Baucus put funding authorization into this bill for AIS watercraft inspection stations, monitoring and contingency planning. The Act authorizes \$30 million for the CRB. Will be posted this Thursday. The next big question is how much will be appropriated.

The Federal Lands Invasive Species Control, Prevention, and Management Act (HR 3994) was introduced in February 2014 by Rep. Bishop (UT). The bill is an effort of the [Healthy Habitats Coalition](#). It includes a formula for invasive species allocation. Funding allocation would include 75% for on-the-ground control and management activities; 10% for admin costs, and 15% for research/education.

DOI Invasive Species Strategy based on EO 13122 (also called the Invasive Species Action Plan Challenge, ON-Off Federal Lands/Waters; Federal lands workgroup) – does not to authorize, fund, or carry out actions that will cause or promote the introduction or spread of IS to the extent practicable – federal waters should not be the source of IS – last week in Washington, DC – ANSTF update – a guidance document will lay out federal policy options for IS on federal lands. We are expecting to see further information on this effort in the coming months.

STATE/TRIBAL AIS PROGRAM INFORMATIONAL REPORTS

- Oregon (R. Boatner)
 - [Barramundi](#) – controlled species.
 - In 2013, Oregon conducted 800 boat inspections and 10 decontaminations. There was a 44% compliance rate.
 - In 2014, ODFW has 5 inspection stations now open; the Ashland and Ontario stations are open 7 days/week, while the Gold Beach, Klamath Falls and Lakeview stations are open 5 days/week (Wed–Sun).
 - The Oregon State Marine Board handles all law enforcement and AIS informational materials.

- Montana (A. Begley)
 - **2013 LEGISLATURE:** HB586 revised the AIS Act establishing [a statewide management area](#). Rule-making on this new statewide management area is pending.
 - **WATERCRAFT INSPECTIONS:** FWP has established 20 inspection crews: 9 highway stations on the border, 5 internal highway inspection stations, and 6 crews that operate at boat ramps on popular waterbodies. Crews will be trained the week of May 19, and deployed on a staggered basis starting that week. One station along highway 2 opened on May 1. We will be conducting secret shopper exercise for QAQC again this year.
 - **FWP EARLY DETECTION AND MONITORING:** Waterbodies surveyed in Montana are prioritized based on: previous years' work, angler/boater pressure, water quality data, risk of introduction, etc. AIS early detection and monitoring includes: invertebrate and macrophyte sampling, and plankton sampling for veligers (samples processed at the FWP lab in Helena). Priority locations for sampling include the 10 state, 3 federal, and 12 private hatcheries. We will have an additional crew going out to sample for aquatic weeds in 2014.
 - **SCIENTIFIC COLLECTING PERMIT:** For the first time, MFWP issued scientific collecting permits to researchers using plankton tow nets in Montana. The purpose was to increase the communication and knowledge on the extent of surveys in the state, as well as to tie MFWP into the potential for Rapid Response.
 - **DREISSENIID VELIGER LAB:** Montana's lab is processing the majority of plankton samples for the Missouri River Basin. The lab processed more than 1100 samples in 2013.
 - **BAIT:** Montana FWP is currently reviewing fish bait practices and regulations. There is a concern that current bait practices may increase the risk of importation of invasive species and/or pathogens into the State or increase the spread within the state, in addition to potentially impacting native minnow populations.

- Washington (J. Schultz, C. Klein)
 - WA will monitor every high risk water body in the state (200 sites), with a focus on the Columbia and the Snake Rivers.
 - Check stations – have mandatory check stations during boating season; will check for all AIS.
 - Alan Pleus facilitated the passage of an [AIS bill in the 2014 legislature](#) – lots of rulemaking remains to be done; changed classification system – 2 groups of 3 prohibited species; also have regulated levels 1-3 (3 is lower priority; 1 is highest); legislation changed relative to staffing the check stations – no longer requires enforcement staff; can use Washington Department of Fish and Wildlife (WDFW) staff, but funding package did not support the hiring of department staff. 15-20,000 vessel inspections occur throughout the year.
 - Tsunami debris – 3 boats just in the last month – ship samples to [Oregon State University](#) for identification.
 - [New Zealand mud snails](#) – WDFW will launch new AIS web page – one-stop shopping center for everything you ever wanted to know about NZ mudsnails – whenever you are doing in-water work in WA, it is mandatory you have a [Hydraulic Project Approval](#) (HPA) permit.
 - [Rusty](#) and [Red-swamp crayfish](#) – one company tried to hide these prohibited species and was given a \$3,000 fine and jail time.

- Nevada (K. Vargas)
 - [Wild Horse Reservoir](#) – drains into the Owyhee River (Snake River Basin) – inspection and decontamination stations will open in the next few weeks (part time at first, then full-time). At the state park, it will be mandatory decontamination before launch. There are low water conditions there already – the boat ramps

are not even in the water. Nevada expects to have less than 5,000 acre feet in the reservoir this summer. PCR testing and veliger detection was negative last year.

- [Lahontan Reservoir](#) inspection and decontamination stations are open. However, Lahontan is only at ¼ of its capacity right now – boat ramps are not in the water.
- Implementing two traveling rover crews for lakes where inspection stations do not exist; one will operate in the northern part of the state – the other in the southern part of the state. The southern Nevada station will be located near [Lake Mead](#) – decontamination unit and outreach will occur.
- Signed agreement with NPS to operate 3 stations. Nevada Department of Wildlife (NDOW) conducted 40 decontaminations – mostly boats headed to California. Average watercraft size is 34 feet. Takes about 12 hours average to clean a boat; one large boat took 90 hours.

▪ [Idaho](#) (T. Woolf)

- More than 3,755 vessels have been inspected to date; 198 hot washes on high risk vessels; 181 vessels that previously visited high risk areas in previous 30 days; all 14 stations will be in operation soon; working with Lake Associations to staff inspection stations at their locations.
- Survey initiated – plankton collection in Lower Snake River; [Shoshone Paiute Tribe](#) is collecting samples as well. Shooting for 700 samples from 80 water bodies this season.
- Idaho has found 7 fouled mussels to date in 2014; one commercially-hauled boat had live mussels attached.
- We need to prioritize our inspection activities based on risk – and contain at the source. Idaho has found that about 90 percent of boats arriving in the Northwest with live quagga mussels came from the lower Colorado River area; primarily Lakes Powell, Havasu and Mead.

NORTHWEST POWER AND CONSERVATION COUNCIL (J. RUFF)

ACTION ITEM: Jim Ruff distributed copies of the Non-native and Invasive species strategy section of the draft Columbia River Basin Fish and Wildlife Program and requested CRB members to review the proposed language and send in any comments to the Council on this draft section of the Program – the public comment period will be open until July 9, and public hearings will be conducted throughout the basin until then.

AIS COORDINATORS – [DENVER WORKSHOPS](#)

CANADA AIS PROGRAM INFORMATIONAL REPORTS

[Alberta](#) (K. Wilson)

- \$75 million cost estimate if invasive mussels infest Alberta.
- Lake Winnipeg in Manitoba is the world's 10th largest lake – found five attached zebra mussels in four bays in 2013 – closing four bays next week for one month, and will try a [potash treatment](#).
- Looked at calcium data; the western Canadian provinces are highly susceptible to both zebra and quagga mussels.
- In 2013, 7 boats bound for Alberta were intercepted in Idaho.
- Alberta now has an [AIS prevention program](#) – 24/7 hotline; will be developing a RR plan modeled after BC's plan; working on decontamination protocol for fouled boats; 700 boat ramp signs being produced this summer.
- Monitoring – 55 water bodies sampled in 2013; more than 70 will be sampled in 2014.
- Inspection stations – four in 2014 – they're piloting the use of weigh stations, but they are voluntary and are dependent on partnerships (e.g., fishery officers, commercial vehicle inspectors, etc.).
- Piloting the use of sniffer dogs ([Flathead Basin Commission](#) and Alberta government partnership).
- AIS policy and legislation – currently, only sea lamprey and zebra mussels are listed as prohibited
 - Will open up the act in the spring to amend prohibited species list and address boat inspection issues
 - Canada will make it illegal to possess/live transport, etc. live quagga and zebra mussels, Asian carp

British Columbia (M. Herborg)

- [BC Inter-Ministry Invasive Species Working Group](#) (IMISWG) – provide policy direction and coordination and collaborative delivery of provincial invasive species programs.
- [Invasive Species Council of BC](#) (Gail Wallin is Executive Director) is a strong partner working with the IMISWG.
- One key challenge is funding.
- Have a good reporting program and database.
- Did minor revisions to BC's [controlled alien species regulation](#).
- [Federal AIS Regulation](#) is proposed to prohibit the import, transport or possession of Q/Z mussels and Asian carp – if it passes, the border inspection stations could enforce the regulation – expected to pass during the summer of 2014.
- Training – focus is on identifying Q/Z mussels on trailered boats – Lake Winnipeg infestation
 - Trained law enforcement officers
 - Developed procedures around boat inspection decontamination and quarantine (based on UMPS II)
 - Set up reporting structure
 - Ran a pilot boat inspection station
 - Increased veliger monitoring (Portland State University protocols and training)
- Monitoring – 2012 – 8 sampling stations; 31 sites in 2013.
- 2014
 - Boat inspection program, if funding materializes
- Other AIS projects
 - [Northern pike removal with Kalispel tribes](#), [goldfish](#) removal in [Atlin Lake Hotsprings](#), [yellow perch](#) in the lower [Fraser River](#), [Spartina herbicide application on the West Coast](#)
- There is now a greater profile and awareness of the threat of IS because of the Lake Winnipeg infestation, Pacific Northwest Economic Region (PNWER) and other activities with local groups.

Boundary Invasive Species Society (B. Stewart)

- Nonprofit – [Weeds Across Borders](#) project – work on compliance – buy-in from local stewardship groups
- Worked with the [Christina Lake Stewardship Society](#) on outreach
- Region-wide program to survey high use access points and post signage

Central Kootenay Invasive Plant Committee (C. Klym)

- Nonprofit – 380 members.
- Aquatic Working Group first identified AIS as a high priority in 2010. In 2014, finalized a [5-year aquatic invasive species strategic action plan](#) and [priority species list](#).
- Conducting outreach and activities.
- 2014 priorities – veliger monitoring, surveys, awareness, bull frog citizen program, assess feasibility of billboards, strengthen partnerships, facilitate cross-border collaboration.

Invasive Species Council of British Columbia (G. Wallin)

- A lot of BC's work is focused on prevention and people taking responsible actions – changing behavior.
- Our [Clean, Drain, Dry program](#) has undergone numerous changes – based on need for personal contact, consistent messaging, and ensuring people take the right actions.
- Adopted an ambassador program, partnering with a local group to be the watchful group on their respective water body – lots of demand for this type of program.
- Also working with a province-wide group ([BC Wildlife Federation](#), [GO FISH](#), e.g.) – expose lots of outdoor enthusiasts to the messaging – we ask for a commitment, and then monitor.
- Will be offering webinars and a mussel workshop to share information.
- [2014 Fishing Regulations](#) include Clean, Drain, Dry information.
- Float planes, skidoos, etc., create different challenges.

- Developing a database whereby the public can report electronically, and the information is shared collectively with experts.
- Consistent lake signage at high profile boat launches.
- Next step is to work with Matthias and his team to pilot a project that focuses on the aquarium trade.

[Okanagan-Similkameen Invasive Species Society \(OASISS\)](#) (L. Scott)

- BC Nonprofit – in 2012, members opted to encompass invasive species.
- Focus of the program is on dreissenid mussels (an invasion in Okanagan Valley would cost an estimated \$43 million annually - Okanagan Basin Water Board-commissioned study); but there are also concerns with Asian clams, Didymo, and New Zealand mudsnails.
- Ways to deal with the issue:
 - Outreach – consistent messaging – “Clean, Drain, Dry”

PERIMETER DEFENSE (M. SYTSMA, PSU)

The concept is to push the perimeter defense for watercraft inspection stations to the borders of the PWN uninfested states to augment state inspection efforts. Individual state laws make it difficult to implement perimeter inspection stations. For the past 2 years, CRB states, including Wyoming, were surveyed to determine survey their respective inspection station effort.

Information needs to be collected to enhance modeling efforts that would allow us to identify the highest risk areas or the next most likely sites for an infestation once an introduction occurs.

A strategy was recently developed by US Geological Survey, Portland State University and PSMFC and proposed to the Great Northern Landscape Conservation Cooperative (GLNCC). The concept is to obtain GLNCC funding to convene a team to structure a perimeter defense for the Pacific Northwest, including a cost estimate. How would we optimally disperse that funding to get the most benefit of perimeter stations? Then once the states buy in to the program and its allocation, PNWER will be asked to support the proposal in Whistler, and steps will be taken to initiate contact with a federal delegation to obtain the necessary funding to support the program. The federal funding would *supplement* existing state inspection programs.

Discussion:

The [North American Invasive Species Management Association](#) may be a potential partner.

There is concern that if the locations of the perimeter check stations are advertised, haulers will avoid those stations.

If we don't get the funding in time to develop the full-blown strategy by the time the PNWER meeting occurs in July, then we can at least present the concept at that meeting.

No state or provincial partners objected to the concept.

ACTION ITEM: When Stephen, Mark, and Tim hear about the results of the Great Northern Landscape Conservation Cooperative proposal, which would provide funding to develop a strategy for a watercraft inspection perimeter defense in the Pacific Northwest and provide additional funds for early detection monitoring coordination, they will communicate next steps with the CRB and discuss with PNWER.

VULNERABILITY ASSESSMENTS (L. DEBRUYCKERE)

Results of “[Funding strategy to conduct Vulnerability Assessments for high priority Columbia River Basin Hydropower Facilities](#),” a report produced by the Pacific States Marine Fisheries Commission, was presented. The report documents the work of a 33-member team to:

1. Determine the status of vulnerability assessments at key hydropower projects in the Columbia River Basin (CRB).

2. Determine the risk of these hydropower projects to zebra and quagga mussel establishment.
3. Create a planning document that recommends the highest priority needs for vulnerability assessments and the costs associated with completing them.

Action Item: Notify everyone on the VA Team via email when updates are made to the VA report.

WASHINGTON RAPID RESPONSE PLAN (L. DEBRUYCKERE)

Washington just produced their Dreissenid Rapid Response Plan using the template based on the Oregon plan. The plan will be posted to the Washington Invasive Species Council website soon. All PNW states and Canadian provinces were encouraged to develop a rapid response plan and borrow/use as much information from Oregon and Washington's plans as possible to create efficiencies.

BRITISH COLUMBIA EDRR PLAN (M. HERBORG, BC)

BC is developing an EDRR plan – agencies involved include federal, provincial, First Nations, and other organizations, such as regional invasive species council. The plan encompasses all taxa, and includes early detection, identification, alert screening, risk assessment, rapid response, and monitoring and reassessment. Some issues BC has:

- Terminology for “suspect” and “inconclusive” (agreed upon at Denver II meeting in 2014) seems similar.
- Would the CRB plan be triggered outside of the Columbia River? Yes, Canadian province would call MAC, describe their plan, and request whatever support from the CRB is needed.
- Incident command system is currently not part of the approach.
- [Federal Emergency Registration Process](#) is a moving target.
- Include the Conrad's false mussel – brackish mussel – can survive in freshwater systems (planktotrophic bivalve).

TRIBAL AIS ISSUES/NORTHERN PIKE (N. BEAN, KALISPEL TRIBE OF INDIANS)

Between Albeni Falls Dam and Box Canyon Dam – 55-mile reservoir. The tribe documented an established population of northern pike in 2004. The population increased from about 400 fish in 2006 to 5,500 in 2010. The major threat is recovery of native trust species, but there are numerous other threats as well. They are seeking to reduce pike abundance through suppression efforts by increasing angler exploitation, promoting fishing contests to incentivize harvest ([Pike Palooza](#) event), and intensively gillnet fish.

Lessons learned: In 2014, they sought to avoid higher reservoir elevations, target more pre-spawn pike, try to avoid Phase II, reduce bycatch and increase survival of bycatch, and reduce angler interaction and interference. All of this was accomplished by starting gillnetting earlier in the year, using more nets, and not setting nets on weekends.

Next steps include monitoring and surveys, a 2014 Pike Palooza Derby, mechanical suppression, and a report to the ISRP. More information on northern pike can be found at http://wdfw.wa.gov/ais/esox_lucius/.

FLATHEAD BASIN PREVENTION AND EDUCATION EFFORTS

(E. HANSON, FLATHEAD BASIN COMMISSION)

[Flathead Basin](#) is 8,567 square miles – very high use, lots of snowbirds, many pristine lakes, river and streams, lots of use by high-risk boaters. [A 2010 strategic plan](#) was created to protect the Flathead Basin from AIS – serves as a guidance document. Activities:

- Addressing existing infestations

- [Eurasian watermilfoil](#) (EWM) in Bear Lake – closed the lake (quarantine authority via Department of Agriculture)
- [Flowering rush](#) – Flathead Lake – identified in 1964 – now over 2,000 acres – interferes with recreation and is changing both the ecology of the lake and the ecology of the river downstream of the lake
- [Curlyleaf pondweed](#) (CLP) – Flathead Lake – discovered in 2011, dredge and survey work in 2013 and 2014.
- Implementation
 - Watercraft inspections – highway stops at all major entryways into the basin
- AIS Surveys
 - Veliger monitoring, monitoring lakes for AIS, and eDNA research in the basin (Eurasian watermilfoil and invasive mussels)
- Education and Outreach
- Legislation and Authority activities – drafting language for an ISC as well as regulations authorizing quarantine authority within the basin.
- Regional Partnerships – [Crown of the Continent](#) AIS Plan
- Future Plans include updating the Basin AIS plan, finding a permanent funding for watercraft inspection stations (currently funded with state general revenue), establishing eDNA monitoring for multiple species, addressing species other than QZ mussels and Eurasian watermilfoil, eradicating EWM in Beaver Lake, eradicating or controlling CLP in Flathead lake, and supporting Flowering Rush control efforts.

ACTION ITEM: Send Robyn Draheim information if you know of any conferences or meetings that have eDNA sessions as part of the meeting so that Paul Heimowitz and the USFWS can schedule concurrent workshops at these meetings.

WEED MANAGEMENT IN THE CRB (T. WOOLF, ISDA; J. PARSONS, WADOE)

T. Woolf - Projects:

- Eurasian watermilfoil and [Hybrid watermilfoil](#) (EWM and [Northern watermilfoil](#)) projects using herbicide treatments and diver removal – have eradicated it in some places, and in some instances it has returned.
- Flowering rush – increases in reports of [swimmer's itch](#) associated with these infestations – hand removal, barriers
- [Hydrilla](#)
- [Asian clams](#)
- Noxious weed programs – CWMA's have been integral to working with the public.

J. Parsons - WADOE

- Flowering rush (FR) – most of the rush in the north is the triploid version (rarely makes viable seed); the one in Idaho is diploid (makes seeds) – both reproduce easily vegetatively – multiple treatments of diquat can reduce the amount of rhizome biomass over time – Imazapyr works best on emergent growth; 2,4-D/triclopyr mix reduced growth in Wisconsin. Biocontrols (a weevil, [Bagous nodulosus](#)) can damage rhizome (CABI – Switzerland research). The US Army Corps of Engineers is doing research to see if native invertebrates could have a detrimental effect on FR. Future needs include funding for biocontrol research, research on impacts, spread, connection with swimmer's itch, genetic research, more cooperation from agriculture and irrigation providers, and research on chemical control.
- [Washington made several changes to their state Noxious Weed List:](#)
 - No change was made to the [Japanese eelgrass](#) listing
 - [Narrow leaf cattails](#) and hybrids – added several species as Class C weeds (control is up to local jurisdictions)
 - [Russian olive](#) was added to the list as a Class C weed
 - [Giant Reed](#) - Quarantine list – not legal to sell, transport, or possess
- [National Pollutant Discharge Elimination System](#) (NPDES) Permitting Updates including upcoming reissuance of the Fisheries Resource Management Permit; new permit for Japanese eelgrass control on commercial oyster beds in Willapa Bay, but that is being contested.

PREDATOR (PIKE) PREY (BULL TROUT) INTERACTIONS IN FLOWERING RUSH HABITAT (P. RICE, UNIV. OF MONTANA)

Introduced piscivorous fish are adapted to vegetated habitats, while salmonids are open water species. Flowering rush is creating vegetation where normally we would have open water – they colonize previously unvegetated littoral zones. Pike are good ambush predators – they can eat fish half their body length; their effects on cutthroat and bull trout were affecting the ability to restore these native species. Predation is occurring as the salmonids move to and from their spawning areas. Spatial modeling indicates 75% of the Flathead Lake’s littoral zone is susceptible to flowering rush infestations. Northern pike are obligate vegetation spawners – eggs attach on vegetation (or else they would drop to the bottom and suffocate from lack of oxygen). Sac fry also attach to the vegetation. Large numbers of young are reared and predated upon by other northern pike. Pike spawn on grass litter/aquatic macrophyte litter from the previous year. Flowering rush is causing shifts in the overall macroinvertebrate community, representing both statistically significant and ecologically significant shifts. In Fennon Slough, northern pike were associated exclusively with flowering rush (non-persistent emergent – in the fall, the leaves collapse to the lake bottom – so the litter is persistent) vegetated communities. Other obligate vegetation spawners also associate with the pike and flowering rush, such as largemouth bass, yellow perch, and pumpkinseed.

USGS/WSU DREISSENID MUSSEL EARLY DETECTION MONITORING/ANALYSES EFFORTS (T. COUNIHAN, USGS; S. BOLLENS, WSU GROUP)

T. Counihan—Objectives of the BPA-funded project are to further coordination, inform placement of boat cleaning stations, evaluate efficacy of samples for veliger monitoring, conduct research to assess the cause and effects of biological invasions, and train professionals. Processed 139 samples from the mainstem of the Columbia in 2013; in 2014, entities proposing to monitor are sharing their locations. Compiled early detection monitoring location for 2013. Presented proposed 2014 early detection monitoring locations; first time this information has been available regionally. Will host webinar to discuss upcoming monitoring season and to better understand how to characterize risk regionally. Learned there is little overlap in monitoring efforts – where it does occur, it is focused on the mainstem Columbia and Snake Rivers. During discussion, it was noted that monitoring should be included for adult as well as juvenile dreissenids.

ACTION ITEM: Webinar to discuss upcoming early detection monitoring season.

ACTION ITEM: Work with Kate Wilson to include Alberta’s early detection monitoring locations for the upcoming seasons.

S. Bollens—In addition to field collections, they did spiking experiments (added veligers) looking at the efficacy of the FlowCAM:

- The ability of the instrument to detect dreissenid veligers in DI water met manufacturer specifications.
- The ability of the instrument to detect dreissenid veligers in Columbia River water performed well in detecting veligers.
- The ability of the instrument to detect dreissenid veligers and *Corbicula* veligers in Columbia River water – the instrument is less than perfect distinguishing between these two species. The concern is that *Corbicula* is very widespread in our water samples.

Next steps:

- Continue early detection monitoring
- Prioritize the locations of boat cleaning stations
- Field sampling and analyses for 2014

- Assess FlowCAM efficiency – the FlowCAM provides a lot of information about the plankton community in a broader sense, but it’s not a silver bullet, and it requires well-trained professionals. You do need to train the FlowCAM – group organisms that have a higher probability of being a mussel.

CORBICULA (C. MOFFITT, USGS/UI)

Asian clams have been in the CRB drainage for a long time (first detected in the U.S. in the Columbia River system in 1938, and they now exist in 44 states) – a project is beginning to address risks to large oligotrophic lakes. Public Utility Districts (PUDs) have problems with them clogging their pipes. They attach with a weak byssal attachment, but disperse well via watercraft and people movements. They are hermaphroditic, have group spawning, and live 1–7 years.

A recent infestation in oligotrophic [Lake Tahoe](#) (1,500 clams/square meter) – they filter twice the rate of dreissenids – pseudofeces covers the bottom. Tahoe tried to suffocate Asian clams using barriers.

During the summer of 2012, [Asian clams were found in East Hope in Lake Pend Oreille](#). They are launching a project to consult with Tahoe experts, survey likely infested areas and high traffic boat activity, obtain the necessary permits, determine effectiveness of benthic mats, and compare risks, costs and effectiveness of barriers.

The bottom line is it is not just dreissenids – it’s about Clean, Drain, and Dry.

ACTION ITEM: If anyone has any suggestions or previous experience with *Corbicula*, contact Tom Woolf or Christine.

MEMBER, ISSUE UPDATES

Tunicate—There will be a tunicate workshop in Seattle, Washington August 6–7, 2014.

Foul release study update—Steve Wells is investigating using silicon or polymers that prevent attachment or do not allow the mussels to firmly attach – they know the products work, and are exploring how long they work. They are evaluating the durability and changing in the effectiveness of the coating over time. The different coatings, designed for steel ship hulls to prevent attachment, have differing results (e.g., the international product is doing well on both concrete and steel).

Dead vs. alive dreissenids—Two projects were funded by the USFWS:

- Tissue staining – a reliable tissue stain is not reliable.
- D. Malloy proposed a test strip method, which worked well in a laboratory, but did not work well in the field (Lake Mead) to the standard needed by law enforcement. He then proposed determining viability using a four-step process: look for wet tissue, a reflex demonstrated in the adductor mussel, then attach/glue the mussel to substrate and sink it in water, and show movement of water. **ACTION ITEM:** Robyn will distribute the final report when it is completed.

NEXT MEETING OF THE CRB

The next meeting of the CRB will be in the Portland, Oregon metro area, most likely first two weeks of October. If you are aware of competing meetings/conferences during this time period, please let Stephen know.