



Ooze News



Society of Wetland Scientists Pacific Northwest Chapter

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<http://www.sws.org/pacific-northwest-chapter>

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President's Corner

By Yvonne Vallette, PNW Chapter President

This year's International SWS meeting was held in San Juan, Puerto Rico. It was a well-attended with over 450 attendees, with many of the participants from outside of the US. This meeting was the second time that SWS has successfully utilized a compressed meeting schedule (just three days of technical program content, instead of four). Some of the top topics covered during this year's annual Board meeting included: restructuring the governance of SWS as an organization, expanding the internationalization of SWS, and approving the addition of several new Sections/Committee (like the Outreach & Communication Section and a Legislation Committee) and Chapters (there is now a new China Chapter) to the organization.

As SWS continues to grow (especially in Europe and Asia), the limitations of having a mostly volunteer board to implement initiatives, has become more evident. So SWS, through a governance ad-hoc committee, is looking at a range of other governance options (including the possibility of hiring a part-time or full time Executive Director) to help provide continuity and maintain an active presence on SWS interests.

On the National level, most have heard that the Environmental Protection Agency and Army Corps of Engineers are proposing a rule to rescind the Clean Water Rule and re-codify the regulatory text that existed prior to 2015 defining "waters of the United States" or WOTUS. This proposed rule follows a February 28, 2017, Presidential Executive Order on "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule." The February Order states that it is in the national interest to ensure that the Nation's navigable waters are kept free from pollution, while at the same time promoting economic growth, minimizing regulatory uncertainty, and showing due regard for the roles of Congress and the States under the Constitution. The Federal Register Notice will be posted on July 27, with the 30-day comment period closing on Saturday, August 26.

The public is encouraged to submit written comments during the 30 day public comment period, identified by Docket ID No. EPA-HQ-OW-2017-0203 to the Federal eRulemaking Portal: <https://www.regulations.gov>. This is a two-step process for the agencies. This first action would recodify the regulatory text that was in place prior to the 2015 Clean Water Rule. Meanwhile, the agencies have begun deliberations and outreach on the second step of the rulemaking process involving a re-evaluation and revision of the definition of "waters of the United States" in accordance with the Executive Order. This process is likely to take a while before coming to a final conclusion, with the potential for litigation coming from interests on both sides of the issue.

On the local front, the chapter is proceeding with our mini-meeting forum, schedule for late September (September 26-27) to provide our members an opportunity for technical and policy dialogue on topics such as: blue carbon, beaver as a restoration tool, and updates on new aquatic resource tools being developed for Oregon and Washington. We are also organizing some local fieldtrips and technical workshops. The meeting will be held at the Red Lion Hotel in Kelso, Washington. We are doing our best to provide a convenient and affordable meeting for both Washington and Oregon members, with relevant content.

Work continues in planning of our joint meeting with the Society of Ecological Restoration-Northwest Chapter (SER-NW), September 2018 in Spokane, WA. This meeting has also been selected by SER's North American Chapter Collaboration (NACC) as a venue for engaging many of their 11 North American Chapters, so we expect to add about another 100 participants to this meeting.

In conclusion, we ask if you come across any items of potential interest (including training opportunities), please pass those on to our wonderful and responsive Chapter newsletter editors: Maki Dalzell (Maki.Dalzell@hdrinc.com) and Katrina Poppe (katrina@nwecological.com).

2017 SWS-PNW Chapter Mini-Meeting

By Nate Hough-Snee, Immediate Past President

The 2017 Pacific Northwest Chapter meeting, *Applied Wetland Science in a Changing Northwest World* will be held **September 26th and 27th**, 2017 at the Red Lion Hotel in Kelso, WA. This year's meeting will take a plenary format with day one comprised of a dozen plenary talks on emerging topics in wetland policy, mitigation planning, restoration, and carbon accounting for climate change. Day two will consist of workshops and field trips. The meeting is catered and includes an evening social on Tuesday, the 26th.

REGISTRATION NOW OPEN!

More information can be found on the web [here](#), including a schedule, registration fees, and a link to register. Rates will increase on September 15 so best to register now to take advantage of the early rates.



Save the date:

Applied Wetland Science in a Changing Northwest World

September 26-27, 2017
Red Lion Hotel and
Conference Center
Kelso, WA

Presentations include:

- Regulatory and policy updates
- Wetland inventory & mapping
- Beaver and wetland restoration
- Coastal blue carbon

Workshops TBA

Presented by the Society of Wetland
Scientists Pacific Northwest Chapter



Annotated Reed Canarygrass Bibliography Summary

*By Scott Luchessa,
Sr. Environmental Analyst, Seattle City Light*

Greetings fellow PNW SWS Chapter members. I am happy to share some highlights of an annotated bibliography on reed canarygrass (*Phalaris arundinacea*) completed in 2015 for Seattle City Light as part of ongoing habitat mitigation obligations at the Boundary Hydroelectric Project. Please visit the chapter website for a copy of the [bibliography](#). References cited below refer to those in the bibliography. Key words have been identified for each of the references reviewed in the document, which will hopefully make it more useful. In addition to documents reviewed, there is a list of some additional references at the end of the document that were not reviewed but may be of interest. The bibliography is by no means comprehensive as there are hundreds, if not thousands of peer-reviewed articles, theses, dissertations, and gray literature publications on this species.



Credit: Leslie J. Mehrhoff.

As you know, this very successful graminoid has a very broad ecological amplitude and can transform the landscape into large monocultures to the detriment of native flora and fauna. A number of introductions of European gene stock and cultivars have occurred over the years perhaps creating one or more hybrids that are much more invasive and widespread than the native species (see Mergliano and Lesica 1998; Morrison and Molofsky 1998; Lavergne and Molofsky 2007). The purpose of the bibliography was to document the biology and ecology of reed canarygrass (RCG) and measures used to control it for the purposes of informing a pilot wetland restoration project over at Seattle City Light's Boundary Hydroelectric Project. Some of you will

recall that fellow SWS member Clay Antieau convened a RCG Working Group, presented summaries of control methods at past conferences, and managed an RCG bibliography for many years. My bibliography builds on that body of work and is focused on the Pacific Northwest but includes some literature from other parts of the country. Below are some highlights of my annotated bibliography, which will hopefully be useful to fellow restoration practitioners.

A variety of physical, mechanical, cultural, and chemical control methods have been tried over the years with widely varying success, including flooding, cutting, burning, mulching, and spraying with herbicides. No single method alone is 100 percent effective. Unless you have a small population, eradication is rarely a feasible goal whereas reducing the dominance is readily achievable with persistence even in large monocultures, especially when using a combination of control methods. Arguably, the most economical and effective combination of methods is cutting or mowing as part of site preparation followed by live staking and/or planting followed by periodic cutting and/or spot herbicide applications. Maximum impact on carbohydrate reserves in rhizomes is reportedly achieved by cutting/mowing at anthesis (flowering). Glyphosate and Imazapyr are two systemic herbicides that have proven effective in controlling RCG at low concentrations of the active ingredients. The effectiveness of both cutting/mowing and herbicide application varies as a function of timing. In my experience an initial late summer cutting followed by herbicide application of regrowth and fall planting are most effective. Live stakes and/or plantings, especially of shrubs and trees, employs competition for light, nutrients, and water to further reduce fitness, cover, and density of RCG. The combination of cutting, herbicide application, and live staking/planting has proven effective in improving biodiversity and wetland functions by multiple authors (see Kim et al 2006; Seebacher 2008; Miller et al. 2008). If soil conditions are favorable (i.e., soft, saturated hydric soils), larger diameter, long willow live stakes alone may be an effective control strategy as demonstrated by a recent study by King County Water and Land Resources Division (see Hartema et al. 2014). The methods you select will be dependent on the nature of your infestation, site conditions, resources, goals and objectives.

For those of you hoping to restore wet meadow or prairie wetlands, such as those in the Willamette Valley, there are a couple of good resources. [Krueger and others \(2014\)](#) provide an excellent and comprehensive list of practical guidelines based on experience for restoring wet prairies in the Willamette Valley. Another valuable resource is the

[Wisconsin RCG Working Group \(2009\) management guide](#). The latter has a nifty site assessment matrix (see Table 2 in that document) for identifying suitable management practices based on past land use practices, RCG characteristics (monoculture vs. mixed communities), nutrient and stormwater inputs, and wetland hydrology.

Please visit the chapter website to download the [bibliography](#) for more details and let me know if you find any errors so that those can be corrected. Many of the reviewed publications can be found online. Feel free to contact me by email (luchessas@gmail.com) or phone (206) 841-3801. Perhaps I can help you plan your restoration to be successful. With persistence, restoring more diverse and functional wetlands can be accomplished and is very gratifying!

Puget Sound has a New Invader

*By Lizbeth Seebacher
WA Dept of Ecology
Washington Invasive Species Council Member*

Several detections of the European green crab (*Carcinus maenas*) were documented in northern Puget Sound. The first was found in Westcott Bay off of San Juan Island at the end of August last year and in the Padilla Bay National Estuary Research Reserve (PBNERR) in mid-September. Citizen Scientists from the Crab Team associated with the Washington Sea Grant (WSG) Program, partnering with the Washington Department of Fish & Wildlife (WDFW) found the invaders and have been on the look-out for new populations.

The European green crab is considered one of the world's worst invasive species and is classified as a prohibited level 1 species in Washington under RCW 77.135.030. They are considered to “pose a high invasive risk and are a priority for prevention and expedited rapid response management actions”. The greatest risk to Puget Sound from this species is predation on shellfish and serious impacts on eelgrass habitat critical to Dungeness crab, forage fish and juvenile salmon. This loss of habitat and predation could negatively impact Puget Sound recovery efforts. With a native distribution along the coastlines of northern Africa up to Norway and Iceland, this crab is known to be a very effective predator of bivalves. These voracious predators invaded the east coast of North America in the mid 1800's via a ship coming into the Cape Cod region. From the Cape, they have spread north into Maine in the 1950's and up to Nova Scotia, and they were first discovered on the west coast in San

Francisco Bay area in 1989. The suspected original pathway was either ballast water in ships going in and out of San Francisco Bay and/or in kelp or other packing material used to ship live lobsters from Maine or bait worms. With a floating larval stage as part of their dispersal strategy, they have been able to hitch a ride on strong El Nino currents ending up in Oregon, Washington and British Columbia estuaries. Based on rapid response findings, it is believed that they are not well established in the Pacific Northwest at present.



Credit: Allen Pleus, WDFW Aquatic Invasive Species Unit Lead

On the east coast of the US, the European green crab played a significant role in the demise of the Atlantic soft shell clam fisheries, and preys on quahogs, hard shell clams and in California, impacted their native clam, *Transennella* spp. and shore crabs. Some the species believed to be at risk of serious predation include our native Dungeness crabs (*Cancer magister*) as the green crabs readily prey on the juveniles as well as clams, mussels and oysters.



Credit: WDFW

Molting seems to take place at different times of the year based on the location of the crab. Most European green crabs release their eggs during the spring as successful embryonic development takes place when temperatures are between 11 and 25 C. Megalopae (the last larval stage) and juveniles settle in late August. These crabs reach maturity by two to three years old and can breed up to three times per year and have a life span of about five years.

The European green crab can be green or red. The top (dorsal) of the shell (carapace) is typically a mottled dark green or dark brown color with yellow patches on the underside (ventral) of the carapace. The best distinguishing characteristic is the array of five spines on both sides of the eyes at the front end of the carapace.

If you are interested in participating in the volunteer monitoring program with Sea Grant, you can find more information [here](https://wsg.washington.edu/community-outreach/environmental-threats/invasive-green-crab-volunteer-monitoring/)

<https://wsg.washington.edu/community-outreach/environmental-threats/invasive-green-crab-volunteer-monitoring/> If you frequent Puget Sound estuaries and marshes while at work or play, please take a moment to visit this link and learn more about how to identify the European green crab. If you find a green crab, please report the sighting on the “Report a Sighting” button on this link and follow the instructions.

2017 SWS-PNW Student Research Grant Recipients

By Katrina Poppe, Co-Secretary

Our chapter awarded grants to two students to support their graduate research. They are excited to join the SWS-PNW community and they are looking forward to meeting other members at upcoming meetings. In the meantime, you can learn more about them and their research here:

Wendal Kane

I am currently a master’s student in the biology department at Eastern Washington University. As an undergraduate at Grand Valley State University, I was involved in research on rainforest fern communities and fern evolution in Puerto Rico. Post-grad, I worked as an ecology field tech at Penn State, where I sampled forest clearcut regeneration, and assessed how deer herbivory affects forest diversity. Broadly, my research interests include plant-soil feedbacks and invasive species. Specifically, I am curious about how they impact ecological processes and diversity. My interest in aquatic systems is focused on riparian and wetland systems,

because of their high diversity and the ecosystem services they provide.



My graduate thesis is focused on nutrient inputs from anadromous fish into riparian soil food webs of the Elwha River, WA. Two dams on this river prevented anadromous fish spawning migrations, and the dams’ removal in 2012 and 2014 provided a good opportunity to study this nutrient transfer. Pursuing this research has introduced me to new fields in biology including soil ecology, soil invertebrate taxonomy, and stable isotope research. After finishing at EWU, I plan to continue his research of wetlands and riparian zones, either through a PhD program or agency work.

Julie Gonzalez



I am broadly interested in trophic dynamics and cascading effects on restoration, and how invasive species may impact these trophic dynamics.

My master's thesis is focused on restoration of native species in San Francisco Bay and creating and maintaining proper ecosystem function in these habitats. Specifically, restoration of native cordgrass (*Spartina foliosa*) in San Francisco Bay and the role that an invasive crab (*Carcinus maenas*) plays in cordgrass establishment. In other locations, the crab forages in the lower elevations of the intertidal mudflat, but in San Francisco Bay it is limited to the high elevation zone where cordgrass grows. I conducted a series of field experiments this past summer exploring this unusual distribution. I also evaluated the crab's impacts on native cordgrass through a cage enclosure experiment. Preliminary results suggest that crabs are most abundant in the high elevation habitat, and have a negative impact on cordgrass growth. I hope to repeat this cage experiment this summer to explore the mechanisms behind the negative impacts of green crabs on the cordgrass, including changes in invertebrate community composition and abundance, and sediment characteristics. Understanding how other organisms interact with and affect this cordgrass lets us know where, when and how this cordgrass will best establish and persist.

I believe it is especially important that scientists are able to effectively communicate the importance of ecological conservation. After completing my master's, I hope to continue on to a doctoral program so that I may advance my career to a level where I influence local, regional and global ecological conservation efforts through science, community outreach efforts, and education of the next generation of scientists.

Upcoming Webinars

By Maki Dalzell, Co-Secretary

Society of Wetland Scientists:

Register online at <http://www.sws.org/About-SWS/upcoming-webinars-for-nonmembers.html>

- Robust Interpolation of Water Levels and Ecological Conditions at Unmonitored Wetlands using Regression-kriging: August 17, 2017, 10:00 – 11:00 AM PDT.
- Comparative studies of the variation in primary producer diversity and dominance in (sub)tropical wetlands: September 21, 2017, 10:00 – 11:00 AM PDT.

Association of State Wetland Managers:

Register online at <http://www.aswm.org/aswm/aswm-webinarscalls>

No wetland related webinars offered at this time.

Coastal and Estuarine Research Federation:

Register online at <http://www.erf.org/webinars>

- Tell a Compelling Story: Combining Killer Graphics and Good Narrative for Effective Science Communication: September 15, 2017, 10:00 – 11:00 PDT.

Calendar of Wetland Classes and Workshops

By Maki Dalzell/Katrina Poppe, Co-Secretaries

To better serve our members we have included a list of wetland related classes and workshops occurring in the Pacific Northwest. If you know of other organizations that offer classes please forward the web link to katrina@nwecological.com.

Coastal Training Program:

<http://www.coastaltraining-wa.org/>

- Using the Revised Washington State Wetland Rating System (2014) in Western Washington: September 13-14, 2017. Lacey, WA
- How to Explain Science, Share Data, and Build Trust: Presentation Skills for Scientists and Public Officials: October 12 and 26, 2017. Mount Vernon, WA
- Planning and Facilitating Collaborative Meetings: October 16-17, 2017, 2017. Yakima (Union Gap), WA.

Northwest Environmental Training Center:

<https://nwetc.org/>

- ArcGIS 10: An Introduction to Environmental Applications: August 29-31, 2017. Bellingham, WA
- Facilitation Skills for Environmental Professionals: September 18-19, 2017. Kirkland, WA
- Visualizing and Analyzing Environmental Data with R: October 10-11, 2017. Tigard, OR.
- ArcGIS 10: Geoprocessing – Advanced Techniques for Environmental Applications: November 7 - 9, 2017. Seattle, WA.

Portland State University Environmental Professional Program: <https://www.pdx.edu/environmental-professional-program/>

- Applied River Restoration Field Course: August 14-18, 2017. Portland, OR.
- River Restoration Project Design: October 30 – November 3, 2017. Portland, OR.

Richard Chinn Environmental Training, Inc.:

<http://www.richardchinn.com/>

No courses offered in the Pacific Northwest region at this time.

The Seminar Group:

<http://www.theseminargroup.net/>

No wetland related courses at this time.

University of Washington – Professional Development Program:

<http://www.pce.uw.edu/>

No wetland related courses at this time.

Western Washington University:

<https://ee.wvu.edu/summer-session>

No wetland related courses at this time.

Wetland Training Institute:

<http://wetlandtraining.com/>

- Basic Wetland Delineation: August 7-11, 2017. Rigby, ID.
- Basic Wetland Delineation: August 21-25, 2017. Arlington, WA.
- Basic Wetland Delineation eSession with Field Practicum: August 28-29, 2017. Arlington, WA.
- Wetland Delineation Refresher: August 28-29, 2017. Arlington, WA.

SWS Funds Available for Wetlands Workshops

By Maki Dalzell/Katrina Poppe, Co-Secretaries

The PNW Chapter Board is encouraging applications for SWS support to conduct workshops on relevant topics. The application can be found on the chapter website:

<http://www.sws.org/Pacific-Northwest-Chapter/pacific-northwest-chapter-events.html>

SWS PNW Consultant Directory

By Maki Dalzell, Co-Secretary

The PNW Chapter hosts a quarterly updated consultant list on the website:

http://sws.org/images/chapters/pacific_northwest/docs/PNW-2017-consultant-list.pdf. The only requirement to be on this list is current SWS PNW membership. If you would like to be added to the list or have your information updated, contact Maki Dalzell at maki.dalzell@hdrinc.com.

Update your contact information

The Chapter uses the current SWS membership list to email newsletters. Make sure your information is current to receive a copy:

<http://sws.org/>

<https://netforum.avectra.com/eweb/DynamicPage.aspx?Site=SWS&WebCode=LoginRequired>

Chapter Board Meetings

By Yvonne Vallette, Chapter President

The PNW Chapter Board conducts quarterly board meetings via conference call. These meetings are open to the general membership and you are encouraged to attend. If you have questions, concerns, want to get involved or are just curious please feel free to attend the

meetings. Our last meeting was held on February 3, 2017 at 10:00 am, and our next meeting date is TBD. If you are interested, please contact Yvonne at vallette.yvonne@epa.gov to receive conference call information.

Ooze News Deadlines for Articles

Articles and announcements are welcomed and appreciated for the fall edition of the Chapter newsletter, Volume 27 Number 4, no later than October 15, 2017. Please send associated documentation to co-secretaries Katrina Poppe at katrina@nwecological.com or Maki Dalzell at maki.dalzell@hdrinc.com. We will review your information for submission to the Ooze News.

Thank you.

SWS PNW Member List Serve

By Maki Dalzell/Katrina Poppe, Co-Secretaries

Of the many benefits of becoming a SWS-PNW member, members enjoy being on an exclusive list serve which provides up to date information regarding events, workshops, news, etc. If you're not a member already, please consider becoming one or encourage your colleagues, employees, or the like to join. Thank you!