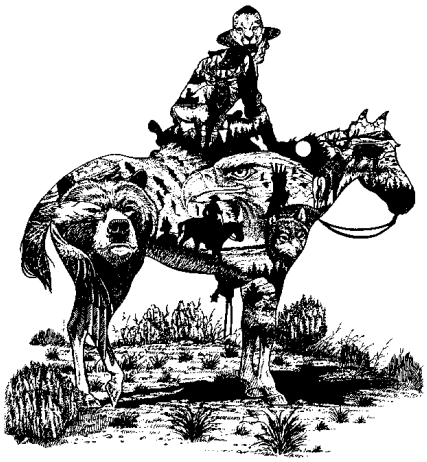

Society for Range Management
Pacific Northwest Section

Properly functioning ecosystems provide for long-term sustainability of watersheds, plants, animals and people
Volume 66, Number 3B *November 2015*

NEWSLETTER

President's Message

Tim Deboodt, Prineville, Oregon

Hello and Greetings from Central Oregon,

How different it is to be writing the President's Message, as opposed to reading it! It is a great pleasure and honor to be able to serve the PNW Section in the role of president. A huge Thank You to **Pete Schreder** for all his hard work this past year in keeping our organization moving forward. He represented us well. Thank You to our outgoing Directors, **John Williams** and **Jay Kerby**; your work and dedication has not gone unnoticed. While thinking of service to our organization, I am happy to announce that **Maura Laverty** was elected 2nd Vice-president; **Nick Vora** and **Jeff Burnham** will serve as our newest directors.

Our fall meeting in Richland, WA was fantastic. As I said at the banquet, our meetings and the opportunities for professional development that are an integral part of them, provide all of us with the opportunity to see new places and learn new things. The Washington planning team set the bar high for future meetings. Thanks to **Courtney Smith**, **Julie Conley**, **Tom Platt**, **Jeff Burnham**, **Kevin Guinn**, **Will Keller**, **Richard Fleenor** and all others from Washington for hosting us and exposing us to the wonders and challenges of that part of the world.

For me, hearing the history of Hanford, and all that it was and is about, has created a new appreciation for our country's ingenuity and drive to meet a challenge years ago, and to now respond accordingly to the challenges created in the aftermath. The visit to the Barker Ranch illustrated the use of livestock grazing as a tool for meeting the management goals of functioning wetlands and waterfowl habitat. It was interesting to learn of the value of that ranch property to the PNW flyway, and how the partnerships between NRCS and private landowners work.

No matter what the goals and objectives may be, it all boils down to vegetation management.

During the Annual Member Meeting, we were happy to announce the unanimous vote to amend our by-laws and officially **welcome the great state of Alaska** in joining B.C., OR and WA to the PNW Section. **Pat Shaver**, President of the Society for Range Management (and one of our own) provided an overview of our parent society and its business. We learned that **Roger Sheley** is the new chief editor of the *Journal for Range Ecology and Management*. Congratulations to Roger (another of our own).

A decision voted on by the Board will change our section newsletter to be primarily electronic. We will print and mail a hardcopy to those who do not have email, but in response to many who requested it, we will post the newsletter on our webpage and send an email to tell you it is available for viewing at http://www.rangelands.org/pnw/. **Did you know we have a webpage?** Go there to learn about our Section, by-laws, meetings, membership information and more. Visit it and let us know what you think.

The **69th SRM Annual Meeting** is in Corpus Christi, TX, **Jan. 31-Feb 4**. Start your planning at http://rangelands.org. Next up, hold June 8 - 10, for our PNW Summer Workshop in BC, and October 12 -14 for our Meeting & Workshop in OR. Remember, we the Board are here to serve you; see our contact information. Let us know how we can help you and, whenever possible, please recruit a new SRM member.

Thanks! *Tim*

Barker Ranch Tour

by Bob Ehrhart, McMinnville, OR. who has been teaching OSU online Rangeland courses since 1999, while living in 3 different states! Bob & Marilyn like to hike & drive throughout Oregon & neighboring states.

The Workshop got off to a great start as we toured the Barker Ranch, located outside Richland WA. Barker Ranch is a privately-owned property with the primary objective to provide habitat for ducks and other waterfowl. Through a watershed easement, ranch manager **Michael Crowder** works with **Kevin Guinn**, NRCS, to use livestock, water developments and chemical applications to maintain the variety of habitats waterfowl require. In addition to significant improvements in meeting these requirements, these management actions have enhanced habitat for a wide variety of other birds and wildlife.

Several themes occurred throughout the numerous stops and discussions. First, the establishment of the wetland easement required a paradigm shift from producing forage for livestock to providing waterfowl habitat; the leased cattle are used as a management tool for habitat manipulation rather than to turn a profit for the ranch. Second, Michael's focus is on "moist soil management" to provide early succession wetland plants for waterfowl use. (One reason for moist soil management rather than ponds of standing water is the need for mosquito control.) Third, the unusual combination of both cool and warm season grasses presents real challenges for grazing management since appropriate time of grazing for one set of herbaceous species may not be appropriate for management of another set of species. Fourth, while there are a number of resident birds on the ranch, the primary emphasis is on providing resources for waterfowl during both spring and fall migrations.

While I don't recall hearing the term, "adaptive management" was a fifth and perhaps overriding theme of the day. Comments on field trials, experiments and evaluation of results cropped up at every stop. One example of this was the switch to no-till seeding. Another was the work to develop corn stalks that produce ears lower to the ground and thus more accessible to waterfowl. A third was the varying application of chemicals in terms of type, amount and timing to retard the spread of invasive species, both herbaceous (flowering rush *[Butomus umbellatus]* and paspalum *[Paspalum dissectum/*mudbank crowngrass]) and woody (Russian olive *[Elaeagnus angustifolia]*). A fourth example of the search for more effective management approaches was changing time of grazing to control invasive species. Section members expressed concern on the appropriateness of removing cattle so early in the year when the warm-season grass *Paspalum* has become a serious problem. I guess that's what trials are for.

Looking back over the tour, what stood out was the complexity involved in managing this property. From determining a range of waterfowl needs, to managing livestock, to combating invasive plant species, to controlling mosquitoes, to meeting the demands of the ranch owners, and then addressing each of these year after year based on the results of the previous year. It reminds me of the comment I heard once: *"Hey, this isn't rocket science." "No, rocket science is easy; it has clear-cut answers."*

The Annual Meeting Banquet and more. . .

by Mike Malmberg, Fort Steele, BC. Following a year with near record crop production on his farm, he gets to be a cowhand for local ranches, doing fall gathering and moving cattle to lower elevation pastures.

Tim Deboodt did a masterful job of shepherding us through the banquet events that included a silent auction, a great meal, honoring our award recipients, and our guest speaker, Roy Gephart.

Thanks to everyone who contributed auction items and those who kept the bidding going to earn $548. This event is fun, interesting, and our major fundraiser for scholarships. **Well done, everyone**!

This year, the Section presented a Special Award to **Dr. William H. Rickard**. **Janelle Downs** and William Rickard treated our group to a fascinating overview of 40+ years of Environmental Research at the Arid Lands Ecology Reserve during the afternoon just prior to our banquet. This award was a fitting addendum to that wonderful presentation. Bill's career as an environmental scientist spanned over 6 decades of research in as wide a field of endeavor as it was long; including botany, wildlife biology and radio ecology. What a wonderful and exciting opportunity for our section to recognize him for the enormous

Continued on next page . . .

Congratulations to our 2015 Leaders.
From left, Andy McDonald, In for the Long Haul; Pat Shaver, Exemplary Service; Bob Gillaspy, Trail Boss; and Tim Deboodt, president.

contributions he has made to a greater understanding of the shrub-steppe ecosystem.

Dr. Patrick Shaver received our **Exemplary Service Award**. The words in his citation *"Pat Shaver has shown repeatedly that he is a top-drawer rangeland manager as well as a dedicated professional"* sums up Pat's dedication to rangelands. Pat has done a huge job in guiding us through the past year as President of the Society for Range Management. He is always available and there with workable suggestions and ideas. Best wishes to Pat and our thanks for his great work.

Bob Gillaspy earned the **Trail Boss Award**. Bob has consistently devoted his time and talent to the Society for Range Management, participating in technical meetings and leadership of the Section and the Parent Society level. Bob is a dedicated worker who consistently comes through with the job well done. Thanks Bob and congratulations; the top man for the top award our section offers.

Andy McDonald received the James A. Brunner **In For The Long Haul Award**. The words in Andy's citation *"Andy McDonald is an upbeat man who always has a smile and a kind word for all he runs across"* will ring true for all those who have met him. Andy says that one of the greatest things about SRM is that it is an organization that is accepting of people and ideas. Belonging to an organization that provides an opportunity to meet with people having similar interests and being accepted as a peer means a lot to this rancher. *"Every day is beautiful. You can't change it, so make the best of it"* is a guiding philosophy that Andy lives by. Andy, you are definitely "In For The Long Haul". Congratulations.

Our guest speaker, **Roy Gephart,** a retired geohydrologist with 38 years experience in environmental management, worked for the Pacific Northwest National Laboratory at Richland. He has authored two books on Hanford, including *Hanford: A Conversation about Nuclear Waste and Cleanup*, which led to his presentation, **A Conversation on Hanford Cleanup**. He gave an overview of the fascinating history of the Hanford site; its purpose and the processes and the issues of the enormous clean up program that the site presents. The Hanford site presents the largest and most complex environmental cleanup project in the United States. He offered insights into how an informed public can guide policy and legislation in the direction taken and principles used to steer such massive public projects. The cleanup process at Hanford is long term and expected to span more than a century. Some required technologies are not yet invented. This work and much cost will be the burden of future generations. Mr. Gephart demonstrated a great capacity to explain complex issues in an easily understandable way. He introduced the idea of a streamlined and accelerated cleanup process with the concern that future generations may not have the economic or technical capacity to accomplish the primary goals. Sobering food for thought!

The banquet at our SRM events provides the opportunity for celebration, reflection and sharing. Our 2015 evening at Richland filled these functions bountifully. **Thank you to all who made this possible**.

Your PNW SRM newsletter will change: This is your last "hard copy" letter, **unless** you do not have email. Based on rising costs, postal requirements, member requests, and diminishing "staff", our PNW Board voted to do a one-year trial run of electronic newsletter. Members who do not have email **WILL** continue to receive a hard copy. Please let us know your thoughts. *(ed. note: Personally, this is a tough decision, because we grow trees on our ranch, and trees make paper! But, times are changing, ...)*

Thursday's "Listen & Learn" Presentations

by Jon Anderson, Olympia, WA, who works for WA Dept. of Fish & Wildlife, and likes to make people laugh!

Matt Wilson, Waterfowl Specialist for the Washington Department of Fish and Wildlife spoke on **Waterfowl Biology and Migration in the Pacific Flyway**, an apt discussion following our tour of the Barker Ranch. WDFW monitors population, habitat improvements, and improving hunter access. In eastern Washington, management is focused on the winter habitat and spring migration periods. Nearly one-half of the Mallards in the Pacific Flyway winter in Washington. Winter survival is critical for the coming year's migration and nesting; birds must spend their time accumulating fat to prepare for those high energy activities. In the Columbia Basin, wintering waterfowl key in on corn stubble, where 'waste' grain provides significant carbohydrates until the increased day length results in photoperiod-induced changes in their physiology in preparation for migration. At that time of year, the birds supplement their diet toward high-protein invertebrates, especially in wetlands. These physiological and morphological adaptations include putting on fat, increasing the mass of nutritional organs and flight muscles. Increased gizzard, stomach, intestine and liver sizes increase the metabolic capacity and energy assimilation rate of the birds, allowing for maximum migration speed to the nesting grounds.

Springtime in the Columbia Basin provides waterfowl with lots of habitat, but the birds nest in relatively low densities, compared with the 'duck factories' of the Great Plains. Here, local intensive haying schedules can preclude successful nesting.

Summertime finds the local waterfowl in 'molt'. Waterfowl undergo a "simultaneous wing molt," losing all of their primary feathers at once, which renders them flightless for 20 to 40 days. Waterfowl are well adapted to survive during this flightless period because they inhabit wetlands, which provide food, shelter, and safety without the immediate need to fly. This molt is, however, energy-intensive, and requires significant food in healthy wetland habitats.

Matt concluded with crop depredations by geese, and the WDFW programs for harassment of birds from the fields, as well as in some areas paying farmers to plant cover crops, and retaining grain stubble to keep waterfowl off croplands. The objective for WDFW is to provide sustainable wildlife-related recreational and commercial opportunities compatible with maintaining healthy waterfowl populations and habitats. Healthy wildlife habitats and populations improve the economic well-being of the Columbia Basin by providing diverse, high quality recreational and commercial opportunities.

Dr. Steven Link of Native Plant Landscaping and Restoration LLC and the Confederated Tribes of the Umatilla Indian Reservation addressed **Cheatgrass and Native Plant Interactions**. Cheatgrass adds a fuel load on the sagebrush steppe; there is a high correlation between cheatgrass cover and fire risk.

Dr. Link revisited his 2003 seeding project on the Columbia NWR, designed to test how long it takes a native bunchgrass, Snake River wheatgrass (*Elymus wawawaiensis*), to successfully dominate a cheatgrass-covered site. The study involved burning in the fall, spraying the herbicides glyphosate (Roundup®) at 2 oz/acre, and the pre-emergent Imazapic (Plateau®) at two levels, and drill seeding wheatgrass on study plots on the Columbia National Wildlife Refuge.

The year after bunchgrass was seeded, Dr. Link found no effect on composition or cover of the vegetation community. In the following year, however, the plots that had received the higher pre-emergent herbicide dose with seeding showed a decrease in weed cover and a significant increase in richness of native species. Treatment with glyphosate showed little effect on cheatgrass, Imazapic at 4 oz/acre showed a moderate effect, and at 8 oz/acre had a strong effect on the control of *B. tectorum*.

Currently, 18 years after treatment, both weed cover and native species richness are about the same in sprayed and unsprayed plots. However, plots treated with herbicide and seeded with *E. wawawaiensis* had significantly lower cheatgrass cover than control or herbicide-only plots. Where seeding was conducted, cover of wheatgrass and other native grasses and forbs increased over time, and this increase was correlated with lower cheatgrass cover.

Dr. Link measured the reduction of fire risk from 100% in heavy cheatgrass to 66-75% in the replanted communities. Because healthy bunchgrass habitat has less cheatgrass, the lack of continuous fuel between bunches reduces the ability of fire to carry, and reduces the fire risk "by about half". The discussion that followed suggested that more research is needed on other bunchgrass species such as Sandberg bluegrass, big squirreltail, and Idaho fescue, which can establish in,

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be established, or co-exist with cheatgrass, and potentially be used to restore habitats and reduce fire risk.

The final talk was a perspective on **40+ years of Research at Arid Lands Ecology Reserve** (ALE) by **Dr. William Rickard** and **Dr. Janelle Downs**. Insisting he was not here at the time, Dr. Rickard gave an overview of landscape changes since the time of Lewis & Clark. With the introduction of horses, cattle and sheep grazing, and agricultural development, the shrub-steppe has been significantly reduced.

In 1967, the U.S. Atomic Energy Commission set aside 33,500 hectares of nearly pristine shrub-steppe on the Hanford Site to preserve portions of vegetation types that once covered a great expanse of the West. The ALE Reserve is situated on the northeast -facing flank of the Rattlesnake Hills.

In the 1960s, early research focused on the actions and fates of radionuclides in the ALE environment. During the following decade, research on the dynamics of forbs and grasses, primary productivity, response to fire, the impact of and recovery from cattle grazing, and the arrival of Rocky Mountain elk were subjects of study. The 1980s and 90s were years of studies to understand water balance and infiltration rates in the shrub-steppe, variability in sagebrush species and subspecies, and documenting biodiversity to establish baselines and criteria for continuing monitoring.

Recent studies include research into climate change. Surprising results are coming from a 17-year "reciprocal experiment" on soil transplants from Rattlesnake Mountain, a treeless sub-alpine ridge on the ALE. To mimic environmental changes in climate warming, core samples from the bottom of the mountain were placed at the cooler and wetter 3,500-foot summit. In turn, the upper soil samples were replanted near the warmer and drier base. Then researchers looked for microbial genomic changes that might reflect adaptations in structure and function, and any resulting changes in soil chemistry caused by this change in climate. In this study, the microbes that were relocated up to the summit didn't adapt to the cooler temperature zone as expected. Questions remain on why? Is it typical for the Columbia Basin, and if so, can we identify and predict a "tipping point" before we cross it.

SRM Field Trip to the Hanford Reach National Monument

by Washington State University students in Dr. Linda Hardesty's Rangeland Management class; more below

The Hanford Reach is rich in geologic, ecologic, and human history. It is the site of environmental, health, and social impact from the nuclear industry, **and** home to a beautiful, natural rangeland and river system that might not have been preserved without the nuclear reservation.

Overlooking the vast expanse of the Hanford Reach National Monument

The geologic history of the Columbia River in the Monument began more than 8 million years ago, when the river changed course from Satus Pass to a braided system across the Pasco Basin. Depositions formed cemented gravel layers, overbank silts and clays and impermeable paleosol caps. Since then, erosion has predominated, from Pleistocene ice dam flooding to wind blowing across the open land.

At the Ringold unit, looking over the Hanford Reach of the Columbia, we learned about geologic history and its present -day effects from **Duane Horton of WSU Tri-Cities**. We saw dune fields across the river, and seeps of water in the hillside that originate on irrigated benches above the river. Irrigation water intersects the

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sloping paleosols, saturating the soil above the impermeable layer and leading to huge areas of "mass movement" erosion between the benches and the river.

Heidi Newsome, USFW, said the Reach is home to the largest dune field in Washington, which includes plants unique to the area. The riparian vegetation zones are the result of dams upstream. In earlier days, riparian habitats would have been eliminated by seasonal flooding. Although the upstream dams made the Reach critical salmonid habitat as the last free-flowing stretch of the Columbia, regulation of water flow indirectly created habitat for migrating and wintering songbirds.

USFS archeologist Dale Earl introduced historical aspects of natural resources, such as the relation of the land to Native American tribes. *"Why do people settle where the settle?"* **The answer: resources**. People move and settle to satisfy their health, basing their diet on available resources. As a basic survival instinct, humans consume high calorie, nutrient-rich foods. About 13,000 years ago, this meant hunting megafauna. As people settled in specific regions, they hunted smaller, more common game such as deer and ducks. It was only 2000 years ago that the river became a commonly used resource. It seems unusual that the native people originally preferred to hunt massive prey, such as mastodons, over salmon and smaller prey species. At first thought, it seems that hunting mastodons would be more dangerous and energy intensive. But in fact, it was dangerous to go after a 100 lb. salmon with a wood-framed net! The Hanford site has been home to the Umatilla, Nez Perce, and Wanapum tribes, and other groups associated with the Yakama Nation. The coming of Europeans and larger-scale farming practices changed the way people used the land.

Hanford was selected as the site to produce plutonium during WWII because of its remoteness and the presence of the Columbia River. The nuclear site began in March 1943 and the U.S. built reactors through the Cold War. Hanford produced plutonium for bombs, which later resulted in major environmental and health problems. Storage tanks leaked so much plutonium that there are over 200 square miles of polluted ground water in the Monument. Columbia River water was diverted to cool the reactors, then put back into the river along with the radioactive releases. Over 100,000 million curies of nuclear waste were pushed daily into the river. Today, there are only around 4-6 curies daily. There are 760 nuclear waste sites on the Hanford reservation. Channels in the impermeable Ringold formation made by prehistoric river floods can be traced by presence of nuclear waste which has seeped into them over the last 71 years. With such extensive contamination, Hanford's priority now is to protect the Columbia River. Five reactors have been cocooned, waiting for final disposal.

At a large sage-shrub steppe area in the east Wahluke unit, we saw the effects of aerial seeding on re-growth after fire. After years of fire and restoration, some native plants are re-colonizing the area. The shrub steppe had been dominated by Wyoming big sage prior to a high intensity 2005 fire that burned across hundreds of acres. The landscape was aerially seeded with a mixture of native grass seed 1 1/2 years after the fire. We observed microsite conditions ten years after a major fire disturbance. The soil character at the four survey plots was a fine sandy loam soil within a longitudinal dune terrain.

Richard Easterly of SEE Botanical noted that post-fire re-growth was a better mix of needle & thread grasses with Wyoming big sage than prior to the fire. Species on site were balsamroot, cheatgrass, thickspike wheatgrass, longleaf phlox, Indian rice grass, needle & thread stipa, Russian thistle, and Wyoming big sage. Although invasive species are present within the observed sites, it appears that fire disturbance can have a positive impact on plant species diversity within this environment.

Currently there is debate about opening Rattlesnake Mountain to the public. Rattlesnake has a unique history and meaning to the Native Americans in the area. It is a site of great spiritual and traditional value. The Hanford Reach is dense with human and pre-human history and with current issues related to cultural, natural resource management, hydrogeologic, and environmental concerns.

We thank the USFWS for leading the tour, all the presenters for sharing their knowledge, the SRM members for their warm welcome, and Dr. Hardesty and the WSU School of the Environment for making our trip possible.

Meet the WSU Student Authors:
Hannah Hoffman, Arlington, WA. Natural Resource Science major who hikes & plays ultimate frisbee.
Ashley Jahns, Othellow, WA. Wildlife Ecology major who rides horses and camps.
Katelynn Piaza, Renton, WA. Zoology major interested in wildlife rehabilitation and habitat restoration.
Austin Schirato, Shelton, WA. Forestry major and Washington State Helitack Fire Fighter

Continued on next page . . .

Helen Vogel, Environmental & Ecosystem major who likes to read and be outside.
Kasey Way, Spokane, WA. Natural Resources major who likes to fish and hunt.

PNW Updates - members, workshops, and more . . .

Welcome Alaska: **Eric Geisler** and **Scott Guyer**, Anchorage; **Jennifer Robinette**, Fairbanks; **Edward Nyard**, Juneau; **Robert LeBlanc**, Kasilof, **William Pyle**, Kodiak; **Norman Harris**, Palmer.

PNW Summer Workshop, June 8-10, 2016 (Wednesday - Friday), Penticton, British Columbia: "Rangelands and BC's Rare and Endangered Species". Rangelands located in the south Okanagan boast a plethora of natural resource, agriculture and recreation opportunities and are also home to some of BC's most unique and endangered species. Teams of dedicated people constantly endeavour to find the balance, support learning and growth, and address challenges. BC chapter president, **Rae Haddow** says, *Join us in southern BC to be part of this discussion (and drink a little wine, too!)."*

PNW Annual Meeting & Workshop, Corvallis, OR, October 12-14, 2016 ("unless something radical happens", like a change of football schedule!), will mix field tours and indoor presentations. Topics will include targeted grazing for weed management, drones, prairie restoration, "and who knows what else!"

Thanks to **Bob Ehrhart** who volunteered, without even an arm twist, to lead the planning team!
(ed.: At the Silent Auction - you'll have to bid high for Mike Malmberg's Fort Steele Farm pie!! m-m-m-Yummy)

PNW Awards -- Thanks to John Buckhouse & his team that selects the PNW folks who have earned the thanks, recognition and cheers from all of us in the Section. Though we think we know them, when we hear their award commendations, we say, "**WOW**!! **Congratulations to the 2015 Winners!** "

2015 PNW Scholarship Recipient, Brandi White, Hermiston OR, writes:
Dear Society for Range Management, PNW Section, Thank you so much for having my parents and me at your banquet. We enjoyed the great presentations and the opportunity to meet a great group of people. I truly appreciate the recognition and support from the society. Thank you for the tremendous amount of time that you take to manage our rangeland systems. Thank you for the scholarship; it will help me continue my education so that one day I can be a steward of the land and manage its natural resources. (ed note: Brandi, a senior in Natural Resources, is in the OSU degree partnership program with Eastern Oregon University.)

Brandi White monitored what elk ate along the riparian areas in the Starkey Experimental Forest & Range. She did not scratch necks of the elk she was monitoring!

Treasure your time to work and learn from fellow SRM'ers. C. Oregon lost **Don Sargent**, who *l'oved his roles as a steward of both the land and the relationships around him"*.We all got caught off guard on November 1.

Calendar of Events

January 31 - Feb. 4, 2016
69th SRM Technical Training, Annual Meeting and Tradeshow, Texas

June 8 - 10, 2016
PNW SRM Summer Workshop, Penticton, British Columbia

October 12 - 14, 2016
PNW SRM Annual Meeting & Workshop, Corvallis, OR

PNW Section, Society for Rangeland Management
Newsletter Editor
C/O John & Lynne Breese
3315 SE Paulina Highway
Prineville, OR 97754

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PNW Section Officers

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1st Vice Pres.	Sandra Wyman, OR	541-416-6886
2nd Vice Pres.	Maura Laverty, OR	208-741-9240
Past President	Pete Schreder, OR	541-947-6054
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Membership	Pete Schreder, OR	541-947-6054
Outreach	Bob Gillaspy, WA	503-414-3233
Student Activities	Andrea Mann, OR	509-670-7743
Webmaster	Bob Gillaspy	rangebob47@gmail.com
	Tom Platt, WA	plattlt@icloud.com
Newsletter	Lynne Breese, OR	541-447-6762
		jlbreese@crestviewcable.com
	Brooke Gray, OR	541-477-0151

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British Columbia
Rae Haddow, Grand Forks
250-442-4377

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Jeff Burnham, Ellensburg
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541-737-1614

Eastern Oregon University
Lesley Morris, La Grande
541-962-3812

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541-947-6141