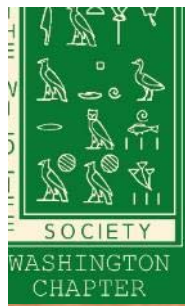


The Washington Wildlifer

Newsletter of the Washington Chapter of

The Wildlife Society



MESSAGE FROM THE PRESIDENT

Danielle Munzing



Happy Fall, Wildlife Society members! Time for wool socks, a hot drink in the thermos, and dark skies at 1630. Across Washington, wildlife biologists will be busy with their winter work, whether it's surveying big game, writing reports, or planning the 2017 annual conference. That's right, your Washington Chapter is hard at work with the Washington State Society of American Foresters to bring you an incredible 4 days of workshops, speaker sessions, delicious food, and opportunities to socialize and network. All of this will be taking place in the heart of Central Washington, at the Red Lion Hotel and Convention Center in Yakima. The theme for this year is **Forests and Wildlife: Responding to Change**. As you can imagine, there will be a lot to talk about and we are bringing together experts in both forestry and wildlife to inspire discussions ranging from white-nose syndrome to forest health and ecological integrity and so much more. In addition, we will be offering an Ignite session again this year. Ignite sessions are very popular and I would strongly encourage anyone who does not necessarily have research to

present, to consider an Ignite talk. They are fun, fast, and informative. For more details see the Call for Papers on the [WA-TWS website](#) or on [Facebook](#).

This year I want to draw your attention to a very important part of the annual

meeting. During the banquet at the annual meeting each year we give out awards to biologists, organizations, and landowners. The last couple of years I have been involved with WA-TWS, I have been surprised that we haven't received more nominations. Last month during our board meeting, I asked everyone to do some homework and I would like to ask the same of each of you.

Do you know someone who deserves to be recognized? Consider nominating that person for the 2017 awards season. There are EIGHT different awards available from the Chapter.

I think many of us know someone who:

- Does more than they need to
- Makes valuable and unique contributions to wildlife conservation
- Uses foresight to address problems early
- Shows their dedication
- Shows exceptional leadership
- Established partnerships that would not have existed without them

Be sure to read Bill Vogel's piece on page 6 of this newsletter. To learn more about awards or to read about those who have received awards, please visit the [Awards page at the WA-TWS website](#).

I look forward to seeing you on the red carpet this spring in Yakima!

SPECIAL VOTE RESULTS

Thank you to members who recently voted to include a Vice-President on the executive board. I am excited the members voted in favor of creating this position. This means the President sequence (Vice-President through Past President) will now last 4 years, instead of 3, so the person in that position will have the opportunity to learn the ropes of planning the annual meeting before they are responsible for leading that effort—a great benefit for those who have not been involved in such a planning effort before. I hope this will make the position less daunting to those without experience and give that person a richer experience. If you are interested in reading the updated bylaws, you can find them at our website. Click on the [About](#) tab and look under History & Mission.

Autumn 2016

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2017 JOINT ANNUAL MEETING— FORESTS AND WILDLIFE: RESPONDING TO CHANGE

The 2017 joint annual meeting of the Washington Chapter of the Wildlife Society and Washington State Society of American Foresters will be held **March 28-31, 2017** in Yakima, Washington. We have been working on an exciting schedule of workshops and presentations. We're offering four half-day workshops on Tuesday: Developing Forest Stewardship Plans, Alternatives to Lead Ammunition for Big Game Hunting, Identification and Special Management of Forested Wetlands, and Timber Harvest Contracts and Compliance.

Five leaders of state, federal, and private natural resource management organizations will speak at Thursday morning's plenary session. Topics for concurrent sessions on Wednesday, Thursday, and Friday include the following:

- Forest Health and Ecological Integrity
- Global Markets and Trends
- Predator/Prey Relationships
- Forest/Wildlife Research
- Thinning for Wildlife and Late and Early Seral Habitats
- Meso-carnivores

We will also have a session devoted to hot topics such as grizzly bear reintroduction, white-nose syndrome, diseases in deer and elk, and eelgrass restoration in Willapa Bay.

Evening activities include a student mentoring session and hosted reception on Wednesday, and banquet, photo contest, and quiz bowl on Thursday. Check back often at the [WA-TWS](#) and [WSSAF](#) websites for more information.

We are accepting contributed abstracts for papers, posters, and Ignite presentations until January 1, 2017. Oral presentations will be 20 minutes with time for questions; Ignite presentations are 5 minutes and contain exactly 20 slides. Submit your abstracts to kozj@yakamafish.nsn.gov and refer to the call for papers on our [website](#) for abstract guidelines.

We are holding an art contest for the conference program cover. Please send your 8½ × 11 submission (non-photography) to danielle.munzing@dnr.wa.gov by January 1, 2017.

Special conference room rates at the Red Lion will be available for booking until March 14, 2017. Go to <http://www.redlion.com/yakima/guestrooms> or call 844-248-7467. There is also a Free Lodging Incentive for

students. See the next page or the [WA-TWS website](#) to apply.

It's not too late to volunteer! Email Katy Stuart at katyshipe@gmail.com to see how you can help make this a great annual meeting!

SEEKING MEETING SPONSORS

Bruce Thompson and Tony Fuchs

The Partner Organizations (WA-TWS and WSSAF) are seeking prospective sponsors to financially assist with providing more opportunities for student engagement and other conservation endeavors associated with the 2017 Joint Meeting in Yakima, WA.

There are various Sponsor Levels that carry different benefits for sponsors depending on the type and amount of contribution toward Joint Meeting expenses. Those levels include:

- Platinum (\$2,400+)
- Gold (\$1,800 - \$2,399)
- Silver (\$1,200 - \$1,799)
- Bronze (\$500 - \$1,199)
- Supporting (\$100 - \$499)
- Raffle/Auction Item Donation (any item and value)

Supporting Sponsors may designate their sponsorship for Student Support or Plenary Speaker support. All sponsors are acknowledged in program materials as well as visually and verbally throughout the Joint Meeting.

Please help by identifying prospective sponsors that may be contacted with more detailed information and the necessary forms. The deadline to arrange sponsorships is **January 31, 2017**, so act soon. **Please provide prospective sponsor contact info (name, address, phone/email) to WA-TWS Past President Tony Fuchs (tony.fuchs@pse.com).**



Say's Phoebe. Photo by Danielle Munzing.

QUIZ BOWL

Sara Hansen

Following on the success of last year's first annual quiz bowl, won by WSU's TWS Student Chapter, WA-TWS (in conjunction with WSSAF) is planning once again to challenge your knowledge of all things natural resource science and management. Teams of undergrad students will compete head to head to determine who holds the (taxonomic) keys to the kingdom. Prizes will be awarded to the winning team!

Please join us for an exciting evening of competition and help cheer on your favorite team!

Ready to enter your team? Have questions? Please send an email to Sara Hansen at sara.hansen@dfw.wa.gov. To enter your team, include the following information:

- School name
- Names, email addresses and cell phone numbers of 4 participants and 1 alternate (with an asterisk by the team captain's name).

TIDBITS



Ken Bevis, tree-hugger

Congratulations to WA-TWS board member **Ken Bevis**, who was featured in an article for BirdNote on Northwest Public Radio, titled "Leaving behind Burned Trees for Bird Habitat." Throughout his career, Ken has been touting the value of dead trees as wildlife habitat. In 2014, his personal property burned (his house survived) and now he has a small forest of snags. The piece aired on November 1, 2016, and can be found at <http://nwpr.org/post/leaving-behind-burned-trees-bird-habitat>.

Former WA-TWS Chapter President **Bruce Thompson** has been elected to serve as the president of TWS nationwide. Bruce accepted the gavel and took the stage at the TWS conference in Raleigh, NC, to explain his vision



**Bruce Thompson (R) accepting the TWS presidential gavel:
Local boy makes good!**

for the coming year. He spoke directly to the students and young professionals in the audience, encouraging them to seize opportunities and take advantage of older members' support and mentorship. Opportunity is often missed, he said, because it comes dressed in overalls and it looks like work—a quote he borrowed from Thomas Edison. By accepting work and making their voices heard, TWS members have the power to shape the future.

Thompson also described the theme of his presidency: "Wildlife Conservation: Crossroads of Cultures." The next conference will be held in Albuquerque, NM, a crossroads both geographically and historically, he says. But beyond that, wildlife conservation must involve a coming together of people from different backgrounds and points of view.

"This is my way of stepping off into the next year, not just for the conference, but for all that we do in The Wildlife Society," Thompson said. "Wildlife conservation is a crossroads of cultures."

FREE LODGING FOR STUDENTS!

The Washington Chapter of TWS is providing some **free student lodging** for use during the 2017 Joint Meeting!

Undergraduate and graduate students in natural resources programs (wildlife, forestry, conservation biology, etc.) who are interested in attending the Joint Meeting are encouraged to apply for a lodging incentive. The incentive is free lodging for 3 nights (March 28, 29, and 30) at the Red Lion Yakima, the host facility for the Joint Meeting. Students selected to receive the incentive will be expected to volunteer 4 to 6 hours of time before or during the meeting to help with the program.

This incentive is part of WA-TWS' efforts to promote student participation in the Joint Meeting and make the cost of meeting attendance more affordable for students.

To be considered, complete and submit the Application Form **by February 15, 2017**. Copies of the form are available in this newsletter (see next page) or at our [website](#).

Application for Student Lodging Support

(for natural resources students at educational institutions in North America)

2017 Joint Meeting of Partners

Washington State Society of American Foresters

Washington Chapter of The Wildlife Society

Yakima, Washington (Red Lion Hotel & Yakima Convention Center)

28-31 March 2017

Applicant Information:

Name: _____ Gender: _____

Address: _____

Telephone and E-mail: _____

Educational Institution Name: _____

Major Program of Study: _____

Advisor Name: _____

Education Program Level: Undergraduate Masters Doctoral

Reason for Requesting Support (*check/complete all that apply*):

- Delivering Presentation/Poster
- Serving on Partner Committee
- Financial Challenge (*explain briefly*)
- Serving on Committee for Meeting
- Part of TWS Leadership Institute
- Enhance/Supplement Field of Study

Other (*explain briefly*) _____

How might receiving this support help you leverage other financial assistance or professional opportunities? (*explain briefly*):

NOTES:

- Recipients will be granted free lodging at Red Lion Hotel for the nights of March 28, 29, and 30, 2017. Recipients will be responsible for their own meeting registration, meals, and incidental expenses.
- Partners anticipate providing 4 to 6 student rooms, with up to 4 persons (same gender) in each room.
- Any student receiving lodging support will be required to provide 4 to 6 hours of volunteer help before and/or during the course of the meeting.
- Recipients are required to attend the meeting on March 29 and 30 at least.

Submit completed application (electronically [e.g., pdf] preferred) to arrive **by February 15, 2017** to

Bruce Thompson, 10025 91st Ave NE, Arlington, WA 98223 (bcthompson248@gmail.com).

If problems with submission, call Bruce at 505-660-0533

CONSERVATION REVIEW COMMITTEE UPDATE

Katy Stuart

The Conservation Review Committee has responded to several requests for WA-TWS support of wildlife conservation initiatives throughout 2016.

In April we endorsed the Eastern Washington Snag Conservation Working Group, which is working to educate the public on the value of snags and deadwood for healthy forest ecosystems and fisheries, and working with U.S. Forest Service staff on management solutions for protecting snags in Oregon and Washington. More than 100 species of northwest wildlife, including several species of rare woodpeckers, use snags. As part of our endorsement, the WA-TWS logo was included on an educational brochure on snag conservation.

In May we reviewed a request from the Washington Prescribed Fire Council to support their mission to “protect, conserve, and expand the safe and responsible use of prescribed fire on the Washington landscape to meet both public and private management objectives.” Prescribed fire can be an important tool for conserving wildlife habitat in fire-dependent forests by reducing fuel loads and wildfire severity. The Resolutions and Public Statements Committee drafted a letter endorsing the formation of the Council and pledging professional assistance from WA-TWS as needed.

We are currently reviewing a request for support of Washington’s Wild Future: A Partnership for Fish and Wildlife (WDFW’s budget initiatives for 2017-2019) and exploring involvement in the Conservation Affairs Network of The Wildlife Society nationally.

NORTHWEST SECTION NEWS

Harriet Allen

Hi All,

2016 has been a big year for TWS and following the TWS Council meeting and 23rd Annual Conference in Raleigh in October, there is a lot of news! I thought it would be helpful to give you a summary of several points made by TWS Executive Director (ED) Ken Williams at the Members

Meeting during the conference. It really captured the new and exciting developments happening within TWS during 2016.

Transitions—Sadly, one of the news items is that ED Ken Williams has decided to retire as of July 1, 2017. He has done an outstanding job for TWS since he came on in 2013 when the Society was in a real crunch time. Efforts are now underway to hire a new ED. Bruce Thompson is now President of The Wildlife Society and already working on issues and plans for 2017. Together with ED Williams, he has a Leadership Letter in the most recent issue of *The Wildlife Professional* on the theme of next year’s conference, which is “Wildlife Conservation: Crossroads of Cultures.” The 24th annual conference will be held from September 23 to 27, 2017, in Albuquerque, NM.

2016 Annual Conference—The Raleigh conference had the third-largest attendance of any of the Society’s annual conferences, and 49% of the attendees were students! This follows a trend seen last year in Winnipeg, where 46% of attendees were students. Conferences over the last 3 years have grown from 1,394 in Milwaukee, to 1,552 in Pittsburgh, to 1,564 in Winnipeg, and over 1,850 in Raleigh. ED Williams expressed the expectation that the trend

would continue in Albuquerque in 2017, Cleveland in 2018, and Reno in 2019 (which will be the first-ever joint annual conference of TWS and the American Fisheries Society). The Raleigh meeting featured 4 plenary sessions, more than 900 educational opportunities, 40 networking opportunities, and many special events. Also, the 10 members of the 2016 Leadership Institute gave presentations to Council on ways to increase membership at local and national levels. <http://wildlife.org/leadership-institute-class-of-2016-meets-in-raleigh/>

A number of **TWS Awards** were presented at the meeting, including the Distinguished Service Award to **Blake Murden**, a longtime active member of the Washington Chapter.

Please consider nominating your colleagues for TWS awards in 2017. Information on the awards can be found at <http://wildlife.org/engage/awards/>. The nomination deadline for the Group Achievement Award and for TWS



Mountain goats at Mount Rainier.
Photo by Katy Stuart.

Fellows is **February 1**, and nominations for Wildlife Publications Awards are due by **March 1**. All other TWS award nominations are due by **May 1**, to give more time for submissions.

ED Williams also addressed the status of TWS finances, which were discussed in detail at the Council meeting as well. We are continuing a positive trajectory in our finances, after a difficult time a few years ago. In June 2016, we completed the third consecutive year of the Society running in the black; over that time our asset picture has improved dramatically, with increases averaging 15% each year. He noted that the Society appears to have moved into a pattern of stable and sustained growth, and that stability has allowed us to rebuild and expand member benefits and member services, and to renew our efforts to strengthen the Society's voice for wildlife in the conservation community.

We have made, and are making, major strides in each of the 5 major themes in the TWS strategic plan: focusing on wildlife science, recognition and influence in the conservation community on wildlife issues, service to our members, integration of the Society's organizational units, and sound business management.

Member Benefits—ED Williams highlighted new initiatives that we couldn't afford a few years ago, including one of the biggest TWS announcements:

For the first time ever, beginning January 2017, TWS members will have online access to all TWS journals as a member benefit, at no additional cost.

Other initiatives and benefits are the great expansion of our communications capacity, with the TWS web site, weekly e-Wildlifer, and social media presence. In the policy arena, the Society has reinvigorated its government affairs program, encouraging engagement with federal and state agencies and with chapters and sections. Creation of the Conservation Affairs Network with chapters and sections has increased the Society's policy effectiveness. Keith Norris, TWS Director of Government Affairs and Partnerships, met with TWS chapter and section leaders at the Raleigh Conference and led a discussion on Conservation Affairs Network activities. Section and chapter leaders discussed policy issues that are impacting wildlife professionals in their regions and opportunities to collaborate. Norris noted, "As we continue to strengthen the connections between TWS staff, sections, chapters, and working groups, we will see increasing benefit for our members and science-based wildlife conservation."

TWS is experiencing dramatic growth in partnerships with other organizations as well, including Ducks Unlimited, National Wild Turkey Federation, American Fisheries Society, Association of Fish and Wildlife Agencies, and National Wildlife Federation. In addition,

- The Wildlife Professional has been increased from 4 to 6 issues per year;
- TWS is creating a voluntary member directory to facilitate networking (**be sure to update your profile to help with this!**);
- We've been upgrading conferences to make them more valuable to members;
- We've been able to lower expenses and expand our interactions and services to chapters and sections; and
- We have turned the corner on our membership numbers, seeing year-by-year increases in membership.

ED Williams ended by saying that he believes that the resurgence of TWS is well on its way to being accomplished, and will be even further along by next July, when he turns the helm over to the next Executive Director. If you're not already a member, there are lots of good reasons and great benefits to joining The Wildlife Society!

Wishing all good holidays,

Harriet Allen

Northwest Section Representative

AWARD NOMINATIONS

Bill Vogel

If you want to nominate a person, group, or organization for one of these awards, IT'S EASY! Just send a short note to the Awards Committee Chairperson (william_o_vogel@yahoo.com). It is helpful if you provide the information below. If you want, you can further strengthen your nomination with additional statements of support or by having another member do the same or second your nomination. The Awards Committee will review all submissions and make recommendations to the full Board. If the nomination is successful we may ask for more information from you to help fully document the accomplishments and make award arrangements. More information about the award categories and the application process is available at our website. Just click on "About" and scroll down to "Awards." Or you can just follow this link: <http://wildlife.org/washington-chapter/awards/>. If you have **ANY** questions or want to discuss ideas, please call Bill at (360) 753-4367.

REGIONAL REPORTS



What have our colleagues been up to lately? These reports help keep us informed of the various wildlife and habitat management, habitat restoration, and research projects occurring throughout Washington. If you do not see your important work represented here please consider contributing to the next newsletter by contacting your regional representative. Contact information is on the back page of this newsletter.

OLYMPIC REGION – Betsy Howell, USFS

Pacific Marten Surveys: Olympic National Forest and National Park

Betsy Howell, Olympic National Forest

Surveys for Pacific marten in Olympic National Forest (ONF) and Olympic National Park (ONP) in 2016 focused on coastal areas during the winter and high-elevation areas during the summer. The five documented marten records in recent years have all been at high elevations. However, recent survey work in the Coast Range of Oregon has also documented the presence of martens <1 km from the ocean ([Moriarty et al. 2016](#)). Given these recent findings from the Oregon Coast, we speculated that remnant marten populations on the Olympic Peninsula most likely occur either in coastal areas at low elevations in relatively dense, shrubby habitat conditions (as in Oregon and northern California), or at high elevations, perhaps above the areas where other predators reach their highest densities.

From November 2015 to March 2016, we surveyed 108 camera stations and 54 sample units in the coastal strip of ONP. Cameras were in the field for a minimum of 60 days and collected a minimum of 77,300 photographs. Fishers were detected at 48 stations (44% of stations) throughout the survey area, which extended from Lake Ozette in the north to the Quinalt Indian Reservation in the south. No martens were detected during this effort.

From July to September 2016, we surveyed 85 camera stations and 43 sample units in the high-elevation habitats of ONP and ONF near the locations of the historic and

recent records of martens. Cameras were in the field for a minimum of 57 days and collected a minimum of 319,749 photographs. One marten was detected at one station in ONP in the Upper Hoh watershed. There were no fisher detections during the summer surveys on the cameras set for martens. Several other carnivores were recorded, however, including short- and long-tailed weasel, coyote, bobcat, black bear, and cougar.



Pacific marten at a high-elevation camera station



Other visitors (look closely!)

Fisher Monitoring: Olympic Peninsula

Betsy Howell, Olympic National Forest, and Patti Happe, Olympic National Park

Almost 9 years after the first fishers were released into Olympic National Park (January 2008), the last of the remote cameras and DNA boxes to monitor the population have been pulled and packed away. This marks the completion of the second phase of the reintroduction project, which has used non-invasive survey techniques to assess the current distribution of and area occupied by fishers, genetic characteristics of the population, and reproductive success of the animals.



Fisher in Olympic National Forest, July 2016



Fisher in Olympic National Park, December 2015

Now we face months of data analysis. Fishers were documented at several locations across the Peninsula this year, and perhaps by the next newsletter, we'll have some preliminary results to share with everyone. In the meantime, go to this link for a great fisher video taken in October: <https://youtu.be/10VOSDEUMZw>. This monitoring effort has involved a tremendous level of participation from many partners. Big thanks go to all involved!

Pollinator and Cavity Nester Habitat Improvements

Karen Holtrop, Olympic National Forest

The Olympic National Forest (ONF) continued to work with the Washington Department of Fish and Wildlife to restore Taylor's checkerspot butterfly habitat. In October 2016, a Washington Conservation Corps crew worked removing encroaching vegetation to improve and expand habitat. Funding for the project included monies from a USFWS endangered species recovery grant. In the spring and summer the Forest conducted surveys for larvae and adults, documenting butterfly occupancy throughout the project areas. Pre-diapause larval surveys revealed 28

oviposition sites, of which 18 were in habitat restoration areas.

ONF had awarded a contract with the Center for Natural Lands Management (CNLM) to increase seed of Taylor's checkerspot larval food plants. We received the first *Collinsia parviflora* and *Plectritis congesta* seed in the fall of 2016. The seed was applied in habitat restoration project areas to enhance caterpillar food availability and to prevent invasion of non-native plants. In addition, the Forest received 2300 *Castilleja hispida* plugs from CNLM, which were planted in Taylor's checkerspot habitat by volunteers.

ONF also created wildlife trees by topping and girdling trees to improve habitat for cavity nesters. This work was done by fire crew personnel. The crew used electric saws, which are quieter than gas saws, to minimize noise disturbance in the forest. In addition, as part of the ONF All-Employee Work Day, employees constructed and installed bee houses.



Volunteers planting for Taylor's checkerspot habitat improvement



ONF employees installing a bee house.

Dosewallips River Estuary Restoration

Seth Elsen, Hood Canal Salmon Enhancement Group

The Hood Canal Salmon Enhancement Group (HCSEG) and the Washington State Department of Natural Resources recently partnered to restore critical habitat in the Dosewallips River Estuary. The project seeks to restore natural estuarine habitat at the mouth of Walker Creek, which feeds into the greater Dosewallips River estuary complex, near Brinnon on Hood Canal. Much of the work entailed removing a large creosote-treated barge embedded in the shoreline. Creosoted wood can leach toxic chemical compounds into the aquatic environment, so removing this barge will improve water quality and habitat value for both fish and wildlife. Work also included removing large amounts of fill and regrading the shoreline. HCSEG will be adding habitat enhancement features, such as logs and rootwads, and planting native vegetation along the shoreline.



Dosewallips estuary restoration site before, during, and after the work of removing the barge.

Creosote contains a harmful group of chemicals known as polycyclic aromatic hydrocarbons (PAHs). Juvenile salmon migrating through urban estuaries show reduced disease resistance and changes in growth and metabolism, with similar results as seen with animals exposed to PAHs in lab studies. Salmon are only some of the many species subject to harmful exposure of the chemicals present in the creosote-treated lumber in this barge. In addition to being a source of toxic chemicals, this barge is associated with large quantities of fill material that were brought in and placed right in the estuary. Part of this project is removing this fill material so that the half-acre footprint can once again

belong to the estuary and all of the habitat that goes along with it.

The Dosewallips River Estuary is home to Hood Canal summer chum, which are listed as threatened under the Endangered Species Act (ESA), and to Chinook, coho, and pink salmon. The estuary provides critical habitat during the rearing stage of juvenile salmon. During this stage, juvenile salmon feed on invertebrates that thrive in the estuary and depend on the vegetation and shallow tidal channels for cover from predators.

Restoration efforts will add approximately 19,500 square feet (0.45 acre) of intertidal habitat to the greater Dosewallips Estuary and Dabob Bay, and will restore 5,000 square feet (0.11 acre) of upland riparian habitat.

The barge itself likely dates back to the first half of the 20th century. It's not clear what the barge was used for before it was placed on the shoreline, but locals have pointed out that the project site is the location of a terminal for the ferry that once ran from Brinnon to Seabeck. After the barge was brought onto the shore and the fill material was placed next to it, an oyster processing facility, labeled as "Seafarms" in old county records, was placed on top of the barge. A septic tank and a well were found in the fill material during construction. An old photograph shows the barge with buildings on its surface and powerlines running down to it. Clearly, there used to be a lot of activity at this site. In the past several decades, however, the site has been entirely abandoned and the barge has been slowly falling apart. Just in the beginning of 2016, the outer wall of the barge collapsed during a storm. If the barge hadn't been removed, large portions may have broken up and been swept away, spreading creosote-treated lumber throughout Hood Canal.



Breaking down the barge to remove it from the estuary

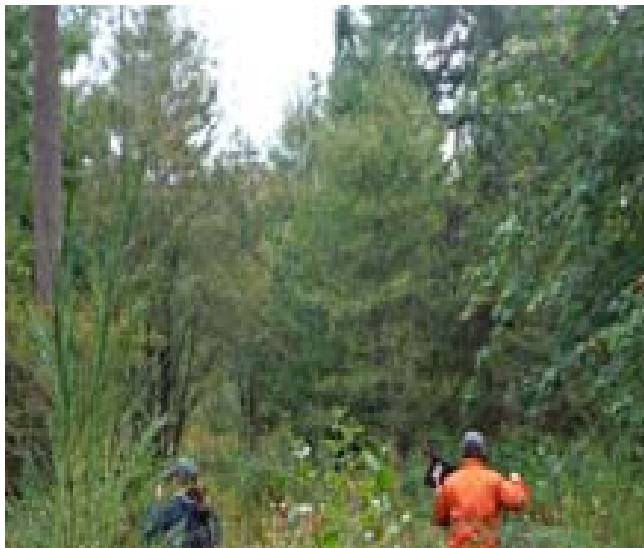
Now that the barge has been removed and most other work is now complete, HCSEG will be focusing on native plantings and other habitat enhancements, which should be completed later this fall.

NORTHWEST (PUGET SOUND) REGION – Steve Hall, Point Environmental Consulting, Inc.

Thurston County Still Working out Pocket Gopher Process

The 4-year saga of pocket gophers in Thurston County continues to unfold, as the Washington State Growth Management Hearings Board determined last May that the County's process for reviewing projects for impacts on pocket gophers violated the State's Growth Management Act.

In April 2014, USFWS listed four subspecies of the Mazama pocket gopher as threatened in parts of Thurston and Pierce counties. Since then, local governments have been working with USFWS to determine how to issue local permits for projects that might affect ESA-listed gophers. Staff from Thurston County and USFWS have cooperated in performing on-the-ground reviews to provide customer service and allow landowners without gophers to move forward with their activities. Some developers have sought protection from liability under the ESA by creating habitat conservation plans and applying for incidental take permits, as allowed under Section 10 of the ESA. Others have taken the matter to court and have criticized local governments and USFWS for creating unnecessary burdens on land development.



Thurston County and USFWS staff conducting a property review for gopher habitat. Photo: Thurston County

Thurston County is currently working to develop a habitat conservation plan that will clarify where development can occur and how damage to habitat can be mitigated; implementation of the plan is also expected to speed up the permitting process.



Pocket gopher. Photo: Thurston County

Thurston County Habitat Conservation Plan Website

<http://www.southsoundprairies.org/home/thurston-countys-habitat-conservation-plan-hcp.html>

The Olympian: Federal cuts create backlog of Thurston County gopher reviews

<http://www.theolympian.com/news/politics-government/article89981972.html>

Puget Sound Estuary Restoration Projects Hinge on New Congress and Administration



Nooksack River Delta. Photo: Google Earth

Funding for three major estuary restoration projects proposed in northern Puget Sound – totaling \$450 million – just passed in the House. Congressman Rick Larsen (WA-02), who has led the funding effort, issued the following statement:

As one of the largest habitat restoration efforts in the history of the United States, this wide-reaching project is integral to the implementation of the Puget Sound Action Agenda, the recovery and protection of several fish and mammal species listed under the Endangered Species Act, and the fulfillment of tribal treaty rights. This project will help facilitate restoration of river deltas, beaches, open coastal inlets, and barrier embayments within the region.

If signed into law, the funding would cover three projects to restore about 2,100 acres of habitat at the Nooksack,

Skagit, and Duckabush Rivers, including removing dikes and reverting agricultural lands back into estuary habitat.

However, the Washington Farm Bureau is actively opposing the legislation and is likely to find sympathetic ears when final funding will be considered by the next Congress. These projects may very well be among of the first wildlife programs to feel the effects of the new Administration and Congress.

The three projects are part of a set of 11 projects the U.S. Army Corps of Engineers recently selected as part of an ecosystem-level restoration effort in Puget Sound.

Tentatively Selected Restoration Actions

http://www.pugetsoundnearshore.org/selected_plans.html

Western Livestock Journal: Ecosystem project could impact farmland

<https://wlj.net/article-13511-ecosystem-project-could-impact-farmland.html>

Is Puget Sound in Store for Yet Another “Cascading Ecosystem Change?”

Just as biologists were bracing for ecosystem-level changes resulting from the ongoing sea star die-off, a new invasive species has arrived on the scene that – if it were to become established – could also cause cascading, ecosystem-level changes throughout the Salish Sea.

In late August, the very first European green crab (EGC) was confirmed within Washington’s inland waters. The single, adult male crab, measuring about three inches across, was found off of San Juan Island. Researchers at the UW’s Washington Sea Grant program – who had been expecting this most unwanted visitor – quickly responded by setting hundreds of traps along the island to determine the extent of the invasion.

None was found, but as with mice and cockroaches, when there is one, there are many.

And sure enough, soon after that first report, biologists from the Padilla Bay National Estuarine Research Reserve reported finding another EGC in Padilla Bay, approximately 30 miles south. Subsequent trapping by the Sea Grant team resulted in three more captures.

According to Crosscut, EGC were first found in San Francisco Bay in the late 1980s and have since slowly moved north. The species is able to disperse long distances as larvae, traveling on ocean currents.



Photo: Greg Davis via Crosscut

Green crabs are known to destroy eelgrass beds by digging and burrowing. This, in turn, could have cascading effects through the many organisms that depend on eelgrass, including native crabs, salmon, forage fish, birds, and marine mammals. In addition, green crabs can eat almost anything, including clams, oysters, mussels, and juvenile native crabs.

The only effective control for the species is trapping, and we can be sure that the Sea Grant Crab Team will continue their trapping work to try to prevent the spread of this highly aggressive invader into Puget Sound.

Sea Grant Crab Team

<http://wsg.washington.edu/community-outreach/environmental-threats/invasive-green-crab-volunteer-monitoring/>

Crosscut: Invader crabs from Europe threaten havoc in Puget Sound

<http://crosscut.com/2016/09/invader-crabs-from-europe-threaten-havoc-in-puget-sound/>

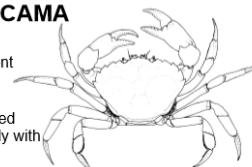
PLOS ONE: Transboundary Impacts of Sea Star Wasting Disease

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0163190>

EUROPEAN GREEN CRAB - CAMA

Carcinus maenas

- Carapace: oval to 90 mm; 5 prominent marginal teeth, 3 rostral bumps
- Claws: not rounded
- Walking legs: last pair slightly flattened
- Color: green, brown, reddish, typically with orange joints



© Greg Jensen

S.F. Stillaguamish Vegetation Management Project

The Mt. Baker-Snoqualmie National Forest is developing a project to thin approximately 6,000 acres of young, dense timber stands within the South Fork of the Stillaguamish River drainage. The purpose is to provide increased forest structure and associated wildlife species use, enhance vegetation diversity, and promote stand resiliency to climate change on a landscape scale. The project also has some proposed recreational and access components, including trailhead enhancements, road improvements, and road decommissioning.

The MBSNF, along with 17 other national forests within the range of the northern spotted owl, will soon be undertaking forest plan revisions that include revisions to the Northwest Forest Plan. These revisions are expected to include modifications to the types of actions allowed within Riparian Reserves and in Late Successional Reserves. The Forest Service recently issued a science synthesis report to inform the process of revising forest plans within the Northwest Forest Plan area.

S.F. Stillaguamish Vegetation Management Project

<http://www.fs.usda.gov/project/?project=48837>

Science Synthesis Reports

<http://www.fs.fed.us/pnw/research/science-synthesis/>

With White-Nose Syndrome, No News is Good News

Since Washington's first case of white-nose syndrome (WNS) was confirmed near North Bend last March, WDFW and other state and federal agencies have been monitoring bat populations and testing for the fungus that causes the disease.

So far, all samples collected from live bats and the environment have tested negative. A silver-haired bat carcass submitted to the Washington State Department of Health did test positive for the fungus but did not show any symptoms of WNS. The bat was collected in the same month and in the same county as the first confirmed Washington case of WNS.

WNS was first documented at four sites in eastern New York 2007. Since that time, the disease has killed hundreds of bats in 29 states and 5 Canadian provinces, with most documented cases within hibernation sites.

<https://www.whitenosesyndrome.org/>

WDFW WNS page

<http://wdfw.wa.gov/conservation/health/wns/>

Researchers' Worst Nightmare



L95 swims in the Pacific Ocean near La Push in February 2016, shortly before being fitted with a satellite tag. File photo provided by NOAA Northwest Fisheries Science Center, via AP.

Most any wildlifer who has conducted species-specific field research would probably admit to falling in love with their subject species, be it an owl, newt, or bear. So most wildlifers can imagine the love researchers who study the Salish Sea's southern resident killer whales must feel for their subjects.

That is why the death of the southern resident killer whale known as L95 in March 2016 is so heartbreaking, because the researchers studying the whale not only lost one of their key subjects, but they also may be responsible – at least in part – for the animal's death.

Researchers found the floating carcass off of BC's Nootka Island. An initial inspection found two small holes at the insertion of the dorsal fin indicating that a satellite tag had been recently attached to the animal. Genetic testing later revealed that the whale was L95, an adult male southern resident killer whale that had been satellite-tagged on February 23, 2016.

Final necropsy results published in early October by the Department of Oceans Canada found that L95 had died from a fungal infection that may have been introduced through the tag wound. The report could not identify the source of the fungus, which may have been present on the whale's skin. Based on the necropsy report, the infection appears to have entered through the tag wound.

In light of that finding, NOAA Fisheries convened an expert panel of veterinarians and biologists to review the case and concluded that a few extenuating factors may have predisposed the whale to the fungal infection. These included the following:

- Incomplete sterilization of the tag after it fell in the water during an unsuccessful initial tagging attempt
- Broken parts of the tag that remained in the whale

- The location of the tag near significant blood vessels.

In addition, the whale's body condition that may have compromised its immunity.

Since the reports are not definitive, we will never know exactly what happened or precisely which factors were at play.

The tags consist of a transmitter about the size of a standard 9-volt battery and two 6-cm retention darts. According to NOAA Fisheries, similar tags are used throughout the world to study marine mammals, including off the coasts of California, Washington, North Carolina, Alaska, Hawaii, and the Bahamas.

All satellite-tracked tagging of southern resident killer whales has been halted pending a comprehensive review of the tagging program.



The carcass of L95. Photo: Canada Department of Fisheries and Oceans

NOAA Southern Resident killer whale tagging program website

https://www.nwfsc.noaa.gov/research/divisions/cb/ecosystem/marinemammal/satellite_tagging/faq.cfm#195

National Geographic: Orca Killed by Satellite Tag Leads to Criticism of Science Practices

<http://news.nationalgeographic.com/2016/10/orca-killed-by-satellite-tag-159/>

NORTHEAST REGION – Annemarie Prince, WDFW

Updates from the Colville National Forest

Work proceeds apace on three projects designed to monitor the effects of the forest management restoration activities on wildlife. The projects have been funded through the

Colville NF's Collaborative Forest Landscape Restoration Project on the west side of the Forest.

Longtime WA-TWS members Peter Singleton (USFS/PNW research lab) and Chris Loggers (USFS/Colville NF) initiated a project this year to determine the effects of forest management and fire on goshawks and habitat use, and to examine goshawk genetics across the Inland NW. In the pilot year, WDFW's Jim Watson and associate Bob Davies captured 2 males and fitted them with Ecotone backpack store-on-board GPS tags (solar recharged), set initially to record 15 locations per day and reduced to 3 per day for winter mode. UW's Conservation Canines (Julie Ubigau and dog Sampson) collected genetic samples (feathers, pellets [vomit and fecal] and carcasses), Scott Fisher (WDNR) contributed samples from nest sites, and falconer Craig Hinman contributed the bulk of feather samples. The USFS Rocky Mountain Research Station in Missoula will analyze samples. Singleton developed a preliminary habitat model to identify potential nesting habitat. Surveys of some of modeled high-quality areas yielded 3 new nests. Next year the project will add genetic material from territories on other lands in Northeastern Washington, increase the number of tagged birds, and continue the habitat surveys.

Since 2014, WA-TWS member Lisa Shipley of WSU has been heading up a project to determine the effects of forest management on white-tailed and mule deer foraging behavior, habitat use and population dynamics (see previous editions of *The Washington Wildlifer* for a detailed project description). This year, Stephanie Berry completed the field work portion of her MS and Iver Hull initiated his. Jerry Nelson (WDFW) contributes funding and logistic support to the project. Stephanie received the "Best Poster" award for this project at the 2016 annual meeting...look for a paper to be presented this year?

A project to monitor the effects of forest management on the macro moth community was initiated in 2014 (see previous editions of *The Washington Wildlifer* for a detailed project description). Eight additional sites were sampled in 2016. Jon Shepard continues to identify species, currently approaching about 500, with at least 5 new records for the state. The species and location information for all will specimens eventually be included on the Pacific Northwest Moths webpage (<http://pnwmoths.biol.wvu.edu/>). Eight additional sites will be sampled in 2017 for the final year of fieldwork.

In other news, surveys for western bumblebees (*Bombus occidentalis*) in Northeastern Washington continue. We have found bumblebees in 66 of the 73 townships surveyed to

date. Of the 7 townships in which bumblebees have not been found, 3 were severely burned (and probably will be resampled in 2017) and 2 did not have early successional habitat or roadside openings on lands managed by USFS or BLM. We submitted 42 individual western bumblebees from 41 townships for a genetics study being conducted by Jamie Strange at the Agricultural Research Service. Sampling will continue in 2017.

Our own Kathy Brodhead moved to Colorado in May, where she is a wildlife biologist for the BLM's Gunnison Field Office. She is sorely missed, but her position will not be filled.

New Bear Boxes to Reduce Camper-Bear Conflicts

The Colville National Forest recently completed the installation of 27 food storage lockers at developed campgrounds in Pend Oreille County. These 30-cubic-foot metal lockers are designed to provide campers with a convenient place to securely store food and beverages. The idea is to keep hungry bears from being attracted to occupied campsites. Funding to purchase of the lockers was provided by a long list of cooperators, including Conservation Northwest, Defenders of Wildlife, the Kalispel Tribe, the Pend Oreille County Public Utility District, Scenic Canyons Recreational Services (campground concessionaire), Seattle City Light, and Selkirk Conservation Alliance.



Installing bear-resistant food lockers on the Colville National Forest

Bears are very intelligent animals. They remember where they have found a good meal in the past and will usually revisit those sites in hopes of repeating the experience. If a bear learns that food is readily available at a campground, it may begin to associate the presence of humans with a food reward. Such bears can lose their fear of people and can become increasingly bold and aggressive. It may then become necessary for these animals to be destroyed by state wildlife authorities. The old saying, “a fed bear is a dead bear,” is all too often true.

The Colville National Forest requires campers to store all food, beverages, and other attractants in a hard-sided vehicle or an approved, animal-resistant container when they are away from camp or overnight. Food should never be brought into a tent. Hikers camping away from their vehicles should suspend their food from a tree branch at least 10 feet off the ground and 4 feet from the tree trunk. Forest visitors may be surprised to learn that anything that has a scent, such as candles, soap, deodorant, or toothpaste, can attract a bear. Pet food, un-cleaned grills, and garbage are all powerful wildlife attractants as well.

Officials with the Forest Service expect that the new food lockers will be well used and serve as a reminder to campers that proper food storage is a matter of safety—for themselves, for other campers, and for native wildlife.

Selkirk Mountains Grizzly Bear Research

Wayne Kasworm, USFWS

Captures

For the first time in more than 30 years, a grizzly bear was captured by wildlife biologists in Washington. The animal was radio-collared and released so that more can be learned about this species that is on the federal list of threatened species and the state list of endangered species.

On June 29, 2016, a young male grizzly bear was captured by a multi-agency team southeast of Sullivan Lake in Pend Oreille County (photo below). The bear weighed 365 pounds and was estimated to be five years old. It was radio-collared and released at the site of capture in the Granite Creek drainage. This is only the second capture of a grizzly bear in Washington; the first occurred in 1985 near Huff Lake in the Selkirk Mountains. Another bear—an adult female (245 pounds) accompanied by at least one cub—was captured near Boundary Creek in Idaho on August 14, 2016. Both bears were fitted with GPS radio collars and are being monitored.



Grizzly bear capture in Pend Oreille County

To our north, Dr. Michael Proctor in cooperation with the BC Conservation Officer Service captured 5 grizzly bears (2 females and 3 males) between June and August 2016 in BC's Creston Valley. All 5 animals were captured in the valley floor with the goal of determining how bears are using these lowland habitats. Another adult female was captured and radio-collared about 10 miles northeast of Castlegar along the Kootenay River and released in the Selkirk Mountains.

Monitoring

We started the year monitoring 4 grizzly bears in the U.S. and 8 bears in BC. Several bears lost collars but additional bears were trapped and collared, meaning we are now monitoring 4 bears (2 females and 2 males) in the U.S. and 9 bears (6 females and 3 males) in BC. One collared female in the U.S. is accompanied by two yearlings. One of the radio-collared males is a young bear that was originally captured in the Yaak near the Idaho-Montana border and then moved west across the Kootenai River during early September 2015. He dened in the Selkirk Mountains during the winter of 2015-16. This is the second young male we have tracked moving from the Yaak area into the Selkirk Mountains just south of the international boundary. The other such movement occurred in 2006, when a young male that was captured north of the international border moved from the Yaak to the Selkirk Mountains before losing his radio collar in the Mill Creek drainage of Washington.

Hair Snagging for Genetic Analysis

We are continuing to perform monthly checks of rub trees in all study areas and placing trail cameras at corrals to snag hair for genetic analysis. Corrals are left for 3 to 4 weeks before hair collection and removal. Each corral is equipped with a trail camera to record the presence of bears or other species. If bears do not leave hair we still have a picture of the animals involved, which is particularly useful for identifying females with young. We are establishing more rubs in the Selkirk Mountains that will be checked on a monthly basis, plus corrals with trail cameras that provide hair samples for genetic analysis.

South Selkirk Mountain Caribou Herd

WDFW Region 1

The Selkirk Caribou International Technical Work Group (SCITWG – pronounced “Sky Twig”) conducted a public information update meeting November 1 in Bonners Ferry, Idaho. SCITWG has been meeting periodically over the last couple of years to develop strategies to recover the endangered South Selkirk subpopulation of woodland caribou. The herd has dwindled to 12 animals, some of which occasionally wander into Washington and Idaho.

SCITWG is made up of biologists from USFWS, WDFW, Idaho Department of Fish and Game, BC Ministry of Forests, Lands, and Natural Resource Operations, Kootenai Tribe, Kalispel Tribe, and First Nations; the group is facilitated by Alison Squier. USFWS has proposed listing the entire Southern Mountain Caribou Distinct Population Segment (DPS) as endangered. The DPS includes both the already-listed South Selkirk subpopulation and approximately 1,500 caribou in southern British Columbia north of the Selkirks. The idea is to focus recovery on the core population for any hope of bringing the Selkirk animals back from the brink. A near-term strategy proposed by the Kootenai Tribe is maternal penning—that is, capturing pregnant female caribou and penning them through the birth of calves and into the summer to protect them from predation. Maternal penning has been conducted with some success in the Revelstoke area of British Columbia. Control of caribou predators—mostly wolves—is another near-term strategy underway in Canada.



Photo Credit: Steve Forrest, Wikimedia Commons

Interstate 90 Wildlife Crossing Structures

William Meyer – WDFW

For more than 20 years, countless wildlife biologists have been involved in the project to widen I-90 near Snoqualmie Pass, working to ensure that wildlife crossing structures would be built—and that they would be located in the right places. WA-TWS members who have contributed to the effort have included William Meyer and Brent Renfrow of WDFW, Peter Singleton and John Lehmkuhl of USFS, Bill Vogel and Karl Halupka of USFWS, Marion Carey and Kelly McAllister of WSDOT, and many others. Now several of the structures have been installed and are passing wildlife beautifully, even in the temporary absence of the fencing that will eventually be installed. The Gold Creek structure is

more than 1,000 feet long and 30 feet high. In less than a year, more than 200 deer traveled under the structure, along with coyotes, pikas, and geese! We're now working on installing the first wildlife overpass. The first arch has just been completed. After the second arch for the eastbound lanes is constructed, the structure will be topped with dirt, vegetation, and so forth and it'll be ready for action. The I-90 wildlife crossings project is notable for several reasons. For one, when completed, it will be among the largest set of wildlife passage structures (or, more appropriately, ecological connectivity structures) in North America. The project also targets all species (large and small) and ecological processes (floodplain connections, wetland connections, native soil connections, etc.). Check out www.wsdot.wa.gov/Projects/I90/SnoqualmiePassEast to learn more.



Infrared image of the Gold Creek undercrossing in action



Working on the first arch of the I-90 wildlife overpass

Woody Myers Retires after 40 Years

After 40 years of state service, WDFW research scientist (and TWS member since 1977!) Woodrow L. Myers is retiring in December 2016. Woody made significant contributions to the conservation of wildlife and habitat resources, having served in management positions both in Olympia headquarters and the regions, and as a researcher in various parts of the state.

Woody recognized early on the power of working collaboratively within WDFW, with state, federal, and tribal partners, and with students and volunteers. In 1999, as project leader for the Eastern Washington Cooperative Mule Deer Project, he brought together a diverse team of researchers, agency staff, university educators, local schools, and a cadre of volunteers from local sportsmen's clubs. Project Mule Deer contributed significantly to knowledge of mule deer ecology; provided educational opportunities for many graduate students and local school districts; strengthened WDFW's relationships with the outdoor community; and resulted in the publication of over 10 theses and scientific papers. Many of the findings from this research went into the development of Washington's first Statewide Mule Deer Management Plan, which Woody authored. Over his research career, Woody also authored or co-authored 12 peer-reviewed publications and more than 40 technical bulletins and agency reports.

One of Woody's most far-reaching contributions may be the testimony he provided in a federal court case that became a test for the National Environmental Policy Act. This case, which included his expert testimony on potential impacts of development on mule deer migration corridors in the Methow Valley, was reviewed by the United States Supreme Court, which upheld the lower court's decision in favor of NEPA and protecting mule deer habitat.

Woody's extensive experience with ungulate research made him the go-to guy for training of staff on field techniques, ranging from aerial net-gunning, which he introduced to the agency as a capture technique, to aerial telemetry and GPS tracking collars. His skill and experience in capturing over 1,600 ungulates and logging over 3,500 hours in small aircraft made him a valued instructor for WDFW training in chemical immobilization and aircraft safety.



WDFW director Jim Unsworth noted that Woody has exemplified professionalism, *esprit de corps*, and a commitment to natural resources throughout his career as leader, mentor, and friend to countless professionals and students.

Notes from the Northeast

Keith Guenther

We have had more tree frogs than normal around our property adjacent to the Indian Dan Wildlife area near Brewster, Washington this year. For the first time in my life in early September I spotted not one but two tiger salamanders on our patio late at night during a light rain.



Tiger sally near Brewster

Avian Responses to a Heavy Ponderosa Pine Cone Crop

Jeff Kozma, Yakama Nation TFW Wildlife Biologist, and Kevin Lucas, Selah, WA.

We are currently involved in an ongoing study to assess territory occupancy rates of White-headed Woodpeckers (*Picoides albolarvatus*) in the Wenas Valley, Yakima County, WA. The study area is predominantly ponderosa pine (*Pinus ponderosa*) with an understory dominated by bitterbrush (*Purshia tridentata*) at elevations ranging from 785 to 1,010 m. To monitor territory occupancy, we trapped White-headed Woodpeckers and outfitted them with a unique combination of three colored, plastic leg bands and a metal numbered leg band to identify individuals. We trapped birds by placing 6-gallon, rubberized tubs on territories and filling the tubs with water once a week starting around the end of July. We began trapping at these water stations in August using three mist nets set up in a triangle with the water tub in the middle. We also caught other species incidentally that were attracted to the water and banded them with a metal numbered band.

This year we noticed that captures of certain species were much higher than the last two years of trapping despite a relatively consistent trapping effort (5-6 territories trapped per year, with 1-3 trap efforts at each territory). These species were the Pygmy Nuthatch (*Sitta pygmaea*), Red-breasted Nuthatch (*S. canadensis*), White-breasted Nuthatch (*S. carolinensis*), Red Crossbill (*Loxia curvirostra*), and Cassin's Finch (*Haemorhous cassinii*) (Figure 1). We attribute this to a heavy ponderosa pine crop this year compared to almost no cones being present in 2014 and 2015. All of these species consume the seeds of conifers and two of them, the Red Crossbill and Red-breasted Nuthatch, are irruptive and well-

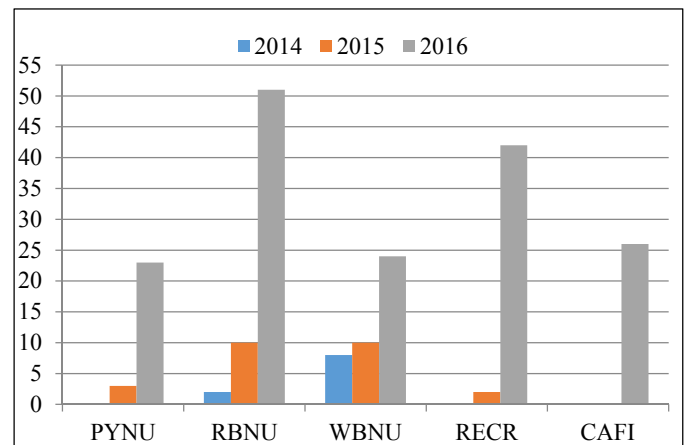


Figure 1. Captures of Pygmy Nuthatch (PYNU), Red-breasted Nuthatch (RBNU), White-breasted Nuthatch (WBNU), Red Crossbill (RECR), and Cassin's Finch (CAFI) in 2014-2016.

known for their propensity to move into areas with abundant cone crops. Red Crossbills started moving into the area in early July with many singing males noted. We observed one nest with young in August and captured many recently fledged birds during our trapping efforts, signifying that crossbills were successfully breeding. Interestingly, by late September to mid-October, flocks of crossbills could no longer be found and only occasional flyovers of single birds or pairs were seen, while the other four species were still being readily observed. The reason for the departure of Red Crossbills is unclear, but we do not think it is because the food resource was exhausted, since we still observed Red-breasted and Pygmy Nuthatches, Mountain Chickadees, and White-headed Woodpeckers still foraging for seeds from cones during this time. For Cassin's Finches, we noticed that in past years, very few are present during the time we are trapping woodpeckers. This year, we believe Cassin's Finches delayed leaving our study area after breeding, instead staying to feed on the abundant crop of pine seed.



One of 52 Red-breasted Nuthatches captured in the Wenas Valley in September 2016. Photo by Kevin Lucas.

Ponderosa pine is cyclic in its production of cones, with some years having few to no cones and in other years cones are produced in extreme abundance. This may be a strategy to ensure that enough seed is produced to overwhelm its consumers allowing some seeds to germinate. Our results demonstrate that some bird species are able to move into areas with abundant cones in large densities in order to capitalize on this periodic abundance of food.

SOUTHEAST REGION – Jason Fidorra, WDFW **Western Monarch and Milkweed Habitat Suitability** **Assessment**

Heidi Newsome, Mid-Columbia NWR Complex

For the past two summers, staff and interns at the Mid-Columbia River National Wildlife Refuge (NWR) Complex have been participating in the USFWS Multi-Region

Western Monarch and Milkweed Habitat Suitability Assessment. This project in cooperation with the Xerces Society has attempted to quantify and map breeding habitat for monarch butterflies and to accurately record occurrence information for this species in Washington and Oregon. Additional partners and data contributors on the project include federal and state agencies, conservation organizations, and citizen scientists.



Monarch butterfly larva

In recent decades, the iconic monarch butterfly (*Danaus plexippus*) has been severely impacted by a variety of threats, including loss of its larval host plant, milkweed, due to increased herbicide use, conversion of natural lands, insecticide use, loss of overwintering habitat, and climate change. The eastern population, which overwinters in Mexico, has shown a population decline of roughly 90% over the last 20 years. Similarly, the smaller western population, which overwinters in sites along the California coast, has decreased in number by over 74% since the late 1990s.

Significant data gaps for the western population of monarchs have been identified regarding migratory pathways and summer breeding locations. This not only limits the ability of USFWS and its partners to identify priority areas for habitat restoration and enhancement projects, but also makes it difficult to prioritize milkweed and monarch surveys. To address these data gaps, a team of biologists and GIS analysts from USFWS and the Xerces Society have been working to produce spatial models to help identify migratory pathways and suitable breeding habitat for western monarchs.

High-resolution occurrence data for milkweed and monarch butterflies is lacking for much of the western United States. This project aims to identify, collect, and integrate current biotic and abiotic data into a GIS database, for a suite of habitat and species-specific variables across the USFWS

regions that support the western population of monarchs. It is critical to this analysis, at any scale, to have fine-resolution occurrence data for both monarchs and milkweed plants to effectively validate, populate, and refine the model, as well as for prioritization of on-the-ground projects and surveys.

GIS information for this project has been used to model habitat suitability and current data collection efforts are focused on refining the model to give it greater utility, and identify priority habitats, corridors, and areas that can be further evaluated for restoration or enhancement purposes. The habitat modeling is focusing on identifying:

- Habitats and landscapes that are most likely to support key species of milkweed, the monarch's host plant. This analysis will be based on milkweed occurrence data and physical and biotic landscape features, such as plant community associations (milkweed and nectar plants), climate, and topography.
- Migratory pathways and suitable breeding habitat for western monarchs. This model will incorporate the milkweed models, and will also use monarch observation data, additional environmental covariates, and threats data (e.g., pesticide use).
- Landscapes that are suitable for monarchs and milkweed and that present special opportunities for restoration via collaboration with partners.



Monarch butterfly habitat survey

The summer of 2016 was the second year of systematic collection of data on the refuges for milkweed habitat and Monarch butterflies. Field technicians spent many hours in the field traversing transects and recording data on milkweed and monarch butterflies. The data will contribute to the overall assessment of habitat in the Western U.S. This overall assessment will serve as a foundation for prioritizing conservation actions for the western population of monarchs, and it will be applicable to all agencies and organizations that focus on monarch conservation. The

refuges of the Mid-Columbia NWR Complex, as well as other refuges in USFWS Region 1, have provided data critical to producing this very important product. Refuge staff hope to use the results to identify areas that can be restored and enhanced to benefit this iconic species. In addition to the work being done by professional biologists, there are opportunities for the public to serve as citizen scientists by reporting their sightings of monarch butterflies at www.xerces.org/milkweedsurvey/.



Columbia Basin Bat Survey Coincides with First Occurrence of White-Nose Syndrome in Washington

Jason Fidorra, WDFW

An effort by WDFW to monitor the distribution of bats in the Columbia Basin of Washington entered its second year this summer. The project employed acoustic bat detectors to record bat species present in the basin using procedures set up in the North American Bat Monitoring Program.

Various water features were targeted, including small farm impoundments, lakes, and the Snake and Columbia Rivers. Forty sites were sampled 3 to 4 times each to observe seasonal trends in species presence. This project was completed in partnership with agencies from seven other western states in recognition of the need for a statistically rigorous cross-state effort to document poorly known bat



Acoustic bat recorder near farm pond site.

populations. This need was heightened by the devastating impact of white-nose syndrome (WNS) on bat populations across the eastern US. We had no way of knowing at the onset of the study that the first documented case of WNS in Washington would be detected during the study period. This was a clear indication that our coordinated monitoring efforts came not a second too soon. Information is still needed to understand the potential prevalence of WNS in Washington and other western states, and how WNS shockingly jumped from the Midwest to the West Coast. While the WDFW monitoring project was originally planned to end after this second year, WDFW is working on continuing careful bat research across the state, which will involve colony studies and continued acoustic monitoring.

Washington Ground Squirrel Relocation Project

Heidi Newsome and Kelsey Lotz, Mid-Columbia NWR Complex

The Washington ground squirrel (*Uroditellus washingtoni*) is a small fossorial mammal endemic to the shrublands and grasslands of the Columbia Basin. These squirrels use silty loam soils in high-quality shrub-steppe habitat with bunchgrass and forb components. However, the conversion of available habitat for alternative uses (primarily agriculture) has resulted in habitat loss and range contraction, causing significant population declines ([Finger et al. 2007](#)). As a consequence, this species is listed in the state of Oregon as an endangered species, and is a candidate for and state listing in Washington. In September 2016, USFWS determined that listing under the ESA was not warranted and removed the Washington ground squirrel from the federal list of candidate species.

Columbia NWR, one of eight refuges within the Mid-Columbia River NWR complex, was selected as a site to attempt soft releases of Washington ground squirrels. Goals



Ear-tagging a Washington ground squirrel

of the releases include reintroducing animals to formerly occupied habitat (or augmenting known populations) and establishing new populations as a means of protecting the species from detrimental stochastic events. Refuge staff in cooperation with WDFW biologists and local volunteers prepared the site for

translocations by planting food plants, installing artificial burrow structures, and constructing a perimeter fence for protection from terrestrial predators. Ninety-one individual squirrels from four sites were trapped and ear-tagged during May of 2016. Of those, 34 squirrels (17 males, and 17 females) were relocated to the Columbia NWR site.

Americorps interns provided supplemental food sources throughout the summer and maintained trail cameras installed within the enclosure. Squirrels were fed carrots, black oil sunflower seed, and raw peanuts three times a week. Trail cameras show active feeding on all available food types. Squirrels have shown strong fidelity to the already-disturbed release site, and have dug new burrows near the artificial burrows. It took squirrels approximately one week to breach the enclosure by digging out under the fence, but squirrels were observed exiting and reentering the enclosure throughout the day. It is estimated squirrels began aestivation in the final week of June, with the final recorded squirrel observation on June 23, 2016. Additional translocation efforts may take place next spring depending on the status of the source population and the number of individuals that persist at the release site.



WGS photo bomb!

The North American Bat Monitoring Project

Jenny Barnett, U.S. Fish and Wildlife Service, and Heidi Newsome, Mid-Columbia River NWR Complex

This past summer, the refuges of the Mid-Columbia River NWR Complex (<https://www.fws.gov/mcriver/>) joined a first-of-its-kind survey to attempt to monitor bats across North America. This project responds to the need for a large-scale monitoring program, with goals of providing a baseline on bat distribution across North America, documenting impacts of stressors on bats, and identifying priority species for conservation actions. The North American Bat Monitoring Program (NABat) is a multiagency, international effort to coordinate bat monitoring. The purpose of NABat is “to create a continent-wide program to monitor bats at local to

rangewide scales that will provide reliable data to promote effective conservation decision making and the long-term viability of bat populations across the continent” (Loeb et al. 2015). NABat is developing and will maintain a long-term program to monitor bat distributions and will provide regular analysis and reporting on status and trends. A data management system (Bat Population Database) will be an integral part of the program.

NABat is envisioned as a long-term monitoring program and USFWS has agreed to a 3-year pilot study for the program on mainland NWRs in the Pacific Region (Oregon, Washington, and Idaho.) The Region 1 NABat pilot is one of several that provide baseline data and help refine the survey protocols and data management systems that are currently under development. In Washington, sampled NWRs include Columbia, Hanford Reach National Monument, Little Pend Oreille, McNary, Umatilla, Willapa, and Ridgefield. The NABat sampling frame and spatially balanced order were used to select sample units on these NWRs. Pettersson D500x detectors were placed at acoustically appropriate points in each sampling unit, following NABat protocols. Data will be summarized and provided to the Bat Population Database for analysis.

Response of Wetlands to Removal of Invasive Species

Heidi Newsome and Kelsey Lotz, Mid-Columbia NWR Complex

McNary NWR in Burbank is one of eight NWRs in the Mid-Columbia River Complex. These refuges are located along the main stem and tributaries of the Columbia River, and they provide abundant wetland and riparian habitat for various migratory and resident wildlife species within the Columbia River Basin. The quality of these wetlands as wildlife habitat can be affected by the presence of non-native fish, specifically common carp (*Cyprinus carpio*) and bullheads (*Ameiurus* spp.). Rough fish (i.e., species considered undesirable as a food or sport fish and often viewed as competitors of more desirable fishes) are thought to be a significant threat to the function of these wetland ecosystems due to their impacts on submerged aquatic vegetation (SAV) through uprooting and consuming plants and increasing water turbidity. SAV is an important food source for migratory waterfowl and serves as a productive wetland component for micro and macro invertebrates. Sampling conducted during the summer of 2012 found that three of the four pools of the McNary sloughs were effectively denuded of any SAV and all four pools showed high turbidity. In the fall of 2013 and winter 2014, all four

pools were treated with rotenone, a piscicide used to control fish.



Common carp exhibiting symptoms of rotenone treatment

Refuge staff have been monitoring the post-management recovery of the wetland sloughs through sampling of SAV, zooplankton and aquatic and benthic macro invertebrates, as well as analyzing waterfowl use trends pre- and post-rotenone treatments. Within one year post treatment, our surveys indicated a significant increase in both abundance and diversity of SAV species in all treated sloughs. Waterfowl use trends showed a dramatic change post-rotenone treatment. The cumulative number of ducks observed during weekly bird surveys nearly doubled in just one year. There were more than ten times as many diving ducks observed in 2014/15 compared to 2013/14 and an even larger increase over all four winters. The cumulative total of swans, which also feed on SAV, has increased from 70 to 1,828 birds in four years. The invertebrate analysis is the next step in this project, we hope to be able to present the findings at the upcoming TWS meeting in 2017!

BE A MEMBER!

For more information the Chapter, including membership forms, please visit our [website](#). If you have questions regarding your membership status, please contact Andrea Lyons at 509-630-0673 or andrealyns3@gmail.com. She will be happy to help you out. If you're a member at the National level, you can also check your chapter membership status by logging in at <https://wildlife.secure.force.com/customlogin>. Remember: chapter membership dues are only \$10 per year (\$5 if you are a student). It's an inexpensive way to stay connected and support wildlife!

The Wildlife Society—Washington Chapter

BOARD

President

Danielle Munzing
Department of Natural Resources
509-925-0953
WATWS.President@gmail.com

President-Elect

Katy Stuart
206-953-2716
katyshipe@gmail.com

Past President

Tony Fuchs
Puget Sound Energy
425-462-3553
tony.fuchs@pse.com

Secretary

Andrea Lyons
WA Conservation Science Institute
509-630-0673
WATWS.Secretary@gmail.com

Treasurer

Kathy Brodhead
Bureau of Land Management
brodkat@gmail.com

Board Position #1

Daniel Ravenel
Quinault Indian Nation
360-276-8215 x546
dravenel@quinault.org

Board Position #2

Sara Hansen
WDFW
509-892-1001 x 310
Sara.Hansen@dfw.wa.gov

Board Position #3

Ken Bevis
Washington Department of Natural
Resources
360-489-4802
Ken.Bevis@dnr.wa.gov

Board Position #4

Ron Tressler
Seattle City Light
206-386-4506
Ron.Tressler@seattle.gov

Representative to NW Section

A.J. Kroll
Weyerhaeuser Company
253-924-6580
aj.kroll@weyerhaeuser.com

Northwest Section Representative to TWS Council

Harriet Allen
360-866-8754
hallen2009@comcast.net

Student Chapters Liaison

Vacant

Newsletter Editor Mike Hall

Parametrix
206-394-3673
mhall@parametrix.com

Social Media Manager/ Website Administrator

Suzie Rizor
Blue Leaf Environmental
509-210-7424
srizor@blueleafenviro.com

REGIONAL REPRESENTATIVES

Northeast – Annemarie Prince
WDFW
(509) 684-2362 x20
Annemarie.Prince@dfw.wa.gov

Northwest – Steve Hall
Point Consulting
206-441-1882
shall@pointconsulting.us

Olympic Peninsula – Betsy Howell
U.S. Forest Service
360-956-2292
blhowell@fs.fed.us

Southeast – Jason Fidorra
WDFW
509-545-2201
Jason.Fidorra@dfw.wa.gov

Southwest – William Ritchie
USFWS Willapa NWR
360-484-3482
william_ritchie@fws.gov

COMMITTEES

Audit

Elizabeth Rodrick
360-866-9797
erodrick@comcast.net

Awards

Bill Vogel
360-753-4367
william_o_vogel@yahoo.com

Conservation Review

Katy Stuart
206-953-2716
katyshipe@gmail.com

Education and Information

Madonna Luers
509-892-7853
Madonna.Luers@dfw.wa.gov

Grants

Tony Fuchs
425-462-3553
tony.fuchs@pse.com

Nominations and Elections

Kristen Phillips
360-276-8211
kphillips@quinault.org

Membership

Vacant

Program

Bill Vogel and Jeff Kozma
william_o_vogel@yahoo.com
kozj@yakamafish-nsn.gov

Resolutions and Public Statements

Leon Fisher
360-299-2178
Swsfisher@aol.com

Scholarship

John Grettenberger
360-923-1424
grettenbergerj@gmail.com

Workshops

Bill Vogel
360-753-4367
william_o_vogel@yahoo.com