

# Wildlife Program – Bi-weekly Report

March 16 to March 31, 2019

## **HUNTER EDUCATION**

### **1) Managing Wildlife Populations**

Nothing for this reporting period.

### **2) Providing Recreation Opportunities**

**Hunter Education Deferrals:** The Hunter Education Division administrative assistant is the point person responsible for processing and approving the once in a lifetime one year deferrals from hunter education certification ([WAC 220-412-020](#)). The deferral program allows a new hunter into the field as long as they are accompanied by a qualified, experienced hunter. The deferral requires that the new hunter be at least 10 years old and may not have failed a hunter education course within the last 12 months. Requirements are also set for the accompanying hunter to ensure that safety remains paramount. In March, the administrative assistant processed 49 deferrals, 40 of which were for new hunters between the ages of 10 and 15. The idea is that after a season hunting on a deferral (try it before you buy it) the new hunter will complete hunter education and join the hunting community.

**Law Enforcement Officer and Military Exemptions:** The Hunter Education Division administrative assistant administers the exemption program where qualifying active and retired peace officers and military personnel may be exempt from the field skills portion of any hunter education course that is completed online. Forty-five military and two peace officer exemptions were processed in March.

**ADA Assistance:** Hunter Education Coordinator Dazey worked with the parents of a young hunter education student and the teaching team of the class that he was signed up to attend. The young student had requested an accommodation. After contacting the young student's parent and advising her of the class structure and format, it appears the student will do just fine. His need is for more time to accommodate any writing that may be necessary in the class. The Hunter Education Division, as well as the over 1,000 volunteer instructors, work hard at ensuring every student has any necessary accommodations and the same opportunity to be successful as otherwise abled students. The student must still meet the cognitive requirements of the class but should not be excluded because of mobility, difficulty reading, or other special need.

### **3) Providing Conflict Prevention and Education**

**Master Hunters for Volunteer Projects:** Region 5 Hunter Education Volunteer Coordinator Elliott sent out emails to master hunters for two local projects seeking volunteers. There was a good response to both requests.

Wahkiakum School District in Cathlamet needed tree trimming and vegetation clearing, as well as volunteers who have equipment for the project. The school has had recent cougar sightings and needed to eliminate potential cover for predators.

A landowner in Winlock needed assistance installing 8,000 bud cap protectors on his trees to prevent deer and elk from grazing on the tops of new seedlings.

#### **4) Conserving Natural Landscapes**

Nothing for this reporting period.

#### **5) Providing Education and Outreach**

**Upland Bird Clinic and Mentored Pheasant Hunt:** Richland Rod and Gun, Ringgold Pheasant Forever, Limits Game Farm, and the WDFW collaborated to hold a pheasant clinic on March 30. The weather on Saturday was perfect for the 21 participants who showed up out of the 32 who were registered for the event. WDFW's Bob Oke Game Farm provided pheasants to be released. Limits Game Farm, Pheasants Forever, and Richland Rod and Gun Club members provided the mentors and other volunteers to run the clinic. WDFW Region 3 Hunter Education Field Coordinator Garcia presented a class on upland bird hunting and how to find places to hunt, and WDFW Sergeant Fulton spoke to the group about the role of WDFW Enforcement Program and how they protect our resources.

Participants were divided into two groups, half of them showed up around 9:00 a.m. at the Connell Gun Club to receive instruction on wing shooting and practice on the trap range. They then met at Limits Game Farm where they were assigned to their mentors and led to the hunting area.

The second group then met at the gun club, followed by both groups meeting up for the clinic portion and lunch. The second group then left for their hunt. The participants were very successful in harvesting at least one bird, and they all had a great time!





**Hunter Education Instructor Support:** The Hunter Education Division’s administrative assistant prepared hunter education instructor packets for fourteen newly certified instructors. These packets contain vital information for the new instructor as well as their instructor credentials. The hunter education administrative assistant maintains the instructor database for the 1,035 certified instructors statewide. In March alone these 1,035 instructors donated over 2,400 hours of volunteer service teaching new hunters and ensuring our hunting heritage is carried forward to the next generation of safe, ethical, and legal hunters.

Region 5 Hunter Education Coordinator Elliott traveled to a traditional class in Goldendale. While she was there, she collected three new instructor applications and spoke to a person who is interested in the Master Hunter Permit Program. On the way to the Goldendale class, she was also able to meet up and deliver supplies to an instructor team in White Salmon.

Region 5 Coordinator Elliott is working with a new instructor to get a class set up to accommodate a student with ADA needs. The class will be held at a local gun range in Camas that has not hosted hunter education classes before. The range has invited the instructor to begin holding classes there regularly, and after this initial class is complete, the instructor, coordinator, and management from the range will meet to develop a long term plan.

Region 6 Coordinator Montgomery held a pre-service training in Sumner for new instructors. Five registered and three of them attended. A little disappointing, but we did get three new instructors certified and working with hunter education teams.

Region 6 Coordinator Montgomery attended hunter education classes in Bremerton, Shelton, Tacoma, and Sequim, conducting evaluations and delivering supplies.

**Washington State Trappers Association (WSTA) Winter Rendezvous:** Hunter Education Program Specialist Kris Thorson attended the WSTA winter rendezvous at the Thurston County Fairgrounds on March 30. He answered questions on trapper education along with some general trapping questions. The rendezvous also offered seminars on different trapping techniques and demonstrations. WSTA President Bruce Vandervort demonstrated skinning and fleshing a river otter he trapped this season. In addition, this was a great opportunity to discuss a possible change to the trapper education cards with the trapper education instructors in attendance. All of the instructors provided great feedback to Program Specialist Thorson and he will incorporate their suggestions.



**Joey Dettrich Foundation:** Hunter Education Coordinator Dazey visited a hunter education class sponsored by the Joey Dettrich Baseball Foundation. Joey Dettrich was a promising young baseball player from Arlington who was drafted into the Tampa Bay Rays Baseball organization, fulfilling a life goal. Tragically, Joey was killed in an auto accident in 2013. The foundation was established in Joey's name to assist promising young athletes from the greater Arlington area to be able to advance to the next level in their sport. Joey's love of the outdoors and hunting has led the foundation to sponsor one hunter education class each year. Joey's father, Bill Johnson, graciously makes the classroom available at his facility and provides lunches both days for the 31 students registered. The hunter education teaching team provides the instruction both days. The class is conducted well and the support from the foundation is much appreciated.

**PLU Outreach:** Hunter Education Field Coordinator Dazey presented to a group of Chinese exchange students studying at Pacific Lutheran University (PLU) in Tacoma. The students were in the U.S. studying business and had previously visited several large businesses in the Puget Sound area. Dazey's presentation covered the mission and composition of WDFW as well as the economic return to the state from hunting, fishing, and outdoor activities on our lands. Also covered were the jobs performed by our 1,900 dedicated employees every day, including endangered species protection and recovery, habitat protection, managing wildlife, fishing, and the administrative duties needed to make it all work. The presentation and tour of our Region 4 office was very well received. After the visit to the regional office, each student submitted a report with pictures detailing what they came away with. Other than one report referring to Dazey as "the old man" the reports were very insightful and show that the students had learned a lot and came away with a better understanding of the importance of WDFW and the job that we do.



*Dazey presenting to PLU business students from China on economic return to Washington*



*The PLU students found the tour of the Region 4 office very interesting, especially the taxidermy*



*The visit wasn't complete without a picture of students in front of the WDFW Region 4 sign*



*Following the visit the day was capped off by a meal of traditional Chinese dishes at a local buffet*

**Coordinator Visit to Hunter Education Class:** Hunter Education Coordinator Dazey traveled to Bellingham Gun Club to visit and evaluate the team that was teaching there. This new venue has requested to support additional classes in the future and will be a good addition in Whatcom

County. The team that taught there was composed of instructors who were from other teaching teams. Dazey was able to receive one new instructor application to start the process of building a teaching team to take over the teaching at the Bellingham Gun Club. Dazey also was able to deliver ammunition and supplies to one of the other teams that teaches in the county. This proved to be a very productive trip.



*Students learning to be able to select the correct ammunition for firearms*



*Instructor Eason presenting to the class*



*When receiving a firearm from someone, first check to be sure the action is open and unloaded*



*Students learning about safe zones of fire.*

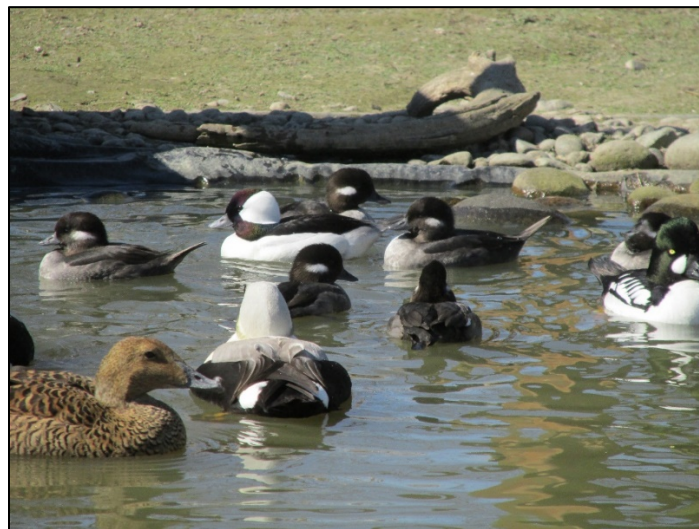
**Sequim High School Career Day:** Hunter Education Field Coordinator Montgomery attended a career day at Sequim High School, where 600 students came through. Students were engaging, and many were surprised that WDFW did not just employ biologists and enforcement officers.



**Washington Ornamental Game Bird Breeders:** Hunter Education and Volunteer Coordinator Dazey attended a meeting of the Washington Ornamental Game Bird Breeders on Fir Island at the breeding facility of one of their members. The group was able to get a demonstration of the use of falcons for bird abatement used for industries and agriculture having conflict issues with starlings, pigeons, and other birds. Brad Felger of Airstrike Bird Control <http://airstrikebirdcontrol.com/index.html> has participated in National Hunting and Fishing Day for the department in years past and always manages to put on a very informative presentation. The falcons are used to haze the birds from areas where they have become a problem damaging crops and creating health hazards. The club tour also included a tour of a breeding facility where threatened and endangered waterfowl are captive bred for release into their native habitat.



*Airstrike Bird Control CEO Brad Felger explains his falcon to the group before giving a flying demonstration*



*Some of the facility on Fir Island*



*Brant displaying the ID tags on their legs. These tags are visible from a distance and identify where the birds were banded*

### **Bighorn Outdoor Show**

Region 1 Hunter Education Coordinator Whorton participated in the Inland Empire Wildlife Council's Bighorn Show, where he talked and made numerous contacts with the public regarding hunter education programs, as well as contacts with the Inland Empire Wildlife Council's hunter education folks.



**National Hunting and Fishing Day (NHFD):** Region 6 Hunter Education Field Coordinator Montgomery spent time working on the [National Hunting and Fishing Day event](#). He met with several of our sponsors/partners:

- Scott Vanderway, Director of 4-H Adventure Education to explain the NHFD history and how 4-H could participate. Received a call the next day from the 4-H Youth Development State Shooting Sports, and discussed the event and activities, and will be meeting later to discuss youth shooting and hunting opportunities.
- Chris Towe, with the Environmental Education Program for Pierce Conservation District, discussed the NHFD project, as well as volunteer projects in the county.
- Hunter education instructors from Tacoma Sportsmen's Club discussed NHFD and what we need from them for the day. They will be the range safety officers for the event in September.



## **6) Conducting Business Operations and Policy**

Region 1 Hunter Education Coordinator Whorton spent considerable time with the Office of Risk Management (ORM) trying to help the City of Newport understand the standard certificates of liability that risk management issues cover any concerns the City of Newport had with using their facilities for hunter education classes.

## **7) Other**

Nothing for this reporting period.

## **DIVERSITY DIVISION**

### ***HERE'S WHAT WE'VE BEEN UP TO:***

#### **1) Managing Wildlife Populations**

**White-nose Syndrome/Bats:** WDFW Biologist Tobin collected 10 bat carcasses from state biologists, partners, and the public for white-nose syndrome (WNS) testing. She will screen each bat for WNS clinical signs (e.g., wing damage, orange fluoresce under UV light) and will collect a combined wing/muzzle swab from each. Samples will be sent to the University of California Davis for diagnostics.

**Sharp-tailed Grouse:** Biologists Stinson and Sato, Research Scientist Schroeder, and Region 1 and 2 staff members finalized planning for sharp-tailed captures in British Columbia, with Colville Confed Tribes wildlife personnel. The birds will be released on the Scotch Creek Wildlife Area and in Tunk Valley.

**Oregon Vesper Sparrow:** Biologist Stinson worked on revisions to a status report for the Oregon vesper sparrow, a west of the Cascades declining subspecies of the widespread grassland species.

**Washington Ground Squirrel:** Wildlife Biologist Hayes worked on coordination of surveys for Washington ground squirrel for the next biennium. The focus of surveys will be to inventory potential suitable habitat and detect new colonies in Chelan, Douglas, Grant, Adams, and Franklin counties.

**Townsend Ground Squirrel:** Wildlife Biologist Hayes worked on coordination of surveys for Townsend ground squirrel for the next biennium. The focus of surveys will be to inventory potential suitable habitat and detect new colonies in Benton, Yakima, Kittitas, and Klickitat counties.

**Oregon Spotted Frog Inventory and Monitoring in Washington:** Oregon spotted frogs are breeding in all five counties where they occur in Washington. Breeding activity started in Thurston County in early March, was followed by Whatcom and Skagit counties, and the first

Oregon spotted frog egg masses were reported from Klickitat County the last week of March. Breeding was delayed this year because of the cold snowy conditions in February.

Biologist Hallock, who has been monitoring the earliest breeding site in the state, found the Oregon spotted frog egg masses starting to hatch on March 27. When Oregon spotted frog egg masses first hatch, the tadpoles are wiggly but fairly immobile. All the tadpoles in a communal cluster “melt” into the middle of the jelly and form a dark wiggly mass. Within a week, the tadpoles start to swim and disperse. Water levels are very low this year, but the tadpoles appear to have sufficient water to disperse at this site. Lucky for the tadpoles, rains are predicted for the first week in April.

At another location in Thurston County, Biologists Hallock and Holman were kayaking on the Black River on Saturday, March 16 for fun when they heard Oregon spotted frog males calling at a new site. Biologist Hallock followed up the next week, along with Nisqually Refuge Biologist Munes and USFWS Biologist Waterstrat, and found 83 Oregon spotted frog egg masses at this new site. Oregon spotted frogs are listed as federally threatened and state endangered.



*Newly hatching Oregon spotted frog tadpoles “melt” together within the jelly of a communal egg mass cluster*

**Short-eared Owl Surveys:** Natural Resource Scientist Buchanan continued coordination of the Western Asio flammeus Landscape Survey (WafLS). The survey was scheduled to begin in early March, but the survey window was pushed back three weeks due to the substantial amount of late winter snow in eastern Washington. The survey has now begun and over 40 volunteers in our state will conduct surveys at 50 sites. This is the second year of a three-year survey that includes surveys in California, Idaho, Oregon, Montana, Nevada, Utah, and Wyoming.

**Canada Lynx:** Biologists Jeff Lewis and Gretchen Blatz conducted an analysis of the loss and fragmentation of lynx habitat in the small portion of their historical range in Washington where they still exist (northwestern Okanogan County). This analysis was conducted to provide new data to the USFWS, which recently (in 2018) proposed to delist the lynx in the lower 48 states. Lewis and Blatz used an existing habitat model (Lyons et al. 2016) and fire/burn severity data (from USDA and USDI) to show the spatial and temporal loss of lynx habitat within this remaining occupied area and showed that over 35 percent of remaining habitat was lost in the last 19 years (Figure 1). This habitat loss heavily impacted an important remaining occupied landscape (Black Pine Basin on the Okanogan-Wenatchee National Forest) and the loss of habitat is arranged in such a way that it appears to separate northwestern Okanogan County into two smaller occupied areas. They also identified a number of recent fires in southern British Columbia that are adjacent to the occupied area in northwestern Okanogan County. While lynx are a federally threatened species and were recently up listed to endangered status in Washington, the recent and expanded loss of habitat as a result of fires puts Washington's lynx population at greater risk to extirpation in the near future (i.e., next 5 to 10 years). Unfortunately, the recent incidence of large, intense wildfires in lynx occupied areas indicates that each fire season presents significant threat to the remaining lynx population, and the incidence of these fires is expected to increase as a result of climate change. A multiagency team is working on several actions that could provide protection to our remaining lynx and lynx habitat, but it is currently unclear if those actions would have a significant positive effect, if implemented. The findings of this analysis were presented at the recent Washington Chapter meeting of the The Wildlife Society, and in a letter to the USFWS with regard to their request for new information on lynx status in Washington.

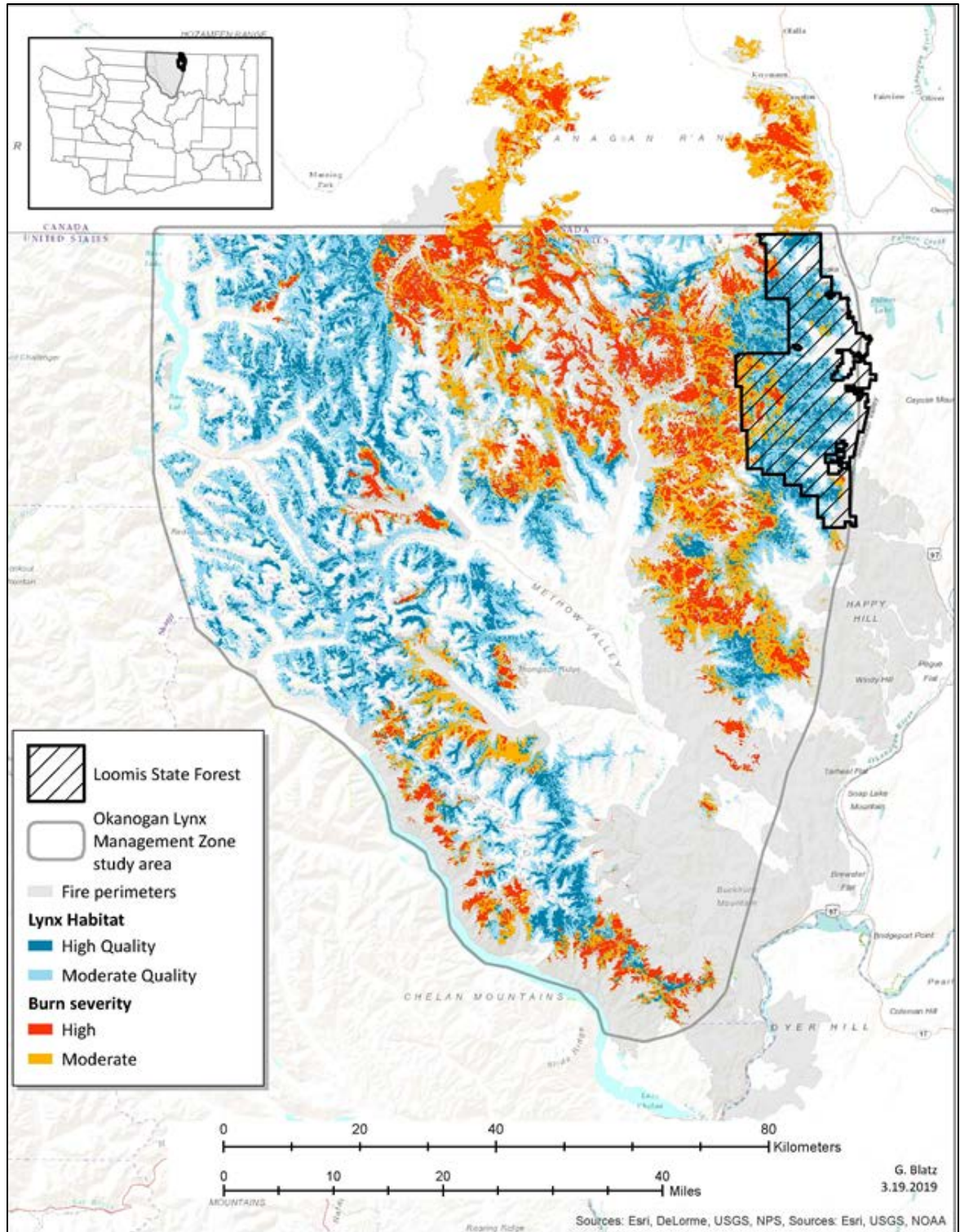


Figure 1. The distribution of high and moderate burn severity areas (MTBS 2019, BAER 2019) for burns that occurred within lynx habitat in the Okanogan LMZ (Lyons et al. 2016) since 1990. The large majority (around 98 percent) of this habitat loss occurred after 2000. Perimeter and severity data are also shown (no habitat data) for fires in the transboundary area of British Columbia (within 25 km of the Okanogan LMZ) in 2017 and 2018.

**2) Providing Recreation Opportunities**

Nothing for this reporting period.

**3) Providing Conflict Prevention and Education**

Nothing for this reporting period.

**4) Conserving Natural Landscapes**

Nothing for this reporting period.

**5) Providing Education and Outreach**

**White-nose Syndrome/Bats:** WDFW Biologist Tobin attended the Invasive Species and Exotic Pest Workshop in Bellingham on March 29 to present information on white-nose syndrome and on WDFW response to discovering this deadly bat disease in 2016 in Washington. The audience was a mix of state, federal and tribal agencies, non-governmental organizations and stakeholders.

**6) Conducting Business Operations and Policy**

Nothing for this reporting period.

**7) Other**

Nothing for this reporting period.

**LANDS DIVISION**

***HERE'S WHAT WE'VE BEEN UP TO:***

**1) Managing Wildlife Populations**

Nothing for this reporting period.

**2) Providing Recreation Opportunities**

Nothing for this reporting period.

**3) Providing Conflict Prevention and Education**

Nothing for this reporting period.

#### **4) Conserving Natural Landscapes**

**Annual Firefighter Refresher Training and Pack Test:** With two annual firefighter refreshers completed, WDFW completed a third training session on Wednesday, March 27 in Wenatchee. Training was completed by 28 students from State Parks and WDFW. Students review topics covering fire line safety, fire behavior, weather, rules, guild lines, and fire shelter review and deployment. The annual firefighter refresher is a requirement to maintain current qualifications and a chance to receive new information. The refresher also includes a physical fitness test requiring folks to take a timed walking test with a weighted vest.

**Interagency Pre-season Prescribed Fire Meeting:** Prescribed fire burners from across Washington met in March in Cle Elum to discuss how the 2018 burn season went. The meeting started with a short presentation from the new DNR state forester about the DNR's intent to start prescribed fire operations in the near future. The smoke permitting process and the new smoke management plan were also covered by DNR. Discussions included how to improve communications, smoke approvals, notifications for burn approvals, and sharing resources.

**2019 Spring Prescribe Burn Season:** WDFW is planning units for Rx fire implementation on units of the Sinlahekin, Sherman Creek, Rustlers Gulch, Colockum, L.T. Murray, Oak Creek, and Grouse Flats wildlife areas. Over 3000 acres have been identified to burn this season and into the fall season. Weather will be the biggest driver on how much will be accomplished.

**Restoration Manuscript Reviewed:** Vegetation Ecologist Merg reviewed a manuscript about a prairie restoration written for the journal of the Society for Ecological Restoration, *Restoration Ecology*. Merg also explored published literature addressing suppression of perennial grasses that were important in the study, especially those in the genus *Phalaris*, which includes, Reed canarygrass - a scourge of Pacific Northwest wetlands. Merg learned that several species in this genus contain dimethyltryptamine, a toxic alkaloid that can cause livestock that ingest it to stagger.

**L.T. Murray Wildlife Area Complex:** Range Ecologist Burnham attended the 2019-planning meeting with Manager Babik of the Wild Horse Coordinated Resource Management (CRM), which coordinates grazing on lands managed by DNR, Puget Sound Energy, and WDFW. The CRM group agreed on a grazing rotation and discussed fencing, restoration, and water access. Burnham also contacted Manager Babik, district biologists, and regional management regarding modeled potential of domestic, bighorn sheep interaction in the context of a grazing operation and the different considerations involved in minimizing actual risk of encounters with bighorns.

#### **5) Providing Education and Outreach**

Nothing for this reporting period.



## **6) Conducting Business Operations and Policy**

**JLARC Report – Detailing Resources Needed to Report Land Stewardship Needs:** Lands Section Managers Dahmer and Sandberg, working with Washington Department of Natural Resources and State Parks representatives, completed the final report and plan characterizing proposed actions and estimated costs needed to determine and report land stewardship need. The report included needs associated with management of natural resources, recreation and infrastructure resources, and cultural resources. Steps would include determining current conditions, desired future conditions, and estimates of how to achieve them. The report covers 1,000,000 acres of WDFW lands in 212 wildlife area units plus 600 water access sites; 163,000 acres of DNR natural area preserves and natural resource conservation areas in 94 sites; and 138,000 acres of State Parks lands in 124 developed state parks. The report was submitted to the Joint Legislative Audit and Review Committee (JLARC) with cover letters signed by agency heads.

## **7) Other**

Nothing for this reporting period.

## **SCIENCE DIVISION**

### **1) Managing Wildlife Populations**

**Predator-Prey Project – Ungulate Research:** The Washington Predator-Prey Project concluded white-tailed deer captures for the winter of 2018-2019 and deployed 89 radio-collars (66 adult females, 23 juveniles) distributed throughout Game Management Units (GMUs) 117 and 121 in Stevens and Pend Oreille counties. WDFW Ungulate Research Scientist Melia DeVivo and University of Washington graduate student Taylor Ganz led this capture and collaring effort. Researchers will monitor collared deer to collect information on survival, reproduction, recruitment, habitat use, movement patterns, and causes of mortality. These data will build on our understanding of white-tailed deer ecology and population dynamics in northeastern Washington.

**Predator-Prey Project – Cougar Research:** Research Scientist Kertson completed capture efforts in GMUs 117 and 121 in support of cougar research as part of the Predator-Prey Project. During this period, Research Scientist Kertson and his team managed to recapture an adult male cougar whose collar was not operating correctly (Figure 1). All told, capture efforts yielded 11 new cats (adult female: n = 2; adult male: n = 5; subadult female: n = 1; subadult male: n = 3) in addition to four other cougars that were recaptured to replace their bad collars. This winter's captures bring the total number of cougars marked in the northeast study area of the Predator-Prey Project to 50 with 29 of these being adults and subadults outfitted with a GPS radio collar. Currently, there are 23 active collars on adults and subadults in the northeast study area. While intensive capture efforts are done for the season, Research Scientist Kertson hopes to continue putting out collars for the remainder of the year as opportunities arise and collar resources allow.



*Figure 1: NC118M in the tree prior to being darted during his successful recapture*

**Finalized Big Game Harvest Estimates:** Biometrician Keren and Data Analyst Whelan worked through the final run of the Big Game Harvest Estimates and associated updates to the HEIDI framework. After applying fixes to the codebase to address new WILD system bugs we completed the analysis. Whelan also developed new scripts to batch-build PDF reports and to populate the new Harvest database. Whelan and Keren provided a new suite of products, Delta Tables, to help staff members review the difference between the preliminary run and the final run. These Excel files show which stats changed and by how much, which also helps us quality check our results and ensure that the changes are expected.

**West Cascades Cougar Project:** Research Scientist Kertson and his collaborators at the University of Washington recently published a new manuscript in Ecosphere titled, “Effects of urbanization on cougar foraging ecology along the wildland-urban gradient of western Washington.” The paper is freely available to all at:

<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.2605>

**Taylor’s checkerspot butterfly surveys in Clallam County:** Research Scientist Olson conducted both classroom and field training for Wildlife Biologists McMillan, Avent, and Murphie, and Habitat Biologist Bell, who will be using distance-based point transect sampling for Taylor’s checkerspots at two sites in Clallam County later this spring. Classroom training consisted of background on distance sampling analytical methods, a review of survey-specific protocols, and evaluation of the 2018 survey results. Field training included on-the-ground guidance on implementing survey protocols, increasing the number of survey points, and collecting pre-survey data. The timing of training seemed to work out well as Taylor’s checkerspot larvae were seen on site; indicating pre-season preparations should be completed before most butterflies are flying.

**Wildlife Health:** Wildlife Health Technician Cole shipped deer samples to a Texas Tech University graduate student studying white-tailed deer genetics, and elk and moose samples to a University of Tennessee graduate student studying meningeal worm in moose and other cervids.

Veterinarian Haman and Biologists Butler and Hallock wrote a proposal for the USFWS Recovery Grant Program. This proposal is to investigate the potential association between captivity and shell disease in western pond turtles. If funded, this grant will advance our understanding of the epidemiology of shell disease in western pond turtles in Washington.

**Preparing for Sharp-tailed Grouse Importation:** Technician Cole put together capture supply kits for sharp-tailed grouse captures in early April. Veterinarians Mansfield and Haman had a call with the lead biologists to ensure all planning is in place, including permits, shipment of samples to the laboratory for processing, and safe transport of captured birds.

**Albatross Conservation:** On behalf of the agency, Senior Research Scientist Pearson attended the Alaska Groundfish and Halibut Seabird Working Group on March 27 and 28 in Juneau, Alaska. This group was established to serve as an advisory group to National Oceanic and Atmospheric Administration (NOAA) Fisheries and the U.S. Fish and Wildlife Service (USFWS) for the purpose of reviewing available information for mitigating effects of the groundfish and halibut fisheries on short-tailed albatross and other seabirds. The group covered bycatch estimates by species and fishery/gear type. Technological solutions have dramatically reduced seabird bycatch and that of albatross in particular. However, work recently published in Conservation Biology suggest that a small number of vessels have a large effect on seabird bycatch rates. The group would like to work with the industry to explore methods to understand why this effect occurs and if there are approaches to reduce the bycatch rates by these few boats. The working group is also interested in exploring leading indicators (e.g., sea ice extent, sea surface temperature) as a tool for predicting in-season bycatch risk, and ultimately, to alert the fleet to take special precautions in those years to reduce bycatch.

## **2) Providing Recreation Opportunities**

Nothing for this reporting period.

## **3) Providing Conflict Prevention and Education**

Nothing for this reporting period.

## **4) Conserving Natural Landscapes**

Nothing for this reporting period.

## **5) Providing Education and Outreach**

**In-person GIS/Mobile Data Training for Regions 2 and 3 in Ephrata:** IT Specialist Simper presented a daylong in-person GIS/mobile data training session for ten region 2 and 3 WDFW

staff members at the Ephrata field office. The training focused on details of using the Survey123 mobile data collection software and using ArcGIS Online to view and edit submitted data.

## **6) Conducting Business Operations and Policy**

Nothing for this reporting period

## **7) Other**

Veterinarian Haman travelled to Clackamas, OR to meet with Oregon Department of Fish and Wildlife (ODFW) Biologist Yee and Wildlife Veterinarian Burco to review ongoing projects investigating shell disease in western pond turtles. The purpose of the meeting was to train ODFW staff on the computed tomography (CT) scan analyses and assessments to determine severity and extent of shell disease in western pond turtles in Washington. This is, in part, in fulfillment of obligations under the Competitive State Wildlife Grant, which is a USFWS grant awarded to WDFW, ODFW, and California Department Fish and Wildlife.

## **GAME DIVISION**

No report submitted this period.

## **REGION 1**

### **1) Managing Wildlife Populations**

**District 1 Elk Surveys:** Wildlife Biologists Prince and Turnock completed aerial elk surveys in District 1. Because District 1 is so heavily forested, surveys are conducted using elk wearing radio collars as part of the Predator-Prey Project. The collared elk are located using a helicopter and the associated group of elk are counted and classified. The ratios are currently being calculated.



*Group of elk observed during District 1 elk surveys*

**U.S. Fish and Wildlife Services Bear Handling Workshop:** Wildlife Biologists Prince and Bennett, along with Sergeant Tony Leonetti attended the 2019 Bear Handling Workshop in Missoula, MT. The workshop was attended by grizzly bear managers in WA, ID, and MT. Topics covered at the workshop included safe bear trapping and handling, and immobilization drugs commonly used for grizzly bears. In addition, bear managers shared field experiences and lessons learned with the group. The workshop was very educational and it was great to make contacts with bear managers in other states.

**Sage Grouse Lek Surveys:** District 2 Wildlife Biologist Atamian conducted a survey of the sage grouse lek in Lincoln County. Five males were observed displaying, three on the restored field lek site and two on the scabland outcrop lek site. No females were observed, however the males on both sites were very active and stuck to the leks even with disturbances of my presence and with the Wildlife Services flying low over the area after 8:00 a.m. searching for coyotes, the primary nest predator of sage grouse and sharp-tailed grouse in this area.



*Side view of male greater sage grouse in Lincoln County*



*Series of photos of male sage grouse displaying in Lincoln County*

**Predator-Prey Project Winter Fieldwork Wrap-up:** Wildlife Biologists Prince, Lowe, and Turnock finished out the winter fieldwork season led by Research Scientists DeVivo and Kertson. Through a combination of clover trapping, ground darting, and a new suspended net gun, crews were able to deploy collars on 66 does and 23 fawns throughout Game Management Units (GMUs) 117 and 121 from December through March. The collared deer will provide cause-specific mortality information over the next several years and inform WDFW about some of the drivers of the white-tailed deer population.



*Doe recovering from immobilization after capture for the Predator-Prey Project*

**Wildlife Area Emergency Closures:** Wildlife Area Manager Dice continued monitoring winter entry closures on the Chief Joseph and Asotin Creek wildlife areas. We are still finding carcasses from deer and elk that evidently starved to death. WDFW's closures end on April 1. Asotin County has requested keeping the winter gate shut on South Fork Road and Cougar Creek Road. They will take responsibility for the extended closure on those particular roads to protect their fragile roadbeds that are still too wet to be driven on.



*The 4-O Wildlife Area on March 23. Green up is slowly beginning*

**Wild Turkeys on the W.T. Wooten Wildlife Area:** The wild turkeys are ready for spring!



*Wild turkeys strutting at the W.T. Wooten headquarters*

**Lakes on the W.T. Wooten Wildlife Area:** Natural Resources Worker McKeirnan checked the lakes and adjusted as necessary. All of the lakes, except Watson Lake, are ice-free and were stocked with catchable rainbow trout by Hatchery staff members. McKeirnan cut down willows that were growing in the Beaver Lake outlet. He also cut down cottonwood saplings that were growing around the edge of the Watson Lake parking area. McKeirnan assisted Access Technician Heimgartner in setting posts at Spring Lake, Blue Lake, Rainbow Lake, and Deer Lake. The posts will be used to attach the fishing-line recycling tubes to that are going to be put out in the hopes of reducing the amount of fishing line left balled up around the lakes.

**Rainbow Lake on the W.T. Wooten Wildlife Area:** WDFW will be showcasing the Rainbow Lake project during Free Fishing Weekend in conjunction with the kid's fishing derby that is put on annually by U.S. Forest Service (USFS) and Asotin County Sportsmen. Assistant Wildlife Area Manager Dingman spoke with Fish Manager Trump about preparation actions and handouts that will be available for the weekend.

**Grizzly Bear Outreach and Education:** Wildlife Biologists Prince, Turnock, and Bennett teamed with Defenders of Wildlife and the Pend Oreille, Washington State University (WSU) Extension office to provide bear identification and bear spray training to a local sportsman's group and Boy Scout troop. After completion of the training and bear spray practice, participants received a free can of bear spray provided by Defenders of Wildlife. These trainings are a hit and are an important part of our outreach to stakeholders both living and recreating in grizzly bear country.

## **2) Providing Recreation Opportunities**

**Liberty Lake RCO Presentation:** Access Manager Dziekan presented his grant proposal for the redevelopment of the Liberty Lake Access Site to a review committee from Washington Recreation and Conservation Office (RCO), on March 26 in Olympia. Dziekan is asking for \$350,000. The proposal includes resurfacing and restriping the parking lot, extending the boarding float, and installing new Americans with Disabilities Act (ADA) compliant restrooms. RCO will be releasing the presentation scores in the next month, for all projects in the same category. Funding decisions are dependent on how projects rank and how much money the legislature provides for them.

**Blue Mountains Wildlife Area Complex Access Program:** Technician Greg Heimgartner along with Shane McKeirnan installed several monofilament-recycling tubes on the W.T. Wooten Wildlife Area. Greg also has been at the W.T. Wooten access sites multiple times this period servicing access sites and restrooms as fishing season ramps up. Greg has also spent time servicing sites at Heller Bar, the lower Grande Ronde, and the upper Grande Ronde, which includes sites near Boggans.

**Access Contracts:** Private Lands Biologist Thorne Hadley worked with WDFW Contracts Specialist Mielke on extending an access contract for an additional three years on 9,342 acres in Walla Walla County.

## **3) Providing Conflict Prevention and Education**

**Bull Elk:** Wildlife Conflict Specialist Rasley continues to monitor a large herd of 200 plus elk that came out of Oregon due to the deep snow in the foothills. With the weather finally warming up at the end of the week, most of the herd has moved to higher elevations and away from the problem haystacks.





*A few of the larger bulls*

**Elk Damage Haystack:** Wildlife Conflict Specialist Rasley met with a farmer regarding elk damage to his haystack. The farmer was able to plow a road into the “stack yard” and try to salvage some of the hay the elk had not damaged yet. While they were gone, delivering the hay the elk herd came back and got into the hay again on the same day. The elk ate a hole completely through the middle of a 1,200-pound bale of hay.



*Elk damage to haystack*



*Hole eaten through a 1,200-pound hay bale*

#### **4) Conserving Natural Areas**

**Boundary Fence Construction/Maintenance:** Technicians McGee and Meisner have worked all week together on building new fence on Joseph Creek to prevent the neighbor’s livestock from entering the wildfire area at funnel point and running rampant. Biologist Woodall retrieved material from one of the outlying shops and delivered to the job site. He spent the rest of the day assisting.



*Dave Meisner and Scott McGee building fence near Joseph Creek on the Chief Joseph Wildlife Area*

### **5) Providing Education and Outreach**

**Colton Schools Career Fair:** Private Lands Biologist Gaston hosted the WDFW booth for the Colton Career Fair. Private Lands Biologist Gaston gave a 20-minute presentation to about 20 students about wildlife career opportunities then gave away WDFW materials and information about wildlife careers at the booth.



*Private Lands Biologist Gaston hosting the WDFW booth at the Colton Schools Career Fair*

**Wolf 101 Presentation:** Supervisor McCanna and Wildlife Conflict Specialist Westerman presented a wolf 101 presentation to personnel at Fairchild Air Force Base. The presentation was also live on Fairchild's Facebook page.

**U.S. Forest Service (USFS) Contact:** Wildlife Conflict Specialist Wade was contacted by the USFS range manager regarding a wolf update, prior to their grazing lease meeting with producers. Wade worked with the USFS range manager to get her information regarding wolf activity in the Blue Mountains. Wade also provided her with a synopsis of last grazing seasons depredation activity. Wade will continue to work with the USFS and producers in the month leading up to grazing season.

**Be Bear Aware Presentations:** Wildlife Conflict Specialist Bennett presented information associated with grizzly and black bear in Pend Oreille and Stevens counties. Bear biology, identification, safety, and bear spray use was covered with more than 45 participants.

## **6) Conducting Business Operations and Policy**

**Annual Coordination Meetings:** Region 1 staff members met with representatives from the Colville National Forest to share information about on-going projects and new activities with each respective agency. This meeting provides valuable face time with biologists and managers that WDFW works with in managing fish and wildlife resources. In addition, WDFW personnel met with the Colville Confederated Tribes to coordinate efforts in the co-management of fish and wildlife in District 1 and District 6.

**Wolf Data Sharing Committee Conference Call:** Supervisor McCanna facilitated the new wolf data sharing committee conference call. The committee discussed the history of wolf data sharing in Washington, concerns of data sharing, how data sharing is currently being used, brainstormed a few ideas and set an in person committee meeting for later in March.

**Wolf Data Sharing Meeting:** Supervisor McCanna facilitated the first in person wolf data sharing meeting at the Region 1 office. WDFW personnel gave a demonstration on how to view the data, how to change the transparency of layers and what the data means. The committee came up with five different draft options on what the data would look like. Each committee member will be checking in with their respected groups and share what they learned at the next in person meeting.

**Snake River Local Working Group:** Private Lands Biologist Thorne Hadley attended and participated in the Natural Resources Conservation Service (NRCS) Snake River local working group, to identify resource concerns and prioritize those resources for funding opportunities.

**W.T. Wooten Wildlife Area Advisory Committee (WAAC) Meeting:** Assistant Wildlife Area Manager Dingman scheduled the annual W.T Wooten WAAC meeting for April 25. She reserved the meeting hall at the Last Resort Campground and mailed out letters to the WAAC members. She began working on the PowerPoint presentation for the meeting.

**Asotin Creek Wildlife Area and Facilities:** Biologist Woodall started trucks that have been in storage all winter at outlying shops. He took pictures and filed annual paperwork for our surplus Humvee that we use for weed control with Department of Enterprise Services (DES) for their inventory accounting purposes. He picked up Technician Stallcop who was working in the area with snow removal.



*Technician Stallcop removing snow from around the South Fork storage shed*

**Asotin Creek Wildlife Area maintenance issues:** Technician Wynn Stallcop spent time this period preparing equipment for spring work and began moving machinery to the Chief Joseph Wildlife Area. Wynn also has pretty much finished setting up his new motor pool vehicle. The flatbed, mobile radio, and new toolbox have been installed. His old truck will be used by Sara Ashiglar’s interns beginning in May. At the Clarkston shop, Dave Meisner and Scott McGee completed fabrication of our new equipment trailer. All that is needed now is paint and wiring.

## 7) Other

Nothing for this reporting period.

## **REGION 2**

### ***HERE’S WHAT WE’VE BEEN UP TO:***

#### 1) **Managing Wildlife Populations**

**Pygmy Rabbit Reintroduction Plans:** We had two critical objectives to complete before the 2019 breeding season: build two mobile breeding enclosures and then trap and translocate 20 to 30 wild adults from the Sagebrush Flat wild population into them. These were needed because our existing permanent breeding enclosures are no longer able to adequately support rabbits (site degradation, disease buildup) and the remaining enclosure population is too small (16 to 22 adults) and not productive enough to either rebuild numbers or support continued release efforts. The introduction of new breeding enclosure sites “fresh pasture” and wild rabbits would have rejuvenated productivity and reintroduction efforts.

In any normal winter, or any winter I have seen since 2008, this would not have been a problem to complete during March. However, this year we experienced a record snowfall for February that persisted longer than most. Snowdrifts limited our access to all field sites and deep snow prevented any building or trapping activities. Snowmelt began last week and the resulting run off has prevented or significantly complicated our access. All of this delayed our fieldwork, and now we are too far into the pygmy rabbit reproductive cycle to safely translocate females from the wild, as they will likely be in late stages of pregnancy or even given birth when trapping could occur.

Coordinator Gallie will convene a conference call with the Science Advisory Team to discuss alternative reintroduction plans for this year.



*March 18*



*March 21*



*March 28*

**Northern Leopard Frog:** The northern leopard frog recovery team met this week to coordinate budget, surveys, and habitat management for the species this year. The focus of the surveys will be on ponds where tadpoles have been observed in the past with the goal of finding as many egg masses as possible. Northern leopard frogs should emerge from their over-wintering burrows soon if they haven't already. The frogs start becoming active and looking for mates once the air and water temperatures reach about 50 degree Fahrenheit.

Biologist Grabowsky completed two preliminary surveys at Potholes and ordered most of the equipment needed for northern leopard frog breeding surveys. Several male Pacific chorus frogs were active and calling, but no northern leopard frog activity was detected. Within the next two to three weeks both chorus frogs and northern leopard frogs should begin laying eggs. With any luck, biologists will be able to find northern leopard frog egg masses and initiate the captive rearing program. For now, here's a photo of one of our more productive breeding ponds finally ice-free.



*Potholes Wildlife Area on March 28*

**Mount Hull Bighorn Sheep Herd Disease Monitoring:** Biologist Heinlen was able to obtain samples from four bighorn sheep (three rams and one ewe) that died from December through February. Samples were submitted to Washington Animal Disease Diagnostic Laboratory (WADDL) at Washington State University, which found all animals had the presence of the bacterium *Mycoplasma ovipneumoniae* (M. ovi). M. ovi is the bacterium that triggers pneumonia outbreaks in wild sheep herds. These results indicate that this disease outbreak has been occurring in the Mount Hull herd longer than first suspected, at least since December 2018.

**Wolf Monitoring:** Biologist Fitkin checked a remote camera deployed to detect possible wolf activity in the Upper Methow Watershed. No wolves were photographed over the last month, but other critters put in appearances.



*A river otter dashes across a winter trail separating pond and stream* – WDFW remote camera

**Okanogan County Sharp-tailed Grouse Lek Surveys:** Wildlife Area Manager Olson completed the first round of sharp-tailed grouse lek surveys on the Scotch Creek Unit. The Chesaw Unit lek is still snow covered and we will start surveys there next week. Lek sites are locations in grasslands where prairie grouse gather in the spring of the year for courtship behavior and mating. The sites are traditional which gives us the opportunity to monitor population levels by counting birds present each year. Two visits on each known lek site will be conducted each year. Olson visited four lek sites this week on the Scotch Creek Unit with mixed results. Two sites on the south side of the valley had zero birds present. However, two leks on the north side had 10 and 16 birds, most likely males present. The table below compares this year's counts with the past two years. Totals for 2019 are not yet complete.



*Male Sharp-tailed Grouse in full courtship display* - Photo by J. Olson

Name for lek complex	High count			1st count				
	2017	2018	2019	Date	Male	Female	Unknown	Total
Scotch Creek Unit - A	0	1	0	26-Mar			0	0
Scotch Creek Unit - B	16	7	0	28-Mar			0	0
Scotch Creek Unit - C	11	10	10	26-Mar			10	10
Scotch Creek Unit - D	12	12	16	27-Mar			16	16
Total	39	30	26		0	0	26	26

**Douglas Sage Grouse Surveys:** Private Lands Biologist Braaten assisted with grouse surveys in Douglas County. Access is still difficult as winter begins to give way to spring. Private Lands Biologist Braaten counted several leks and found a possible new sage grouse lek in the Fairview area.



*Road access in Douglas County late March 2019*



*Male Sage Grouse ready for spring* - Photo by Eric Braaten, WDFW

**Greater Sage Grouse:** Access conditions throughout the Waterville Plateau still remain challenging and many roads are still closed due to late season snowpack or snowmelt forming ponds. Biologist Comstock was only able to successfully visit one lek during the previous fortnight. Biologist Comstock contact Douglas County Road Maintenance to get status updates on expected road openings.





*Road to Mansfield lek* - Photo by Mike Schroeder

## 2) Providing Recreation Opportunities

**Bird Watching Opportunities:** This week with the warmer temperatures and melting snow, the bird activity has increased greatly around the basin. Specialist McPherson has witnessed many of our spring migrants making an appearance like Sandhill cranes, white-fronted geese, snow geese, tundra swans, long-billed curlews, and a great variety of ducks. Most of the birds have been seen in the Frenchman Hills area, wetlands associated with the Winchester Wasteway, and in the Gloyd Seeps Unit.



*Mallards, pintail, green-winged teal, ring-necked ducks, and lesser Scaup taking advantage of freshly opened water in cell two of Frenchman Regulated Access Area* - Photo by C. McPherson

**Mcloughlin Falls Unit Bridge:** Sinlahekin Wildlife Area Manager Wehmeyer, Maintenance Mechanic Boulger, Scotch Creek Assistant Manager Dupont and Natural Resource Technicians Sklaney and Medina replaced the bridge decking on the Mcloughlin Unit bridge. They removed the old 4x12s that were not attached to the steel I-beams and had become split. Many of the boards were missing larger portions creating holes within the deck. They attached new 4x12s to the I-beams and installed runner boards on the bridge deck. The administrative access to the Mcloughlin Unit will be much safer.



*Bridge Deck Replacement leading into the McLoughlin Falls Unit* – Photo by Wehmeyer

### 3) Providing Conflict Prevention and Education

**Investigation into Wildlife/Cattle Encounter:** Specialist Heilhecker along with Officer Fosse and Officer Trautman investigated a possible wolf depredation report. The owner last observed the six to eight month old Hereford bull uninjured the day before the owner left town for the weekend. When he arrived home, the bull was stuck in the snow with its legs uphill. With help from the owner, the bull was able to stand up and walk to the barn. A veterinarian treated the bull the following day. Injuries included damage to the tail and the left ear, and bite wounds on the muzzle. Injuries were not indicative of a predator and in all likelihood, one or more domestic dogs caused the injuries.

**Coordinated Resource Management Meetings in Okanogan County:** Okanogan Lands Operations Manager Haug met with various grazing permit holders to update them on new conflict guidelines to be included within future permits. Sinlahekin Wildlife Area Manager Wehmeyer also attended most the meetings as well as representatives from the Washington Department of Natural Resources and U.S. Forest Service. The meetings are facilitated by the Okanogan Conservation District. In addition to these new conflict measures, the group discussed this coming seasons grazing rotation and various action items needing addressed. These meetings are intended to coordinate management across jurisdictions and address issues or concerns as a group to betterment of each permitted area.

### 4) Conserving Natural Landscapes

**TD-1 Migrating Waterfowl Camera Survey:** Specialist McPherson and Assistant Manager Cole got camera trap setups mounted to poles and started for the spring migration survey at TD-1 project area. Six cameras traps were set in different wetland basins that contrast each other in the amount of moist soil management activities that occur. This will allow the wildlife area to analyze how spring migrants utilize wetland basins during migration and what moist soil activities birds are most attracted too. Furthermore, this will show when peak migration occurs letting Specialist McPherson to adjust drawdown practices to benefit waterfowl and shorebird species.



*Camera trap set at cell six* - Photo by C. McPherson

**TD-2 Floating Hen Houses:** Specialist McPherson went out to the TD-2 project and deployed five floating hen houses. This floating nest structure being used was originally designed by Delta Waterfowl. During their testing period it was found that floating hen houses were attractive nesting structures for a wide variety of duck species both diving and dabbling. TD-2 project area has historically had low duck production but with both elevated and floating hen houses available we hope to positively affect production.



*Floating hen houses ready for a hen* - Photo by C. McPherson

**Safe Harbor:** Biologist Hughes coordinated with USFWS to complete an amendment for a Safe Harbor Plan and permit application. The landowner is adding 2,599 acres to an existing Safe Harbor Agreement and requested additional management actions to be covered under their permit. The landowner is currently reviewing the amendment prior to signing. One thousand two hundred eighty acres that are being added to the agreement fall within the recovery emphasis area for pygmy rabbits, the remaining acres are just outside.

**Russian Olive Management:** Russian olive is found in Grant County more so than any other county in Washington, and the Columbia Basin Wildlife Area alone has an estimated 8,000 acres covered by this listed noxious weed. However, for a variety of reasons Russian olive management differs from the management of other noxious weeds on the wildlife area. One reason is its size; Russian olive is a multi-trunked tree and is typically found upwards of 40 feet tall and wide. Because of its size, WDFW staff members use multiple treatment methods to address this species and they include cut-stump treatments on large trees, foliar treatments on small trees using backpack sprayers and ATVs, aerial treatments via helicopter and mechanical removal with heavy equipment.

Another reason this species is treated differently is that in certain areas it is a dominant feature on the landscape and is a significant component of local wildlife habitat. Because of this, wildlife area staff use a variety of strategies to address this species while limiting short-term negative consequences to wildlife habitat. Strategies include, but are not limited to: limiting the spread of this species into new areas, removing small populations from particular areas altogether, treating them where they are causing a specific but limited problem such as along a property boundary, or by taking a more gradual approach to larger infestations.

Many of the treatments described above result in a large amount of cut biomass that is eventually burned. Wildlife area personnel conduct several pile burns in winter and early spring nearly every year to eliminate this biomass, and on March 21 Assistant Manager Bechtold and Private Lands Biologist Hughes completed the third and final burn of the season. Two of the piles burned were in a location where WDFW has removed over 90 percent of the olive, the last pile was in a location where Russian olive were problematic to a neighboring landowner. Consumption was nearly 100 percent at all piles within the burn window and there were no incidence of spot fires.



*Final burn of the season*

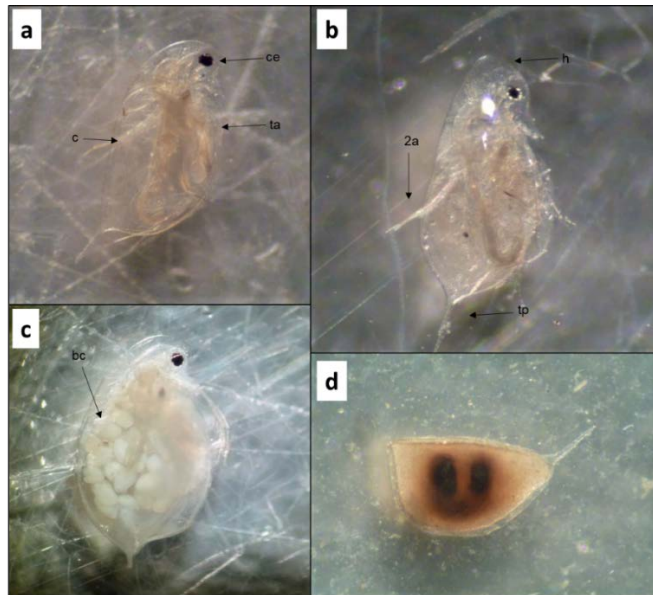
**Duck Nesting-Tube Project:** Biologist Rowan developed a five-year maintenance and monitoring plan for 50 duck nest-tubes installed on various ponds in Grant County. These structures have been installed for many years, although rare maintenance has been performed to evaluate effectiveness. Members of the Washington Waterfowl Association (WWA) and other volunteers have done a great job maintaining and donating resources when possible, and they assisted with creating new tubes from scrap materials and installing 30 tubes this March.



*Posts and cradles for duck nest-tubes were acquired with Aquatic Lands Enhancement Account (ALEA) funding in the past and were collected and brought to the Ephrata office and Region 3 for future installation. Washington Waterfowl Association members and other volunteers assisted with creating new nest-tubes for field deployment. From left: Kirke Lisi, Fritz Kiemle, Jeremy Iverson, Jeff Waltz, Mark Olmsted, Bruce Feagan. - Photos by Ella Rowan*

##### **5) Providing Education and Outreach**

**Final Bug Blog:** Scientific Technician Bell completed the final report for the Invertebrate Project aimed at evaluating the presence of fish on the invertebrate communities in local ponds important for waterfowl production. The report should be available internally in a couple weeks. Final bug blog: *So long, and thanks for all the bugs*



***Specimens of Daphnia (a-c) and daphnid resting eggs (d) collected from the north Potholes ponds and Ephrata Lake - Photos by A. Bell***

Few freshwater arthropods possess as surprising a variety of morphology as the subphylum of Crustacea. In this final bug blog, we will specifically examine some of the interesting features of one of the most well-studied and ecologically important crustaceans: the water flea (*Daphnia*, Fig.1). The body plan of *Daphnia* is much different from some the other well-known crustacean groups (crabs, shrimp, etc.). Perhaps, the most prominent feature is the single compound eye (*ce*, Fig.1a). One may also note the lack of conspicuous external limbs; the thoracic appendages (*ta*, Fig.1a) are enclosed in their carapace (*c*, Fig.1a), which is a morphological feature formed much like vest, that wraps around most of the body. *Daphnia* are generally filter feeders. They rapidly move their thoracic limbs, which are covered with setae, to force water into their carapace, trapping phytoplankton along the way. To swim, *Daphnia* use their long, segmented second antennae (2a, Fig.1b) like underwater wings, which results in an erratic swimming motion. Their common name “water flea” is derived from this jerky movement, not because of any relationship to insect fleas or to the popular musician. Many daphnid traits are highly plastic (meaning they can change) under variable environmental conditions. Interestingly, this includes most facets of their reproductive strategies. Many *Daphnia* reproduce asexually for most of their lives. Typically, females produce eggs without male fertilization (a process known as parthenogenesis), where the offspring are all female and clones of their mother. Eggs develop in the brood chamber (*bc*, Fig.1c) and the free-swimming offspring are released when the mother molts. Under certain environmental conditions, such as shortened day length or conspecific crowding, females will produce diapausing eggs (that are either the result of fertilization or produced asexually) known as ephippia. These resting eggs do not immediately hatch; rather, they either sink to lake sediments or float to the shore, allowing for population persistence in habitats of variable environmental conditions or for dispersal to new habitats. Ephippia are highly resilient. They can pass through the digestive tracts of many predators without being harmed, they are able to survive on dry land for years, and they can even remain viable in lake sediments for several decades!

Environmental conditions can even significantly alter the morphology of *Daphnia*. Under conditions such as changing temperatures or the presence of certain chemical cues, *Daphnia* can change many aspects of their body size and shape. For instance, some species of *Daphnia* respond to the presence of invertebrate predators by forming pointed helmets and elongated tail spines (*h,tp*; Fig. 1b, see *Daphnia retrocurva* for a more extreme example). The idea here is that helmets and tail spines make it more difficult to be eaten by small-mouthed predators. On top of all that, *Daphnia* are also often considered a keystone species—meaning their role in aquatic food webs is so significant that their removal would dramatically alter their home ecosystem. As filter feeders, they regulate and control phytoplankton populations and they are an important prey for numerous invertebrates, fish, and waterfowl. They are also a model organism in scientific research; much of what we know about toxicology, evolutionary biology, and aquatic ecology is stemmed from *Daphnia* research.

All too often, we focus the majority of our thoughts on only handful of species (looking at you, mammals) but, as we have illustrated in this bug blog series, the ponds and lakes in our own backyards contain a thriving world of aquatic creatures, each one the result of billions of years of evolution and adaptation. Through this process, nature has imbued complexity into the fiber of each living thing and there is an innate pleasure in uncovering, understanding, or, at the very least, in simply recognizing the existence of these intricacies of organic life. You only need a dip net to get started.

**Parks Rx America:** Lands Operations Manager Finger coordinated with Steve Milner with the Washington State Parks Commission (who had contacted WDFW about Parks Rx America) and Matthew Scribner, Chief Technology Officer with Parks Rx America (PRA) to assist in identifying appropriate natural places on WDFW lands, for health care professionals to direct patients. Finger was provided a user account and editing privileges and will prepare two to three locations with assistance from Wildlife Area Managers Fox and Eidson, to participate on a trial basis. Park Rx America is a non-profit organization whose mission is to decrease the burden of chronic disease, increase health and happiness, and foster environmental stewardship, by virtue of prescribing nature during the routine delivery of healthcare by a diverse group of health care professionals. Finger suggested that it might be more appropriate to provide links to the WDFW wildlife areas and water access sites on the WDFW website so that information remains current (USFS and State Parks have made this suggestion as well). Ultimately Finger agreed to participate and began editing (and deleting) some of the WDFW sites that were already posted on the PRA website. The biggest concern is the potential for mixed messages by having information shared from two different sources, so this will be approached cautiously for now with just two wildlife area units posted (Beebe Springs and Quincy Lakes). For more information see: <https://parkrxamerica.org/>.

**Tonasket School District Outreach Class:** Manager Wehmeyer took the Tonasket School District Outreach class that ranged from kindergarten to middle school aged students on a tour of the Sinlahekin prescribe burn units. Manager Wehmeyer discussed the reasons for doing the prescribe burns and thinning on the wildlife area. He was able to show the students some of the different plants that benefit from the burning and how they benefit wildlife. The students had a fun time exploring and had a variety of questions about the wildlife area. Many of the students want to come back to the area to camp this summer.





*Tonasket Outreach class near Conners Lake, Sinlahekin Wildlife Area* - Photo by Wehmeyer, WDFW

**2019 North Central Washington Envirothon:** Private Lands Biologist Braaten and Biologist Hughes finalized the wildlife test and materials needed for this year's Envirothon at Sun Lakes State Park. WDFW has collaborated with Foster Creek and South Douglas Conservation Districts for 10 years on this effort by providing wildlife education for several north central Washington high schools participating in the competition focused on natural resource and environmental topics and issues.

**Sandhill Crane Festival:** Biologists Rowan and Grabowsy joined Region 3 Biologist Fidorra to participate in the annual Crane Festival, which involved speaking with many members of the public at our WDFW booth and handing out free educational items to children and adults.

Othello Sandhill Crane Festival was started in 1998 and highlights the spring return of sandhill cranes eastern Washington. Lectures and tours are provided throughout the three-day celebration. There is a variety of entertaining, educational, and memorable activities for the whole family to enjoy. There is a planning committee made up of volunteers who plan, organize, and conduct the event. The committee includes a cross section of Othello citizens, Grant County Conservation District and U.S. Fish and Wildlife Service personnel, and residents from neighboring communities. Funds generated from fees are re-invested into the festival each year.

WDFW presented topics that covered the federally endangered pygmy rabbit recovery project, recently completed monarch butterfly project, and state-endangered northern leopard frog work. WDFW Biologists Rowan and Fidorra gave lectures that discussed Grant County frogs, e-bird and the birds of Borneo. This festival has grown every year, with most lectures having every seat filled. This great event highlights many of the natural wonders that occur throughout eastern Washington. For more information check out the website:

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

7) Other



*Douglas County waterfowl* - Photo by Eric Braaten



*Deer on sagebrush flats* - Photo by Hughes



*Mountain bluebirds near the Horse Spring Coulee Unit of the Sinlahekin Wildlife Area - Photo by Haug*



*Western meadowlark along Horse Spring Coulee Road, Okanogan County - Photo by Haug*

### **REGION 3**

#### ***HERE'S WHAT WE'VE BEEN UP TO:***

##### **1) Managing Wildlife Populations**

Winter feeding operations continue at the Cowiche, Nile, and Oak Creek feed sites of the Oak Creek Wildlife Area, but ceased at the Clemans sheep site on March 18. Elk numbers have declined on all feed sites, and they are in seasonably fair condition with one mortality at Oak Creek recently. Purchased hay continues to be delivered to the Oak Creek and Cowiche barns.

**Peak counts for this period:**

Oak Creek: 1,024 elk (509 end of period)

Cowiche: 1,962 elk (around 700 end of period)

Nile: 284 elk (199 end of period)

Winter-feeding is continues at the Mellotte feed site on the Wenas Wildlife Area, and although elk numbers have started to drop, 600 elk remain in the vicinity.

Elk on the feed site are in good condition, with two mortalities during this period, bringing the total at Mellotte feed site to four deaths this season. Staff members were able to rescue a yearling cow that had become stuck in the mud in a small, seasonal drainage. She was cold, wet, and tired but eventually was able to get up and rejoin the other elk.

Spring temperatures have melted most of the snow, even on the north-facing slopes in the valley. However, green-up is just getting started at the lower elevations. Elk should leave all together once vegetation at mid-elevations begins greening up. With temperatures expected to continue in the 50s through the first week of April, along with some rain showers, that green-up should be happening soon.

Sunnyside Wildlife Area Manager Buser has been working on several agriculture permits for the wildlife area with the goal of benefitting wildlife and hunting. A local team including Regional Director Livingston, Regional Program Manager McCorquodale, Regional Lands Manager Huffman, District Wildlife Biologists Bernatowicz and Fidorra, Habitat Biologists Ritter and Bartrand, Private Lands Biologist Hulett, and Waterfowl Biologist Wilson, along with wildlife area staff members have been working to put together a detailed and comprehensive plan for the Sunnyside Unit. Many ideas have been discussed for inclusion into the new permit. Successful ideas will be implemented on other units in the future. The permit is awaiting signatures before it goes out to bid. The District 4 team reviewed and discussed the agriculture permit for the Mesa Lake Unit. It is also awaiting signatures to go out for bid.

Sunnyside Wildlife Area Assistant Manager Kaelber and Natural Resource Technician Rodgers have recently been busy placing wood duck nest boxes and nesting tubes for mallards.



*Wood Duck nest boxes ready for placement*



*Nest tube for waterfowl*

District 8 Biologist Bernatowicz completed attempts to bait Yakima Canyon sheep. The idea was to establish bait sites so post-2019 harvest, bighorn sheep could be trapped and tested for *Mycoplasma ovipneumoniae* (MOVI). The ultimate goal is to eliminate MOVI from the herd via culling of pathogen shedders. Unfortunately, sheep showed little or no interest in apples, fermented apple pulp, or salt, even though they walked near the bait. Bernatowicz tried the same bait at the established Clemans bighorn sheep feed site. Prior to snow, Clemans sheep were near the bait, but did not use it. Post-snow, Clemans sheep only used apples/apple pulp after the pellets were consumed. We will explore moist bait like apples and apple pulp during the summer. If that fails, the next logical step is to bait during winter with the same pellets used at both Clemans and Chelan Butte.



*Yakima Canyon bighorn sheep ignoring a bait pile*

District 8 Biologists Bernatowicz and Moore Completed surveys of the Yakima elk herd with significant help from wildlife area personnel. The surveys include ground counts of feed sites (64 percent of the herd), all the known high and medium density aerial survey units, historic units with bull concentrations, units near feed sites, and 50 percent of the low-density survey units. Photos were taken of large groups to make counting more accurate. The survey results found the Yakima herd is currently about 8,300 elk (objective 9,500), recruited 26 calves per 100 cows (36/100 is average), and has 11 bulls per 100 cows. This is the first time in decades that the Yakima herd has fallen below bull objective (12 to 20 bulls per 100 cows). The main issue continues to be low recruitment of calves, which also means fewer spike bulls recruited annually. This will mean reduced opportunity for the near future. Unless antlerless harvest is further reduced and/or calf recruitment increases significantly, the Yakima herd will not recover to objective (9,500) anytime soon.



*One portion of a large group of elk counted via photos*

**Othello Sandhill Cranes Festival in Eastern Washington:** District 4 Wildlife Biologist Fidorra and Region 2 staff members presented at the Sandhill Crane Festival March 23. Fidorra gave a presentation on eBird use to a group of around 40 people, and spent a good part of the day attending a WDFW table in the vendor area. Migratory cranes pass through the Columbia Basin staging in farmland and wetlands on their way north now through April. Fidorra also arranged for a news interview onsite with sandhills on a private ranch in west Richland known as a stopover crane site. The local story aired on KNDU News during the festival.

**Mule Deer Winter Kill:** District 4 Wildlife Conflict Specialist Hand and District 4 Wildlife Biologist Fidorra continued to receive multiple reports of sick or lethargic deer from landowners, sportsmen, and agency partners. One report was received that 16 deer were found dead at a Corps of Engineers habitat area along the Snake River. Several samples from the Columbia Basin have been submitted for study and so far, mortality appears tied to starvation and stress from the heavy snowfall and ice in February and March. Fidorra continues to submit records to WDFW veterinary staff members who are monitoring the mortalities statewide.

**Songbird survey locations found.** Private Lands Biologist Hulett located four possible sites for the upcoming Audubon sagebrush songbird survey. Hulett contacted each landowner for the interested sites, speaking about the goals of the program and its history in Washington. All four landowners were interested in the survey and agreed to take part in the program.

## 2) Providing Recreation Opportunities

Wenas Wildlife Area personnel built and installed a walk-through gate at Black Canyon and unlocked the walk-through gates at Hessler and Kelley Hollow to provide non-motorized access to the north face of Umtanum Ridge. The vehicles gates at these three sites plus the Ridge Road entrance will be unlocked on April 1, with the expectation that by then the larger concentrations of elk will have moved up valley and away from the elk control fence.



*Black Canyon gates after installation on new walk-through gate*

### 3) Providing Conflict Prevention and Education

District 8 Wildlife Conflict Technician Leuck checked for elk activity east of Kittitas. Large numbers of elk had been in the area the previous week, but were hazed out by the landowner. The area will be checked frequently now since spring antler hunting often moves elk to the secluded private land in that area.

District 8 Conflict Technician Leuck and Conflict Specialist Wetzel checked the High Ranches area for elk on the wrong side of the fence. No elk were observed, but repairs on the elk fence in that area are needed. Conflict staff members will coordinate with L.T. Murray Wildlife Area personnel to identify locations when access to the area is less difficult.

Officer Myers and District 8 Conflict Specialist Wetzel visited a Future Farmers of America (FFA) pig grower to gather information on four piglets that were attacked by an unknown predator east of Moxee. Two pigs were killed, and two were badly injured. After consultation with WDFW cougar and wolf specialists, the piglet deaths and injuries were attributed to domestic dog(s).



*Injuries to a piglet in Moxee*

A horse owner in the Nile called Enforcement Officer Myers about a Canada goose that attacked the owner while feeding her horses. Officer Myers and District 8 Conflict Specialist Wetzel visited the site and could not locate the goose. Advice and information was provided to the reporting party about geese and nesting goose behavior.

District 4 Wildlife Conflict Specialist Hand continued to coordinate with a landowner experiencing elk damage to an organic cornfield near Mesa. Non-lethal strategies and hazing



techniques appear to be working to reduce elk activity near the crops. Thanks to Sunnyside Wildlife Area staff members Kaelber and Rogers for monitoring elk movements and minimizing disturbance on the adjacent Windmill Ranch.

**Deer Damage to Young Cherry Trees:** District 4 Wildlife Conflict Specialist Hand received and responded to an orchardist in the Prosser area who is reporting deer damage in a newer planting of cherry trees. A propane cannon and active hazing will be employed to assist in minimizing damage within the orchard.

#### **4) Conserving Natural Landscapes**

Snow has melted quickly with recent warm temperatures in Region 3. See photos below from the Wenas Wildlife Area.



*Hessler Flat entrance – February 18*



*Hessler Flat entrance – March 28*



*Umtanum Creek on March 21*



*Umtanum Creek on March 28*

### **5) Providing Education and Outreach**

Region 3 Private Lands Biologist Hulett presented at the Backcountry Hunters and Anglers' Pint Night on March 29 at Kimo's Sports Bar in Richland.



## 6) Conducting Business Operations and Policy

Nothing for this installment.

## 7) Other

Oak Creek Wildlife Area Manager Mackey met with Yakama Tribe and NOAA fisheries biologists to discuss the Yakama Tribe's submittal of a Salmon Recovery Funding Board design grant for re-watering side channels of the Tieton River identified as priorities during a 2016 study.

## **REGION 4**

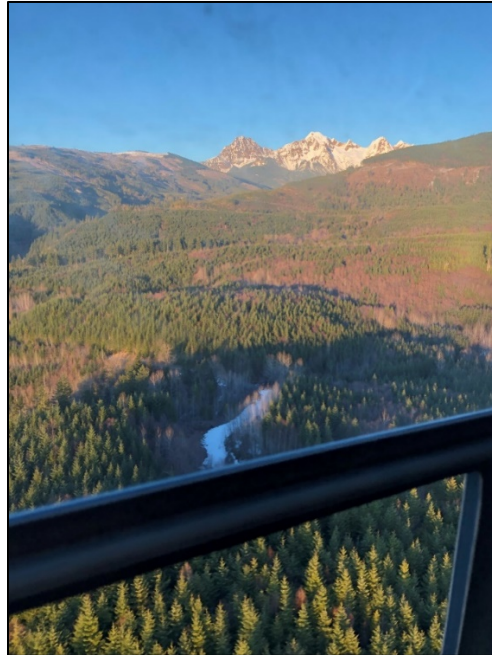
### *HERE'S WHAT WE'VE BEEN UP TO:*

#### 1) Managing Wildlife Populations

**Swan Management:** WDFW and Northwest Swan Conservation Association staff members have detected a recent increase in swan mortality in Snohomish County. WDFW personnel surveyed for swans in portions of King County during the course of other activities to assist with determining if other locations may hold ailing swans.

**White-nose Syndrome Monitoring/Bat Management:** District 12 retrieved four dead bats and went through the other specimens for submission to headquarters. WDFW staff members attended the Bat Working Group meeting to discuss local needs and future interagency and non-governmental organization partner efforts to provide for accomplishing these needs.

**North Cascades Elk Herd Survey:** District Biologists Waddell and Moore worked with biologists from the Point Elliott Treaty Tribes to complete the first round of surveys to estimate the population size of the North Cascades elk herd. The second round of surveys will be completed during the first week in April.



*A beautiful view from the helicopter while conducting a survey flight*

**Oregon Spotted Frog Egg Mass Survey:** Biologist Moore assisted Whatcom County Amphibian Monitoring Program Lead Scientist Nyman with an egg mass survey on a private property in Whatcom County. Oregon spotted frogs are a Washington state endangered species and in August 2014 was listed as a threatened species under the federal Endangered Species Act. Oregon spotted frogs were first detected in Whatcom County in 2011. Since their discovery they have been found at sites in the watersheds of the south fork of the Nooksack River from Acme north, the Samish River south of Acme (extending into Skagit County), and one location in Sumas River headwaters. Approximately 10 oviposition sites were found and a couple hundred individual egg masses were counted. Surveys of other sites in the area will occur over the next few weeks.

**Swan Deterrents in Whatcom County:** Biologist Moore removed swan deterrents that were placed on private property back in January when reports of high swan use on an area frequently used for trap and skeet shooting. The hope was that these deterrents would discourage swans from feeding and/or gritting in the area where chances of accidentally ingesting lead pellets was high. Once the deterrents were installed, the property was monitored by locals who reported no use by swans. This property will be monitored next season and deterrents will be used as needed.

**Fraser and Skagit River Deltas Snow Goose Photo Survey:** Specialist Evenson and Biologist Moore flew with Rite Bros Pilot Wells to perform this season's second snow goose photo survey. Transect lines are flown over agricultural and park fields in Snohomish, Skagit, Whatcom counties, and north of the border into Canada. Surveys are used to monitor the population of flocks in this area, which are used in setting harvest regulations for this species. Execution of this survey was delayed several weeks due to snow. Moore noted that swan numbers have decreased since the previous survey flown at the end of December, indicating migration to the breeding grounds has started.



*The maneuverable and comfortable Cessna 172 owned by Rite Bros., which was used to fly the photo survey for snow geese - Photo credit Jeff Wells, Rite Bros.*

**Wildlife Management:** Wildlife Conflict Specialist Witman continued to work with a dairy producer in Skagit County. Nighttime monitoring, by WDFW staff members, of the dairy farm to discourage elk from the property had little success. Camera monitoring and landowner observations indicted most activity occurring after midnight.



*Bull elk frequenting a dairy farm in Skagit County during early morning hours*

## 2) Providing Recreation Opportunities

**North Skagit Spring Bear Hunt:** Region 4 Private Lands personnel collaborated with Washington Department of Natural Resources (DNR) staff to tour the north Skagit spring bear unit. WDFW, DNR, and private timber companies in the area partner to provide the north Skagit spring bear hunt permit holders behind the gate vehicle access for this hunt opportunity.

**Waterfowl Post-Season Debrief:** Private Lands and Skagit Wildlife Area staff members hosted a waterfowl post-season debrief for Region 4 personnel. The meeting was well attended, including Enforcement and Habitat Program and Olympia staff members.



*Region 4 personnel at the waterfowl post-season debrief*

## 3) Providing Conflict Prevention and Education

**Region 4 (District 12) Conflict:** District 12 met with King County representatives to discuss options for excluding Canada geese (and potentially other waterfowl) from foraging on and damaging upcoming restoration sites along the Duwamish River.

District 12 coordinated damage related harvest efforts in the Green Valley area. Upper Snoqualmie Valley elk management group volunteers collected and processed one landowner harvested cow elk for donation to a food bank. District 12 deployed a master hunter to assist in hazing/hunting activities.

District 12 assisted with recommendations and installation of a landowner installed elk deterrent fence in the North Bend area. The land is leased by farmers who will be growing vegetables in an area frequented by large numbers of elk.

District 12 assisted a Federal Way homeowner with information and recommendations to deter a northern flicker from attempting to nest in the walls of the home.

District 12 worked with Diversity Program and Region 4 management to examine management and regulatory needs involving a request for commercial activities at a peregrine falcon eyrie. An appropriate response was provided regarding conservation management considerations and regulatory needs for this state protected species.

District 12 discussed bird airstrike (in particular raptor) management and regulatory considerations with Port of Seattle SeaTac International Airport biologists. The group also touched on overall research efforts and recent interesting species occurrences to follow-up on. More planes and more wildlife packing in around the airport makes for lots to do to shoo them away or control them in an appropriate manner while supporting habitat and other wildlife enhancements that are not in conflict with flight traffic and airport operations.

District 12 provided input regarding state wildlife occurrence and management needs for the East Link Light Rail project with Sound Transit environmental planners.

#### **4) Conserving Natural Landscapes**

**Preparation for Leque Island Estuary Construction:** Projects Coordinator Brokaw and the WDFW and Ducks Unlimited project team coordinated several times to prepare for summer of 2019 construction for the Leque Island Estuary Restoration Project. The team reviewed and made decisions toward 90 percent completed design plans, discussed construction management responsibilities, and began preparing specifications for a bid package that will be released for prospective contractors.

**Newest Natural Heritage Area:** District 12 received notice from Mountains to Sound Greenway Trust that the Mountains to Sound Greenway is now the newest Natural Heritage Area in the nation as well as the first in the Northwest. District 12 sits on the Greenway Technical Advisory Committee and has worked with Greenway staff members and partners in wildlife planning and outreach efforts. This is fantastic news a huge congratulations to trust staff members and all partners. More can be found here: <https://mtsgreenway.org/learn/national-heritage-area/>

#### **5) Providing Education and Outreach**

**Lower Stillaguamish Socioeconomic Study:** Projects Coordinator Brokaw and Habitat Biologist Desmul organized a workshop with recreation stakeholders in the lower Stillaguamish River to get input on a study that consultants are leading that will quantify social and economic benefits generated by the Leque Island restoration and other nearby projects.

**Seattle's Urban Bird Treaty Status:** District 12 worked with WDFW Public Affairs to examine working with USFWS and Seattle Audubon in social media efforts promoting Seattle's Urban Bird Treaty status. WDFW is one of the major partners that worked to attain this status and is engaged in an ongoing working group promoting related efforts.

## 6) Conducting Business Operations and Policy

Nothing for this reporting period.

## 7) Other

Nothing for this reporting period.

## **REGION 5**

### 1) Managing Wildlife Populations

**Golden Eagle Monitoring:** Biologists Wickhem, Bergh and Volunteer Flick surveyed for golden eagles at a historical nesting site in southern Klickitat County. This site has been proposed as a potential location for an energy development project. The crew wants to determine if the area is still used for nesting, since the nest has not been monitored in several years. They will revisit the site up to three more times to look for evidence of reproduction. On this visit, they observed one juvenile golden eagle, one juvenile bald eagle, a pair of prairie falcons displaying courtship behavior, and a red-tailed hawk.

*Volunteer Flick scanning for raptors*



**Oregon Spotted Frog Egg Mass Survey:** Now that the snow is finally melting in the Trout Lake Valley, Biologist Wickhem conducted the first survey of the season for Oregon spotted frog egg masses. The egg-laying season is off to a slow start, with only two egg masses located in between the ice and snow banks. This marks one of the latest dates ever recorded for the start of the breeding season in this part of the state. Warmer weather is in the forecast, which should encourage more frogs to start breeding over the coming weeks. A more comprehensive survey of the valley will occur in a few weeks in order to get a population estimate for this federally threatened species. For more information on Oregon spotted frogs, please visit: <https://wdfw.wa.gov/species-habitats/species/rana-pretiosa> on our new website.





*Blue skies for the first Oregon spotted frog survey of the season*



*Oregon spotted frog egg mass*

**Mount St. Helens Elk Herd Population Surveys:** Biologists Holman, Bergh, and Wickhem, Wildlife Area Manager Hauswald and Assistant Managers Wildermuth and Steveson, Conflict Specialist Jacobsen, and Hoof Disease Coordinator Garrison teamed to conduct elk surveys in the “Core” Mount St. Helens herd area. Biologist Stephens conducted flight following during the effort. This area encompasses portions of Game Management Units (GMUs) 520 (Winston), 522 (Loo-Wit), 524 (Margaret), 550 (Coweeman), and 556 (Toutle). Fifteen survey units were sampled with the available funding this year and 204 groups of elk were observed during the survey effort. WDFW’s westside elk sightability model will be used to generate GMU level population estimates as well as sex and age ratios. Thanks to Northwest Helicopters’ Pilot Jess Hagerman for his expert flying.



*Mount St. Helens elk herd population surveys*

**Dusky Canada Geese:** Biologist Burlingame conducted the last surveys across Clark, Cowlitz, and Wahkiakum counties for dusky geese. Several flocks of duskies were observed, including two duskies with red neck collars. Collar re-sights aid in determining survival and distribution of duskies that overwinter in southwest Washington. Overall, many cackling, taverners and snow geese were observed but in much more concentrated areas than previously throughout the survey season. Geese appear less distributed across the survey area as they begin moving north to their breeding grounds in Alaska.

## **2) Providing Recreation Opportunities**

**Turkey Questions:** Wildlife Conflict Specialist and Private Lands Biologist Jacobsen was contacted by a turkey hunter who was looking for places to take his 14-year-old daughter on a turkey hunt in Klickitat County. Jacobsen provided advice on several places to find turkey hunting opportunities on both public and private land in the area.

## **3) Providing Conflict Prevention and Education**

**Injured Deer:** Wildlife Conflict Specialist Jacobsen was contacted by a local resident who had seen a Facebook post of dogs attacking and injuring a deer in the area. Photos of the deer indicated that the deer was wounded and bleeding. Jacobsen travelled to the scene to attempt to locate the wounded deer, but was unable to find it. However, Officer Nelson was able to locate the dogs and their owner.

**Habituated Deer:** Wildlife Conflict Specialist Jacobsen was contacted by local animal control officers regarding a yearling deer that was in poor body condition and was following residents around at very close distances. The unusual behavior of the deer suggests that the deer had been routinely fed by humans and was likely illegally hand-reared by a resident in the area. The deer also exhibited symptoms of hair loss syndrome, caused by a non-native lice species. Advice was given to animal control officers and residents about keeping their distance from the deer and hazing it when possible. Jacobsen will continue to monitor the situation in case the deer starts acting aggressively towards humans.

**Cougar Trap:** Wildlife Conflict Specialist Jacobsen and Biologist Burlingame disassembled a cougar trap that was placed in hopes of catching a human-habituated cougar. However, the cougar had not been seen at the residence since the trap was placed. Hopefully, the cougar followed the melting snow and retreated to higher elevation on public land away from the residential area.

**Landowner Visit:** Wildlife Conflict Specialist Jacobsen visited a landowner in Clark County who had been complaining of elk damage to his hay and pasture land. The landowner was enrolled in a Damage Prevention Cooperative Agreement, hazing and public hunting measures were discussed, and a permit was issued to help alleviate the elk damage.

**Elk:** Wildlife Conflict Specialist Conklin responded to a landowner's concern of lower numbers of elk observed in the south Rainier Game Management Unit. In addition, Conklin deployed a disabled elk hunter to agricultural fields in Onalaska as well as a farm in Morton experiencing elk damage to commercial hay fields.

**Ducks:** Wildlife Conflict Specialist Conklin responded to a report of a duck that had been killed by an unknown predator. Conklin provided advice such as keeping ducks and chickens in a secure coop.

**Deer:** Wildlife conflict Specialist Conklin verified damage on a Christmas tree farm in Centralia. Deer are raking their antlers on the trees causing broken branches and bark loss. The landowner will be entering into a Damage Prevention Cooperative Agreement.

#### **4) Conserving Natural Areas**

**Klickitat Wildlife Area Turtle Habitat Monitoring and Enhancement:** Wildlife Area Manager Van Leuven and Assistant Manager Steveson visited the Sondino Unit to check on pond water levels and make sure that basking rafts are placed where they will receive strong sunshine. Snow has been melting rapidly and the ponds are full. The gauges for measuring water levels in two ponds were completely underwater. One of them was 10 to 12 inches short of the pond surface. Steveson and Van Leuven moved three rafts to better locations. Numerous adult turtles were observed during the visit, as well as many ducks, a cormorant, a heron, a turkey vulture, Lewis' woodpeckers, wild turkeys, and several deer. One of the ducks was a ring-necked duck, which is somewhat unusual for this location.



*Turtle basking on a log on the Sondino Unit*

**Mount St. Helens Wildlife Area Tree Plantings Maintenance:** Assistant Wildlife Area Manager Wildermuth visited the Jenny Creek and Cedar Creek units to inventory the success of tree plantings from the last two years. As expected, some trees did not survive but many others are doing well. The trees will provide refuge and forage for a variety of wildlife as they grow. Particular species were selected for these two units to provide food for band-tailed pigeons, which still utilize a mineral spring on the Cedar Creek unit and have historically utilized one on the Jenny Creek unit.

**Mount St. Helens Wildlife Area Forest Health Thinning:** WDFW foresters visited the Hoffstadt Unit with Assistant Wildlife Area Manager Wildermuth to check in on a thinning operation. A contractor was hired to thin a stand of trees that had been planted following a timber sale but that was never properly thinned as they grew. Thinning allows the remaining trees to grow larger and more sunlight to reach the forest floor to promote a healthier understory. The crew has done a good job of removing smaller trees and opening up the stand.

**Mount St. Helens Wildlife Area Tree Planting:** Over two days Manager Hauswald, Assistant Manager Wildermuth, and a group of volunteers planted approximately 6,600 deciduous trees and shrubs in patch cut areas of the Hoffstadt Unit. Species planted included black cottonwood, vine maple, bitter cherry, paper birch, Pacific ninebark, blue elderberry, serviceberry, salmonberry, and cascara. These young trees will increase the diversity of habitat and forage in what was a predominately alder forest. A huge thank you to all of the volunteers who helped out with the effort, especially Rodger and Ramona Wallace for all of their assistance in organizing and running the work party. There are still more opportunities this year to come help out and learn about the work being done on the wildlife area. If interested, please visit the volunteer page on the Washington Department of Fish and Wildlife website.



*WDFW staff members and volunteers planting trees on the Hoffstadt Unit*

**Cowlitz Wildlife Area Scotch Broom Control:** Assistant Wildlife Area Manager Vanderlip and Tacoma Resource Lands Coordinator Russell cut and stump treated (hand pulled when possible) approximately 300 scotch broom plants on the east end of Riffe Lake near the historic location of the town of Kosmos. The permanent lowering of the reservoir has resulted in bare soils and staff are finding broom (generally isolates) all over the Kosmos and Riffe Buffer areas. A pedestrian survey was conducted over 200 acres and the plants were treated as they were encountered.



*Cutting scotch broom to expose the stump and vascular tissue followed by chemically treating the stump*

## **5) Providing Education and Outreach**

**Volunteer Work Parties:** The Mount St. Helens Wildlife Area had two days of work parties to plant trees on the Hoffstadt Unit in an area that was recently thinned as part of a commercial harvest. The goal is to increase the diversity of tree and shrub species to provide habitat and forage for wildlife species. If you are interested in volunteering, please visit the volunteer page on the WDFW website and search for the Mount St. Helens Wildlife Area opportunities.

**Cougar:** Wildlife Conflict Specialist Conklin coordinated with the master hunter volunteer coordinator to provide assistance to Wahkiakum School District. The school district reported recent cougar sightings. Conklin provided safety information and advice, including removing heavy vegetation near a playground that could be used by a predator as cover. Conklin also walked the school grounds and installed a trail camera. Conklin will coordinate with WDFW Enforcement if the cat continues to remain close to the school.

**Master Hunter Assistance:** The master hunter volunteer coordinator will assist with getting master hunter volunteers to assist a landowner to place bud caps on seedling trees in a newly planted piece of forestland.

**6) Conducting Business Operations and Policy**

Nothing for this reporting period.

**7) Other**

Nothing for this reporting period.

**REGION 6**

*HERE'S WHAT WE'VE BEEN UP TO:*

**1) Managing Wildlife Populations**

**Dusky Goose Survey:** Biologist Michaelis, Sundstrom, and Novack surveyed portions of Pacific and Grays Harbor counties for marked dusky Canada geese and other geese. Goose numbers appear to be dropping in north Pacific and Grays Harbor counties. Information from southern Pacific County was unavailable at the time of this report.

3/18/2019	Cackler #banded	Aleutian #banded	Tav/Lesser #banded	Dusky #banded	Western #banded	Wusky #banded	GWF	Snow	Unknown	Totals						
<b>Grays Harbor County</b>	290	0	436	439	5	411	0	0	82	2	512	<b>2,172</b>				
<b>North Pacific County</b>	792	0	511	1,575	23	0	0	0	0	0	1725	<b>4,603</b>				
<b>South Pacific County</b>	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>				
<b>Total</b>	<b>1,082</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>947</b>	<b>0</b>	<b>2,014</b>	<b>28</b>	<b>411</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>82</b>	<b>2</b>	<b>2,237</b>	<b>6,775</b>

**Oregon Spotted Frog Surveys:** Biologist Butler, along with a U.S. Fish and Wildlife Services staff member and volunteers, continued surveys at known and potential areas for Oregon spotted frog egg masses. Water levels appear lower this year with some of last year's breeding areas found with little to no water. Still, egg masses have been found in areas with adequate water levels. So far, Biologist Butler has counted about 180 egg masses across five different sites with one new site being discovered this year. During the last week in March, many eggs have started hatching with the tadpoles found massing in the middle of the egg clusters.



*Oregon spotted frog (top right corner) found near the egg mass cluster*

Biologist Tirhi and volunteer extraordinaire Terry spent considerable time surveying known (and declining) Oregon spotted frog breeding sites and searching for new locations. In partnership with Capital Land Trust (CLT) and with personnel provided by Joint Base Lewis McChord and other volunteers, Tirhi organized and led a massive sweep of Land Trust property along the Black River, Thurston County. Oregon spotted frogs were found breeding nearby! CLT should be commended for the very important work they do conserving lands across the South Puget Sound for wildlife and the general public. Tirhi and Terry also surveyed private lands in the Mima Creek and Coyote Creek as well as oviposition (egg mass) counts at one known site on Salmon Creek and one known site on Fish Pond Creek. Unfortunately, with extremely low water levels this late winter and early spring, many egg masses are now out of water and desiccating (presumed initially laid in some amount of water that since desiccated).



*Oregon spotted frog egg mass left dry and desiccating due to extremely low water levels so far in 2019*



Biologist Tirhi drafted a grant section application and budget for habitat enhancement and monitoring of the Salmon Creek Oregon spotted frog-breeding site. This is one of five project sites included in a comprehensive USFWS recovery grant application. Tirhi's fund request would pay for invasive reed canary grass control, bullfrog abatement equipment, and revegetation at this important breeding site where the spotted frog population has been declining over the past three years.

**Wolf Monitoring:** Biologist Tirhi spent a day with Wolf Specialist Maletzke snowmobiling areas in the Carbon River and White River drainages of District 11. A scattering of wolf reports have trickled into WDFW from these areas. Although snowmobiling conditions were terrible, the two were able to find enough snow in the Carbon River area to conduct a good stretch of track surveys. No wolf tracks were found nor wolves heard. A lack of snow in the White River area precluded surveys by snowmobile. Deer, elk, and other small mammals were numerous in both areas. Maletzke's impression of the area was that the Carbon River drainage is ideal for wolves and could likely be a place that wolves will naturally colonize over time. The White River also has numerous mid-elevation meadows and ridgelines that, combined with abundant prey (elk), make this area ideal. Maletzke advised Tirhi on longer term monitoring using both track and trail camera surveys. Tirhi has recently purchased cameras for deployment in both areas and is working with land managers on access. She will be closely advised by the wolf specialist team as work progresses.

**Taylor's Checkerspot Distance Point Count Survey Training:** Two occupied Taylor's checkerspot sites west of the Elwha River are monitored by WDFW using a distance point count method. This method was initiated in 2018 and surveyed by two field staff members (Biologist McMillan and Biologist Ament). The 2019 season will include two additional surveyors, Biologist Bell and Biologist Murphie. Research Scientist Olson conducted a training for all four Biologists on March 18 in Port Angeles. The field portion of the training had to be postponed due to roads still being blocked with snow. This is a frequent issue for the two Taylor's checkerspot sites west of the Elwha, because the road access is on the north facing slopes and the snow remains there when the south facing habitat sites have been clear of snow for weeks.

**Taylor's Checkerspot Butterfly Survey Planning:** Biologist McMillan consulted with Research Scientist Olson regarding the point measurements of obstructed view. The field portion of the survey training is scheduled for March 29. This training will include details of point count habitat measurements and butterfly observation records.

**Bats:** Biologist Tirhi represented District 11 at the annual Washington Bat Working Group meeting held in North Bend. Representatives from various WDFW districts, Bats Northwest, U.S. Forest Service (USFS), academia, and other volunteers attended the meeting. Topics ranged from white nose syndrome monitoring to colony surveys, equipment, and research. This is an important annual meeting for collaboration across the state on all things bat related.

**Pollinator Promotion:** Some new applications and brochures are available to encourage the public to recognize and encourage pollinator friendly activities. Below is a couple of new iPhone applications plus several of the internet accessible documents.

### ***Insight Citizen Science***



### ***BeeSmart Pollinator Gardener for iOS devices***



Maritime Northwest Region Plant List Dec 2017 – [https://xerces.org/wp-content/uploads/2016/10/2017-048\\_MaritimeNorthwestPlantList\\_Dec2017\\_web-4page.pdf](https://xerces.org/wp-content/uploads/2016/10/2017-048_MaritimeNorthwestPlantList_Dec2017_web-4page.pdf)

Native Thistles - [https://xerces.org/wp-content/uploads/2016/10/2016-029\\_Native-Thistle-Conservation-Guidelines\\_FINAL\\_web.pdf](https://xerces.org/wp-content/uploads/2016/10/2016-029_Native-Thistle-Conservation-Guidelines_FINAL_web.pdf)

Improve Forage for Native Bee Crop Pollinators - [https://xerces.org/wp-content/uploads/2008/10/agroforestrynotes33-bee\\_forage.pdf](https://xerces.org/wp-content/uploads/2008/10/agroforestrynotes33-bee_forage.pdf)

Farming for Bees - [https://xerces.org/wp-content/uploads/2008/11/farming\\_for\\_bees\\_guidelines\\_xerces\\_society.pdf](https://xerces.org/wp-content/uploads/2008/11/farming_for_bees_guidelines_xerces_society.pdf)

Organic Farming Practices: Reducing harm to pollinators - <https://xerces.org/wp-content/uploads/2009/12/xerces-organic-farming-practices-factsheet.pdf>

Pollinator Management for Organic Seed Producers - <https://xerces.org/pollinator-management-for-organic-seed-producers/>

Using Farm Bill Programs for Pollinator Conservation - <https://xerces.org/guidelines/using-farm-bill-programs-for-pollinator-conservation/>

Sustaining Native Bee Habitat for Crop Pollination - [http://plants.usda.gov/pollinators/Agroforestry\\_Sustaining\\_Native\\_Bee\\_Habitat\\_for\\_Crop\\_Pollination.pdf](http://plants.usda.gov/pollinators/Agroforestry_Sustaining_Native_Bee_Habitat_for_Crop_Pollination.pdf)

Alternative Pollinators: Native Bees - <http://attra.ncat.org/attra-pub/nativebee.html>

Pollinator Friendly Parks - [https://xerces.org/wp-content/uploads/2009/05/pollinator\\_friendly\\_parks\\_21ed\\_xerces\\_society.pdf](https://xerces.org/wp-content/uploads/2009/05/pollinator_friendly_parks_21ed_xerces_society.pdf)

Making Room for Native Pollinators: How to Create Habitat for Pollinator insects on Golf Courses - [https://xerces.org/wp-content/uploads/2008/10/making\\_room\\_for\\_pollinators\\_usga.pdf](https://xerces.org/wp-content/uploads/2008/10/making_room_for_pollinators_usga.pdf)

Pollinator Conservation: Three Simple Steps to Help Bees and Butterflies - [https://xerces.org/wp-content/uploads/2010/11/pollinator-three-steps\\_fact\\_sheet2.pdf](https://xerces.org/wp-content/uploads/2010/11/pollinator-three-steps_fact_sheet2.pdf)

<https://xerces.org/pollinator-conservation-resources-us-and-canada/>

<https://xerces.org/pollinator-resource-center/>

## 2) Providing Recreation Opportunities

**Bobcat, River Otter, and Cougar Sealing:** Biologists Butler and Tirhi met with multiple hunters and trappers who needed their harvested bobcat, river otter, and cougar sealed. One trapper reported getting many of his bobcats during the cold snap in February. After checking each hunter/trapper's license, all the required information was collected and the animals were properly sealed.



*Successful trapper with this season's bobcat harvest*

Biologist Tirhi has had numerous calls from bobcat, and to a lesser extent, river otter trappers and hunters asking to have their pelts sealed before the April deadline. Thanks to all our furbearer hunters/trappers that follow the regulations, obtain the necessary licenses, and seek a WDFW representative to have their pelts sealed. The information is vital to managing these important Washington species.



*Bobcat (male) harvested in Pierce County*

**Dump Site Cleanup:** Natural Resource Technician Tupen cleaned up some garbage on private timber company lands that allow free public access in Grays Harbor and Pacific counties. Tupen took note of larger dumpsites that will be put on the to-do list.



*Getting some trash off the landscape and into the dumpster*

**Private Landowner Meeting:** Biologist Harris, Waterfowl Section Manager Spragens, Enforcement Captain Anderson, and Private Lands Access Program Manager Strickland met with a private landowner in Jefferson County to discuss issues related to hunter access. Over the 2018-19 waterfowl season some hunter's demonstrated behavioral problems. The landowners were still a little upset, but for the most part decided it was not that bad. Still some issues were discussed and some possible resolutions were identified. However, the landowners also had some frustration with the WDFW on other issues. They are currently contemplating cancelling their access agreement. Biologist Harris discussed with his supervisor. He will be visiting with the landowner in the near future to assist with some other problems and hopefully work on the relationship issues. While there, they toured the property where numerous mallards, widgeon, Canada geese, and swans were observed.



*View of swans using property. There is also over a thousand wigeon with the swans that are difficult to see due to low quality picture*

**Duck Stamp Proposals:** Biologist Harris submitted two proposal requests for waterfowl habitat improvement and public access in Region 6. During the process, he revisited locations that were planted with winter forage during the fall.



*Picture taken January 2019 of swans using cover crop planted early fall 2018*



*Picture of same field taken in March 2019 showing that most of the forage has been consumed by waterfowl (red circle is reference point)*

### **3) Providing Conflict Prevention and Education**

**Elma Deer:** Natural Resource Technician Tupen located and assessed the behavior of a young black-tailed deer that has become a bit of a nuisance at a nursery in Elma. It is believed that the deer was found as a fawn and raised by someone in the area near the nursery. The young deer was originally reported to be running around with a dog. Locals report that it is habituated to humans and has no fear of dogs. When Natural Resources Technician Tupen and Biologist Harris attempted to locate it for capture and relocation the deer was not to be found. One local reported that the deer almost got hit by a car. Given the location and lack of fear, it likely was hit by a vehicle or tried to make friends with the wrong canid.

**Aberdeen Gardens Elk:** Biologist Harris and Natural Resource Technician Tupen visited an Aberdeen landowner who reported a large group of elk spending time in his fields. Tupen returned the next morning and counted more than 100 elk. The landowner reported counting 123 elk a few days prior. It is believed that several groups from surrounding areas merged to form this mega group. With guidance from Biologist Harris, Natural Resource Technician Tupen is in the process of getting a Damage Prevention Cooperative Agreement in place for the landowner.

**Beaver Deterrents:** Natural Resource Technician Tupen replaced bear hide on private timber company lands to help reduce beaver activity that damages the roads. One of these areas showed signs of possible beaver activity, which he will continue to monitor closely. This has turned into a long-term effort and has been very effective at reducing conflict between landowners and beavers. While the beavers may disagree, it really does benefit them also!

**Ocean Shores Wildlife Conflict – Deer and Not Cougar:** Biologist Harris and Natural Resource Technician Tupen responded to an injured deer in Ocean Shores. The Reporting Party (RP) stated that the deer was down and unable to get up. The RP refused to allow Ocean Shores Police Department to assist. A WDFW enforcement officer was in the area and responded. The RP was reluctant to allow the deer to be put down on her property. The officer requested Biologist Harris respond as the deer would need to be immobilized to be moved. When he arrived the deer had moved a short distance onto a nearby undeveloped lot. After speaking with the RP he located the deer and assessed it. The deer did not attempt to move away. It appeared to have suffered injuries from a vehicle incident. His visual assessment indicated that it had several broken bones and likely internal injuries. After assessing, he went back to the RP and explained that it will die. He can put it down or let the deer suffer for an unknown amount of time. He explained that in this case immobilizing it would cause increased suffering for the deer. The RP agreed to allow it to be put down on her property. When he went back to the deer, it had crawled off into very dense brush and they could not locate it. Unfortunately, this is an example of when human perception of humane treatment can cause unnecessary suffering for injured wildlife.

On another note, while in the area Biologist Harris and Natural Resources Technician Tupen were approached by several deer. Clearly indicating that someone or many are still feeding deer in the area.



*This deer approached WDFW staff members looking for a treat. No treats were given!*

As they were clearing the scene, they encountered a deer that is well known to Biologist Harris and Ocean Shores Police Department (OSPD). Some locals call her Gimpy. At some point in her past, she was injured and lost the use of her left front leg. Over the past several years, she has generated countless calls to WDFW and OSPD most demanding that she be put down to end her suffering. While contrary to the belief of some folks, WDFW doesn't just put animals down because people don't like to see them. This deer has managed to live for several years and even produce fawns. Biologist Harris noticed that other than difficulty with walking she was in pretty good condition considering the time of year.



*One admirable deer demonstrating her determination to live life. WDFW biologists have been fielding calls and observing this deer for several years. While it is hard to look at, she has earned the respect of many.*

While in the area, they responded to two reports of possible cougar predations on deer. In both cases, it was determined that a predator was not the cause of death. More than likely, they were the result of an interaction with a vehicle. Unfortunately, with the recent report of a cougar in the area, it has resulted in some cougar hysteria resulting in several calls to WDFW and OSPD regarding dead deer. Often it is just old sun bleached bones.

**Elma Deer:** Natural Resource Technician Tupen responded to several reports of black-tailed deer with hair slip in the Elma area. Tupen advised the reporting parties that this is a common thing to witness this time of year and most deer will recover from it.



*A case of some bad hair slip*



**Cougar Depredations:** Natural Resource Technician Tupen accompanied Biologist Harris to check on several reported cougar depredations on deer recently. However, upon further inspection none of them showed any evidence of a cougar as the culprit. Tupen retrieved a trail camera from a landowner who had reported seeing wolves and cougars in his yard frequently. The camera had been set for two weeks in the yard. The only pictures it caught were of the property owner's dog. Tupen advised the landowner to try and get a picture next time he sees a large predator in his yard.

**Elk Damage:** Natural Resource Technician Tupen checked some fields in the Willapa Valley to gauge when we will need to start our elk hazing efforts in the area. Tupen contacted several master hunters who drew Region 6 damage elk permits as we try to get a few more hunters an opportunity at an elk before the season closes.

**Forks – Report of Llama Depredation:** Biologist Harris responded to the report of a possible cougar depredation on llamas near Forks. On scene, he asked the caretaker how many llamas they had. They did not know. He also asked what made them think the deaths were from a cougar. They stated that someone reported that they saw a cougar in the area. The reporting party (RP) showed him two dead llamas that they had moved. While there, he located two more dead adult llamas and one deceased young llama. The two adult llamas were found under trees and had some bird scavenging, but were mostly intact and the baby llama was mostly consumed. All carcasses were in an advanced stage of decomposition. Cause of death was determined not to be related to a depredation with the exception of the baby. RPs were advised to get a count of llamas and report any missing or dead animals as soon as possible. They were also reminded that with their proximity to a national park and industrial forestlands it is a given that predators are in the area and proper animal husbandry should be practiced.



*Picture of llama in advanced stage of decomposition. No sign of struggle observed.*

A week later the biologist received a call of another dead llama that the caretaker believed was a cougar depredation. He requested that the llama be covered with a tarp. The next morning Officer Wessel and Biologist Harris arrived and investigated. The carcass was protected as requested. It did show signs of scavenging that occurred prior to being found. The carcass was examined externally and skinned. No evidence of a depredation was found. Further examination indicated that the llama was in poor nutritional condition. It should be noted that severe weight loss can be attributed to many things besides lack of food. There are known diseases that will cause extreme weight loss.



*Llama covered as requested*



*Carcass with signs of scavenging*



*Carcass opened up after skinning*



*A portion of the femur showing bone marrow.  
It should be more pinkish/white.*



*An indicator of malnutrition is the loss of muscle mass. Note the knife is laying on the spine where there should be more muscle tissue.*

**Cougar Predation – Wishkah:** Biologist Harris responded to a very concerned RP regarding a deer they thought was killed by a cougar. Even though there was no carcass they insisted someone respond. He went to the location the next day. Close to a busy road was some deer hair. Their gate was damaged and the fence along the driveway was bent in with some deer hair on the ground underneath. No evidence of a predation was found and no cougar sign. With little evidence to go by, his best guess is that the deer was hit by a car and had difficulty getting over the gate and fence. He did find a piece of amber colored material, similar to a turn signal light from a car, near the area where the hair was found along the road.

**Cougar Predation – Amanda Park:** Biologist Harris and Natural Resource Technician Tupen responded to a report of a deer being predated upon by a cougar in Amanda Park. The reporting party was concerned because there are kids living on the property. Due to the current cougar hysteria that is ongoing, they decided to find out if it was actually killed by a cougar. They quickly determined that it was not a cougar kill. The bullet that biologists found in the head of the deer was good indicator of what really killed it. This of course led to other questions. WDFW police were advised.



*Deer not killed by a cougar*

#### 4) Conserving Natural Landscapes

**Bush Prairie HCP:** Biologist Tirhi reviewed the first three draft chapters and attended a review meeting with U.S. Fish and Wildlife Services (USFWS) on the draft Habitat Conservation Plan (HCP). This HCP will cover four state/federally listed species in the Bush Prairie (Tumwater) area of Thurston County. Public can follow the progress of this HCP here: [http://www.bushprairiehcp.org/draft\\_hcp.html](http://www.bushprairiehcp.org/draft_hcp.html)

**West Twin River 20/20 – Coastal Wetlands Grant Pursuit:** Biologist McMillan assisted Habitat Biologist Zitomer on a West Twin River project site visit, the target of a WDFW acquisition proposal. A site visit was arranged with USFWS staff members associated with the Coastal Wetland Grant Program. The USFWS personnel provided mentoring on how to focus the grant proposal to make sure it is eligible and to aid in the best ranking possible.



*West Twin River mouth – panorama, facing south*



*West Twin River property site visit March 18, 2019 with USFWS Coastal Wetland Grant staff members*



*West Twin River target property; this view is east of the “mole”*