ODFW Field Reports

Oregon Fish and Wildlife Commission
December 4, 2015

EAST REGION

Bruce Eddy, Region Manager

Size of wild Chinook salmon smolts influences age as adults

ODFW researchers monitoring wild, John Day River Chinook salmon have made an intriguing discovery. They found that size, condition, and timing of young salmon migrating to the ocean influences the age that they return to the John Day as adults. The larger and earlier migrating smolts tend to return as younger and smaller adults. Larger smolts return more often at age 3 (commonly referred to as a "jack" salmon) instead of larger age 4 or 5 adults. Ocean conditions remain the most important factor in determining the number of returning salmon, but not the age at which surviving salmon return to spawn. Rearing conditions experienced by juvenile salmon emigrating from freshwater influences the age they return from the ocean and therefore, the size of those that survive to return.

Our research suggests that just producing large smolts does not guarantee the best results. Research has previously shown that larger, hatchery Chinook smolts often survive better but mature at younger ages and return as smaller adults. These younger and smaller fish have lower productivity than older and larger adults and are not as popular with anglers. This research documents that the relationship between larger smolts and earlier returning smaller adults also occurs in wild populations. It suggests that changes that foster the production of smaller numbers of large smolts may ultimately decrease the age and size of returning wild adults to a system. This shift in age can reduce population diversity and future success.

Monitoring of the John Day River Chinook salmon suggested that spawner densities near carrying capacity limited smolt size, which in turn favored the production of older and larger returning adult salmon. Maintaining wild populations at or near carrying capacity with effective harvest management and restoration of freshwater habitat can do more than just produce more fish. High numbers of natural adults returning to spawn also maintains healthy population diversity by growing a wide range of smolt sizes that produce wild adults returning at ages 3, 4, and 5. This benefits future production while also increasing our chances of producing enough large adults for healthy fisheries.

Canyon Meadows Dam Removal

The Canyon Meadows Dam was constructed in 1963 to impound Canyon Creek, a tributary to the John Day River. The Oregon Game Commission (now ODFW) built and owned the dam on the Malheur National Forest and stocked the newly formed Canyon Meadows Reservoir annually to provide a local family angling opportunity.

Leaks were discovered in Canyon Meadows Dam as early as 1964. These leaks were monitored on and off through the 1970's and 80's and some repairs were made in an effort to stop them. In 1996, an inspection found a subsidence zone on the dam assocaited with the leaks. Because Canyon City and John Day are in the flood path of potential dam failure, ODFW was advised at that time to open the dam-gates permanently and empty the reservoir. Regardless of efforts to drain the reservoir permanently, high water events

occasionally overwhelmed the outlet and the reservoir filled.

ODFW sought the expertise of the U.S. Army Corp of Engineers, Oregon Water Resources Department, and Cascade Earth Sciences to help develop solutions for the failing dam. These studies concluded the dam was built on a pre-historic landslide; repairs would be costly and reconstruction at a nearby siting was not a possibility.

Staff worked with Grant County and local residents for years on what to do about the failing dam. Many in Grant County would have liked to see the dam fixed to restore the assocaited reservoir and fishery. Unfortunately, the Canyon Meadows Complex Fire erupted last August burning over 100,000 acres and the watershed surrounding Canyon Meadows Creek. As a result of the fire and its effects on the watershed above Canyon Meadows Creek Dam, projected maximum flood flows for Canyon Creek tripled and the State Dam Inspector declared Canyon Meadows Dam the "most dangerous dam in Oregon". The Department was left with no choice, but to remove it as soon as possible to prevent potentially dangerous flooding if it failed.

Staff from ODFW's John Day Screen Shop began removing the dam on October 23, 2015. Using two excavators and five dump trucks the crew worked 12 to 14 hour shifts, seven days a week, often excavating 220 dump truck loads a day. The dam is now removed and the stream channel has been fully restored.

WEST REGION

Steve Marx, Region Manager

Tui Chub Found in Diamond Lake – During annual trap netting in October to monitor trout growth and condition, Umpqua Fish District staff found a single tui chub. Staff and fisheries professors at Oregon State University confirmed the fish was a six-year-old tui chub.

The life history of tui chub in Diamond Lake shows they are prolific spawners that can outcompete stocked rainbow trout for food, disrupt the food chain and degrade water quality. In 2006, ODFW treated Diamond Lake and tributaries with rotenone to eradicate 90 million tui chub and restore the lake's water quality and rainbow trout fishery. Total Treatment cost was $5.6 million.

ODFW has conducted intensive, invasive fish monitoring each year since the rotenone treatment and in 2008 found golden shiners, another small, often used bait fish. Staff have sampled via electrofishing and/or conducted additional netting each year to evaluate golden shiner population numbers and look for tui chub. This year's detection was the first positive identification of a tui chub since the lake was treated.

After the discovery of a tui chub, Fish District staff reached out to partners, asking them to join in discussions beginning this winter to develop and implement a joint action plan for the next one to three years. Partners include the Umpqua National Forest, Oregon Department of Environmental Quality, and Douglas County. The plan would include monitoring for additional chub, tracking population changes if detected, and determining potential management options including possible changes to trout stocking strategies and/or implementing chub spawning disruption.

Questions have arisen as to whether the 2006 rotenone treatment effectively killed all fish in Diamond Lake. The lake was treated with five percent rotenone when it was no longer thermally stratified to ensure rotenone would distribute throughout the lake. Sentinal fish were placed around the lake in different habitats including deeper areas and areas near the underwater springs during treatment to verify rotenone was effective. All indications point towards a successful treatment.

Biologists believe the tui chub found in October was illegally introduced into Diamond Lake. The lake was historically fishless until ODFW began stocking it with rainbow trout in 1910. It was treated with rotenone in 1954 to rid it of tui chub which were again discovered in 1992. Tui chub are native to some Oregon waterbodies, but often invasive where not indigenous.

Tui Chub (File Photo – not the Diamond Lake specimen)

Willamette Wildlife Mitigation Program (WWMP) – The WWMP has recently completed its federal fiscal year (FY) 2015 acquisitions. In FY2015, eight properties were acquired and just over $9.5 million was spent to permanently protect approximately 1,290 acres. Property was acquired by ODFW, Confederated Tribes of Grand Ronde, Confederated Tribes of Warm Springs, Columbia Land Trust, Greenbelt Land Trust, and Friends of Buford Park.

The WWMP also recently completed their review and recommendation for projects to be acquired during FY2016. ODFW staff recommended six projects totaling over 1,200 acres with a funding request of approximately $8.6 million. Once completed, the wildlife habitat acquisitions will be permanently protected and property will be held by Yamhill Soil and Water Conservation District (SWCD), The Nature Conservancy, Polk SWCD, Columbia Land Trust, Confederated Tribes of Grand Ronde, and Confederated Tribes of Warm Springs.
The WWMP is funded by Bonneville Power Administration to protect wildlife habitat in the Willamette Basin through a 15-year Settlement Agreement (Agreement) that permanently settles wildlife mitigation responsibilities for the federal Willamette River Basin Flood Control and Hydroelectric Project.

Since the 2010 Agreement was signed, the WWMP has protected approximately 5,120 acres of the 16,880 acre acquisition target outlined in the Agreement. The funding solicitation for FY2017 projects will open in the new year.

INFORMATION AND EDUCATION

Rick Hargrave, Deputy Administrator

ODFW has expanded its social media channels beyond Facebook, Twitter and Instagram to include some platforms designed to reach different interest and age groups. Last month we added Pinterest, a social platform that allows users to find and save helpful information, especially of the do-it-yourself variety. We are posting fishing and hunting tips as well as recipes and DIY articles on Pinterest.

We have also added Snapchat, a mobile-only social platform designed to quickly share photos and videos that ultimately disappear after a few seconds or minutes. This platform is extremely popular among young people who tend to stay away from traditional social media platforms like Facebook and Twitter. We gained over 300 followers in a matter of hours when we went public with our account last month.

We have also expanded our use of Twitter to include live-tweeting coverage of Commission meetings and other events where public interest may rise to the level of more frequent updates.

OCEAN SALMON AND COLUMBIA RIVER PROGRAM

Tucker Jones, Ocean Salmon and Columbia River Program Manager

Historic high water temperatures and low flows during 2015 took a toll on white sturgeon in the mid and lower Columbia River basins.
The Pacific Northwest witnessed a historic year in 2015 for high water temperatures and low flows in the mid and lower Columbia River basins. These conditions resulted in a significant die-off of large, spawning-size white sturgeon and poor juvenile recruitment in many areas of the Columbia River Basin. To reduce additional stress on these fish during the high temperature event, managers closed the Columbia River upstream of Bonneville Dam and the Willamette River to angling for sturgeon, including catch and release.

Key Findings

- Targeted bi-weekly observations in the Willamette River and the Columbia River downstream of McNary Dam revealed significant numbers of dead white sturgeon (among other species) during the time of high water temperatures in 2015 (Table 1).
- A similar die-off of large white sturgeon during spring and summer was observed in the Fraser River in 1993 and 1994. That die-off was attributed to a combination of high temperatures, low dissolved oxygen levels and high levels of toxic contamination. Our monitoring in 2015 did not find low oxygen conditions near dead or dying sturgeon.
- Our data collected since 1997 have shown that successful spawning of white sturgeon within the basin is strongly related to increased flows.
- Our sampling for age-0 white sturgeon revealed historically poor recruitment levels upstream of Bonneville Dam in 2015 (Figure 1).

Conclusions

- High water temperatures during late spring and early summer can result in increased mortality rates for large, spawning-size white sturgeon.
- A poor snow-pack and little spring/summer precipitation can result in extremely low flows during the white sturgeon spawning season. These conditions can result in poor (or even nonexistent) annual recruitment.
- Under the current configuration and operation of the Federal Columbia River Power System, there is little flexibility to deal with or adjust for high temperature and/or low flow events.
- We are working with other state, federal and tribal fisheries co-managers to review 2015 hydro system operations to identify and recommend alternatives that could provide cooler water conditions, and to improve temperature and oxygen monitoring.

Table 1. White sturgeon mortalities observed during June and July 2015 (preliminary numbers subject to revision).

Area	Size Class: Unknown	Undersized 21-42" FL	Legal [1/] 43-54" FL	Oversized 55+" FL	Sum
Below Bonneville Dam					
Lower Willamette River	-	-	11	7	18
Columbia River below Bonneville	3	-	-	1	4
TOTAL	***3***	***0***	***11***	***8***	***22***
Above Bonneville Dam					
Bonneville Reservoir	-	-	1	4	5
The Dalles Reservoir	-	1	3	31	35
John Day Reservoir	-	-	-	57	57
TOTAL	***0***	***1***	***4***	***92***	***97***
GRAND TOTAL	***3***	***1***	***15***	***100***	***119***

1/ Legal size in Bonneville Pool, below Bonneville Dam and the Willamette River is 38-54 in FL. Legal size in The Dalles and John Day pools is 43-54 in FL.

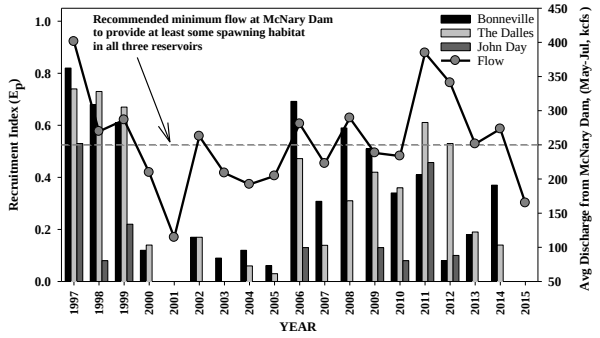
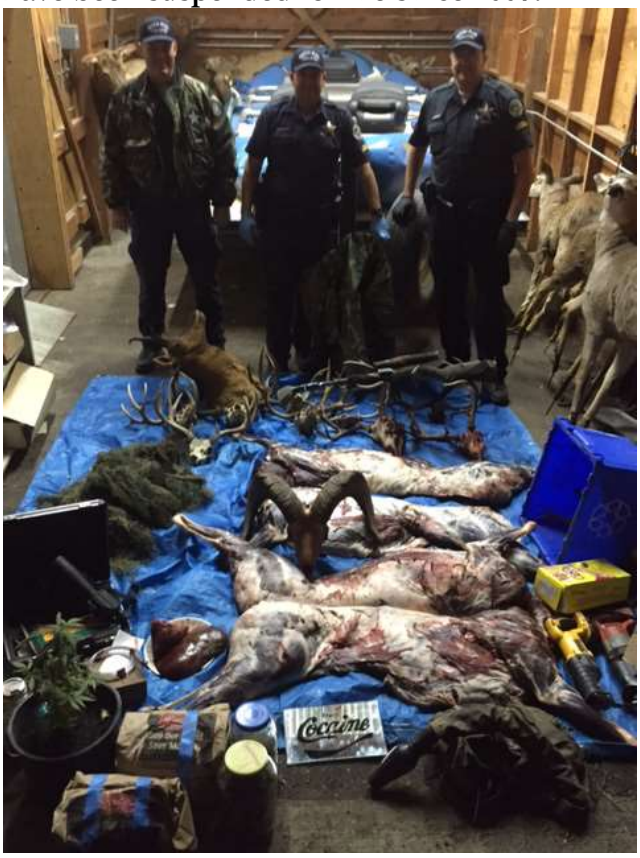


Figure 1. Relative recruitment of age-0 white sturgeon and average daily discharge from McNary Dam, 1997-2015.

OREGON STATE POLICE

Captain Jeff Samuels, Fish & Wildlife Division

A Fish and Wildlife Trooper received a report of a deer carcass hanging in the back yard of a residence in Wasco County. The Trooper was able to get permission from a neighboring property that allowed him to see the deer carcass. Fish and Wildlife Troopers contacted the residence, and the owner of the residence allowed the Troopers into the backyard where they located the deer carcass which was fresh. While in the backyard Troopers could see into a shop and saw another fresh deer carcass hanging along with two buck deer heads. The owner of the property said she did not have access to the garage, only her son did. Her son, a subject well known to local law enforcement, was not able to be located. Troopers applied for, and were granted, a search warrant for the shop, a travel trailer and a car on the premises. The search warrant was executed. In addition to the deer carcasses, big horn sheep horns, a .22 cal. rifle with a homemade suppressor, several sets of deer antlers, an Antelope mount and approximately 6.5 pounds of marijuana, methamphetamine and other paraphernalia was located and seized. The case will be sent to the Wasco County District Attorney for charges of **Felon in Possession of a firearm, PCS, DCS, MCS, the unlawful take and/or possession of 11 buck deer, Big Horn Sheep, and Antelope. The subject's hunting privileges have been suspended for life since 2007.**



Troopers conducted a spike elk wildlife enforcement decoy (WED) in the Saddle Mountain Unit (which is a controlled elk hunt, and has a 3 point or better antler restriction). A vehicle stopped after observing the WED, and three subjects got out with two rifles. Two of the subjects fired multiple times at the WED, and then the third subject also fired at the WED after being handed one of the rifles. Subsequent investigation revealed that two of the subjects had elk tags, but they were general season tags, and not Saddle Mountain tags. The third subject did not have a hunting license or elk tag, and was a convicted felon. Two of the subjects were cited and released for **Unlawful Taking Spike Elk (WED)**, and the third subject was cited and released for **Unlawful Taking Spike Elk (WED)** and for **Felon in Possession of a Firearm**. Two (2) rifles were seized

A Fish and Wildlife Sergeant followed up on a complaint that originated via Social Media. A subject had posted a photo of her boyfriend with a large buck deer. The date of the post and the location of the kill described by the subject started a lengthy discussion thread regarding the legality of the kill, which resulted in numerous people contacting OSP. The female and male subjects were contacted at a residence in Toledo. It was determined the buck was killed on 10/29/15 off of Cascade Lakes Hwy east of Mt. Bachelor by the male suspect. The location is in the Upper Deschutes Wildlife Management Unit, which was closed for deer hunting at the time. A set of 4x4 antlers were seized along with a 30-06 rifle and packaged deer meat. The male suspect was cited for **Taking Deer Closed Season**. The female was warned for **Aiding in a Wildlife Offense.**

A Fis and Wildlife Trooper was dispatched to a hatchery on the South Fork of the Klaskanine River for a report of a buck deer with its antlers entangled in a net. Upon arrival, the deer was struggling to get free from a large net covering the hatchery pools. One of the hatchery workers secured the deer's rear leg with rope while the Trooper used a long stick with a knife taped to the end to cut the net from the deer's antlers. Once free, the deer ran to the other end of the netted area and got stuck again. This time the deer lay down and allowed the Trooper and the hatchery tech to remove the net. With help lifting him back onto his feet, the deer ran away back into the woods.

A Fish and Wildlife Trooper responded to Siltcoos River to check salmon anglers. While at the Siltcoos River he observed three (3) anglers angling below the closure and near the dam. He contacted the Anglers and issued all three citations for **Angling Closed Area**. They were also warned for **Angling within 200 feet of a Fish way**.

Members of the Marine Fisheries Team conducted a two day Guardian patrol off of the Coast of Curry County during the Elk River area and Chetco River area commercial ocean salmon fisheries. Twenty-two commercial salmon trollers were contacted. The troopers issued three (3) citations for **Trolling Prohibited Method: Barbed Hooks for Salmon**, two (2) citations for No Commercial Fishing License, and one (1) citation for **Waste Commercially Caught Salmon**. One vessel was observed gaffing a salmon to bring it on board the vessel, only to then discard the gaffed (and now dead) salmon back into the water after apparently deciding it wasn't large enough to be worth keeping. The salmon was seized and donated to the food bank.

During the 2014 hunting season, the Mid-Coast Fish and Wildlife Team investigated numerous reports of illegally killed deer and elk along the Nestucca River. One case involved a bull elk that was shot and killed with only the head removed; leaving the meat to waste. During the 2015 deer season, Troopers received information about a

possible suspect which culminated in a search warrant on the suspect's home. During the warrant, Troopers located unlawful deer, elk and bear heads, a stolen trail camera, and a stolen cargo trailer (see attached photo). Among the elk heads was the head of the aforementioned elk killed in 2014. The subject was lodged in the Tillamook County Jail on charges of **Unlawful Possession Deer, Unlawful Possession Elk, Hunting While Suspended, Theft II, and Theft I.** Additional charges have been referred to the Tillamook County District Attorney's Office for possible prosecution.

CONSERVATION PROGRAM

Andrea Hanson, Oregon Conservation Strategy Coordinator

In response to the number of bat species whose populations are declining in Oregon and nationwide, ODFW staff have initiated monitoring efforts to determine species presence, distribution, and diseases in Oregon.

A pilot project was initiated in 2015 to determine bat species richness and seasonal use of two ODFW Wildlife Areas, E.E. Wilson and Tami Wagner. Acoustic monitoring devices were deployed to record bat echolocation calls and are checked biweekly to download data. The data is then analyzed to determine what species were detected. To date, 10 bat species have been recorded at the E.E. Wilson Wildlife Area, five of which are Strategy Species of conservation concern. The acoustic monitoring unit at the Tami Wagner Wildlife Area has recorded eight bat species, four of which are Strategy Species. Acoustic devices will continue to be monitored throughout the year to detect changes in use during different seasons. The goal of the project is to extend bat monitoring efforts to Wildlife Areas statewide.

Staff are also collaborating with interagency partners (e.g., U.S. Geological Service, U.S. Forest Service, Bureau of Land management) on monitoring for white-nose syndrome (WNS) in Oregon. WNS is a disease affecting hibernating bats, named for the white fungus that appears on their muzzle. It was first documented in New York in the winter of 2006, and has spread rapidly across the eastern United States and Canada. In the last nine years, WNS has killed more than 5.7 million bats.

In an effort to determine the locations and activity of bat hibernacula and develop an early detection system for the disease in Oregon, 13 hibernaculum sites were visited to conduct winter roost counts and sample for WNS. Caves, mines, and one structure from the Willamette National Forest, Deschutes National Forest, and the Lakeview BLM District were visited with collaborating agency biologists. These areas were chosen based on their geographic distribution and predicted likelihood of initial WNS appearance. In total, 247 bats were counted and 115 were sampled for WNS. Bats were sampled by swabbing the muzzles and wings of roosting bats. Additionally, 129 environmental samples were taken via swabbing of cave substrates. Samples were analyzed by the National Wildlife Health Center and the Oregon State University Veterinary Diagnostic Laboratory. Fortunately, all samples tested negative for the disease. Surveillance efforts will continue with partners for early detection of WNS in Oregon.

Photo Credit: USFWS

END OF FIELD REPORTS FOR December 4, 2015