Agenda Item Summary

BACKGROUND

The proposed modifications would amend white sturgeon spawning angling sanctuary areas and Oregon sportfishing regulations for angling for white sturgeon upstream of Bonneville Dam. Issue 1 discusses proposed changes to the effective dates for spawning sanctuaries in Bonneville, The Dalles, and John Day Reservoirs in the Columbia River, and a proposed extension of the downstream boundary of the sanctuary in the John Day Reservoir. Issue 2 discusses the potential closure of white sturgeon retention fisheries in joint waters of the Columbia River upstream of McNary Dam to the Oregon/Washington state line.

The proposed changes are needed to:

- Improve consistency in white sturgeon angling regulations
- Increase protections for spawning white sturgeon in the impounded reaches of the jointly managed Columbia River
- Maintain concurrent regulations with the State of Washington who are looking at identical regulation changes

White sturgeon spawning angling sanctuaries currently exist in several locations. These sanctuaries consist of a prohibition on angling for sturgeon within specific spatial and temporal boundaries, and are intended to limit overall handling of white sturgeon that are preparing to spawn, actively spawning, or recovering from a recent spawning event. The lower Columbia River spawning sanctuary downstream of Bonneville Dam was originally adopted in 1996 and extended from the dam downstream 4.5 miles from May 1 to June 30 annually. In 2010, the sanctuary was extended downstream an additional 4.5 miles (9 miles total) to U.S. Coast Guard Navigation Marker 82/Fir Point, and the duration of the sanctuary period was extended through August 31. The Willamette River spawning sanctuary was adopted in 2010 and extended from Willamette Falls Dam downstream one mile to the I-205 bridge near Oregon City. In 2014 it was extended downstream an additional 5.5-miles (6.5 miles total) to the Lake Oswego/Oak Grove railroad bridge. Both the lower Columbia River and Willamette River sanctuaries are currently in effect from May 1 – August 31.

In the Columbia River upstream of Bonneville Dam, a spawning sanctuary in Bonneville Reservoir was adopted in 2014 from The Dalles Dam downstream 1.8 miles; in The Dalles Reservoir a sanctuary was adopted in 2006 and extends from the John Day Dam downstream 2.4 miles; and in the John Day Reservoir a sanctuary was adopted in 2006 from McNary Dam downstream 1.5 miles. All three sanctuaries are currently in effect May 1 – July 31.

Public Involvement

- 22 May 2019 - Public Meeting in The Dalles, Oregon
- 11 June 2019 – Public Meeting in Kennewick, Washington
- 12 June 2019 – Public Meeting in Hermiston, Oregon

ISSUE 1

MODIFY CURRENT ANGLING REGULATIONS FOR WHITE STURGEON SPAWNING SANCTUARIES IN BONNEVILLE, THE DALLES AND JOHN DAY RESERVOIRS OF THE COLUMBIA RIVER.

ANALYSIS

Columbia River white sturgeon populations in reservoirs above Bonneville Dam face a number of challenges to population health and sustainability. Young-of-year surveys suggest intermittent and/or limited reproduction ("recruitment") most years, with occasional abundant water years producing strong year classes that support the population (Table 1). This is particularly apparent in John Day Reservoir where there has been measurable recruitment in only 8 out of the last 22 years (36%), with no measurable recruitment since 2012. Also, mortality events in 2015 and 2018 appeared to disproportionately impact the white sturgeon larger than the legal slot limit and approaching or at reproductive age (2015: 96% were > 55". 2018: 100% were > 55"). These mortality events likely occurred due to a combination of factors, but tended to occur following the white sturgeon spawning period, a stressful and rigorous period, and in conjunction with abnormally high summer river temperatures; large sockeye salmon die-offs also occurred during the 2015 event, but it is unknown if the two are related. The metabolic demands on a mature female white sturgeon to produce hundreds of pounds of eggs are immense, increasing risk of lethal and sub-lethal effects on normally resilient white sturgeon during and immediately following their spring spawning period.

Table 1 - Recruitment index (proportion of sets with at least 1 age-0 fish) for age-0 white sturgeon in Columbia River reservoirs 1997-2018.

Year	BON	TDA	JDA	MCN
1997	0.82	0.74	0.53	
1998	0.68	0.73	0.08	
1999	0.61	0.67	0.22	0.08
2000	0.12	0.14	**0.00**	**0.00**
2001	**0.00**	**0.00**	**0.00**	**0.00**
2002	0.17	0.17	**0.00**	0.06
2003	0.09	**0.00**	**0.00**	**0.00**
2004	0.12	0.06	**0.00**	**0.00**
2005	0.06	0.03	**0.00**	0.03
2006	0.69	0.47	0.13	0.06
2007	0.31	0.14	**0.00**	0.06
2008	0.59	0.31	**0.00**	0.06
2009	0.51	0.42	0.13	0.06
2010	0.34	0.36	0.08	**0.00**
2011	0.41	0.61	0.46	0.26
2012	0.08	0.53	0.10	
2013[2]	0.18	0.19	**0.00**	
2014	0.37	0.14	**0.00**	
2015	**0.00**	**0.00**	**0.00**	
2016	0.10	**0.00**	**0.00**	
2017	0.26	0.47	**0.00**	
2018	0.21	0.08	**0.00**	

The proposed temporal modifications to the angling sanctuaries would extend the duration of the spawning sanctuary in Bonneville, The Dalles and John Day reservoirs by one month to include all of August (i.e. – May 1 thru Aug 31). The spatial extent of the John Day Reservoir spawning sanctuary would be extended from the McNary Dam downstream 13.5 miles to a line between the grain elevators at Patterson Ferry Road and a marker on the Washington shore at the west end of an old concrete foundation. These changes will increase protections for mature white sturgeon while they complete and recover from the spawning period.

Expanded angler creel surveys conducted in summer and fall since 2017 suggest that extending the spawning sanctuary period to include August will reduce total handle of oversized white sturgeon by an average of 13%, 8% and 29% per year in Bonneville, The Dalles and John Day reservoirs, respectively. These percent reductions are likely to have an outsized protective effect since they come during the critical post-spawn recovery period. Reducing handling of oversized white sturgeon would likely substantially reduce potential lethal and sub-lethal effects during this vulnerable period.

Past research demonstrates that sub-lethal effects from angling pressure during this period can also occur. White sturgeon spawn no more frequently than every three to five years with longer intervals likely in food and/or water limited systems (like the John Day Reservoir). However, once they reach maturity, they can live and reproduce for several decades. Prior research has demonstrated that increased stress during the spawning period can cause a female white sturgeon to reabsorb her eggs, a process called atresia. Research has shown that stress levels from simulated angling and handling can reach levels sufficient to trigger atresia. Reducing total handle of mature white sturgeon would likely reduce the accumulation of stress leading to egg resorption.

Results from the first year of a long-term fish tracking study suggest that expanding the spawning sanctuary area in the John Day Reservoir would protect a substantial proportion of the mature white sturgeon females and nearly all of the mature white sturgeon males. The department and collaborators captured and tagged mature, ripe, male and female white sturgeon with acoustic transmitters in the McNary tailrace (uppermost area of the John Day Reservoir) starting in spring 2018. Receivers for tracking the tags were placed at intervals throughout John Day Reservoir (Figure 1) starting in spring 2018. Most mature, ripe females (87%), and nearly all mature, ripe males (99.7%), spent a substantial portion of the spawning period (May–August) in the area covered by the proposed spawning sanctuary modification (Figure 2). This tracking data suggests that extending the spawning sanctuary in the John Day Reservoir in both time and space would protect males 99.7% of the period and females 87% of the period.

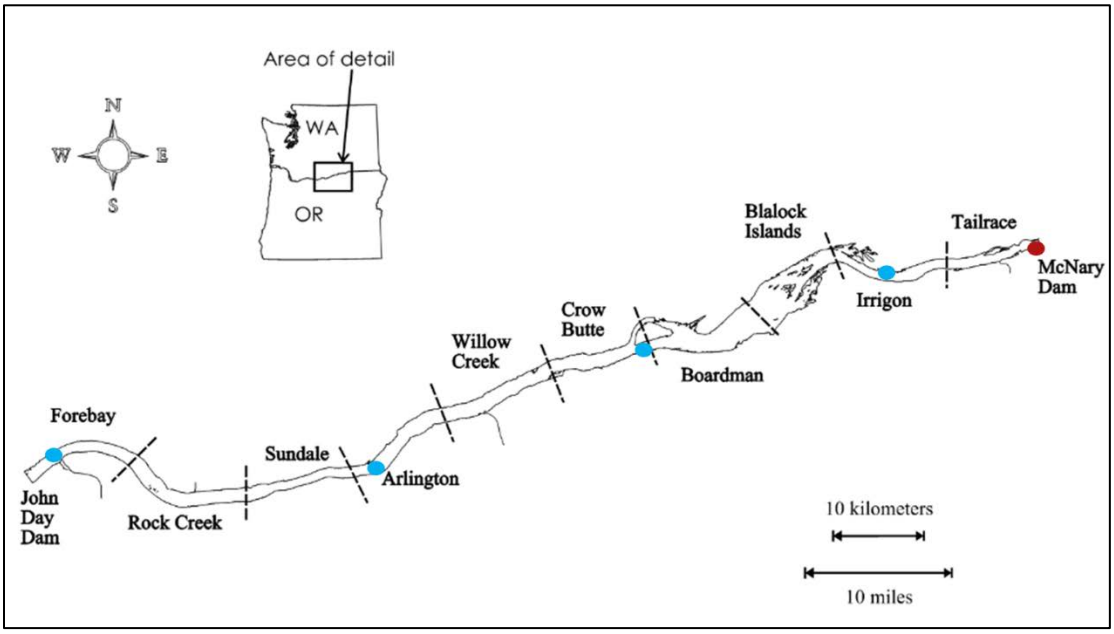

Figure 1. Fish Tracking study area in the John Day Reservoir, Columbia River, Oregon. Blue and red dots are location of tracking receivers.

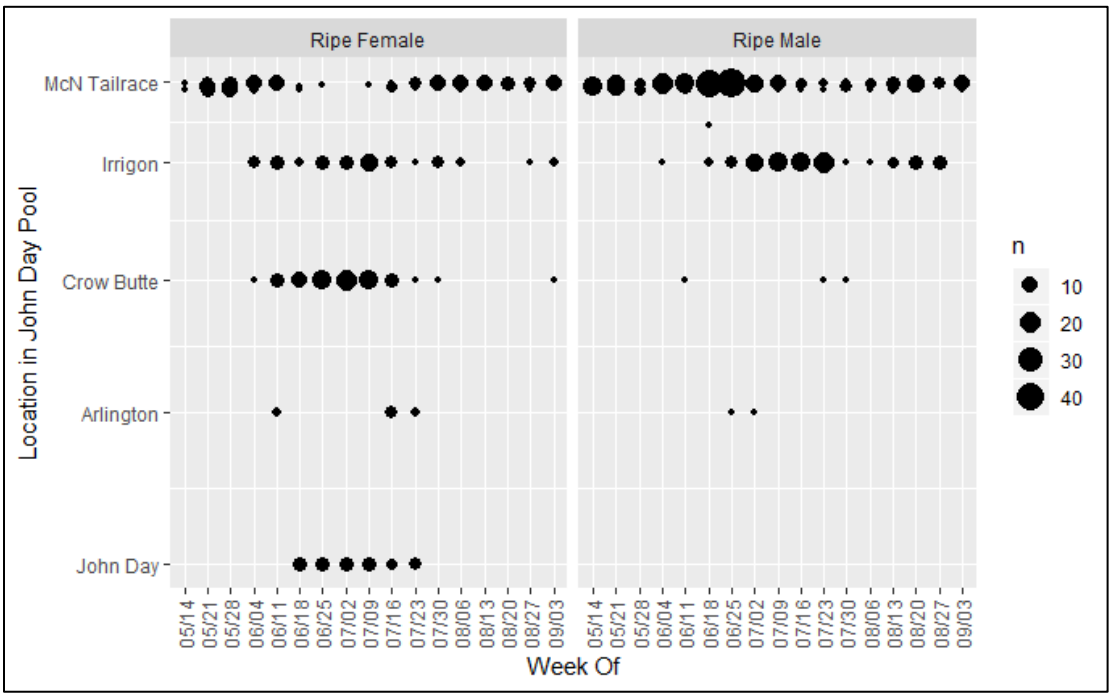

Figure 2. Number of detections of male and female white sturgeon at receiver locations in the John Day Reservoir, Columbia River, Oregon.

Many factors influence the spawning success of white sturgeon, including but not limited to river flows, water temperatures, channel morphology, available food resources, and stress. The department cannot be certain that increasing the spatial and temporal scope of these spawning sanctuaries will result in measurable increased recruitment. However, the limited recruitment being observed, especially in John Day Reservoir, strongly suggests that additional protective actions are warranted. The proposed actions will reduce the overall handling, and as a result should also lower overall stress on spawning white sturgeon. However, if increased spawning success is not observed, additional actions may be necessary.

ISSUE 2 — MODIFY CURRENT PERMANENT RULES FOR WHITE STURGEON ANGLING IN MCNARY RESERVOIR OF THE COLUMBIA RIVER.

ANALYSIS

Currently, regulations permit white sturgeon retention from February 1 – July 31 in the Columbia River and tributaries from Priest Rapids Dam downstream to McNary Dam and the Snake River from the mouth to Ice Harbor (i.e. McNary Reservoir). However, there are no regular population assessments in McNary Reservoir, nor is there any real-time monitoring of harvest (e.g. creel surveys) beyond catch cards. Catch cards have a time lag, a low response rate, and are often incomplete. The two most recent stock assessments completed in McNary Reservoir (1995 and 2011) indicate a small population, 8,250 and 9,241, respectively a substantial proportion of which are downstream hatchery migrants from stockings in Rock Island Reservoir. In 2011, 31% of the fish harvested in McNary Reservoir were marked hatchery fish from Rock Island Reservoir. Catch card data suggests conservative annual exploitation rates of 10-25%, and actual rates would be higher if catch cards are underestimating actual harvest.

This population is relatively small, and the population size and harvest are not regularly monitored. While uncertain, estimated harvest rates are at or above those for larger nearby populations, and no real-time monitoring of catch is available to provide

increased certainty on actual fishery mortality. Staff from Oregon and Washington believe that precaution is warranted with respect to this population and that prohibition of retention be implemented until resources are available to adequately monitor both the population status and harvest amount.

The proposed modifications to angling regulations would close sturgeon retention fisheries in McNary Reservoir but would retain catch and release angling opportunities. This would continue to provide angling opportunity while protecting a small and largely unmonitored population.

OPTIONS

1. Adopt modifications to existing permanent white sturgeon angling regulations as proposed in Attachment 3, which would increase the temporal scope of sturgeon angling sanctuaries upstream of Bonneville Dam, increase the spatial scope of the sturgeon spawning sanctuary in the John Day Reservoir, and close retention fisheries in McNary Reservoir.

2. No action at this time.

3. Other proposed modification to OAR 635-023-0095.

STAFF RECOMMENDATION

1. Adopt modifications to existing permanent White Sturgeon angling regulations s as proposed in Attachment 3.

DRAFT MOTION	I move to adopt the amendment to OAR 635-023-0095 as proposed in Attachment 3.
EFFECTIVE DATE	Upon Filing