

# Incident Report Concerning the Large Number of over Legal-Size White Sturgeon Mortalities in The Dalles Reservoir during late July, 2013

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## The Problem

During the month of July, an abnormal number of over legal-size (greater than 54 inches fork-length) White Sturgeon carcasses were found along the banks of The Dalles Reservoir (Pool). The first one of these fish was encountered by Washington Department of Fish and Wildlife (WDFW) Enforcement Officer Daniel Bolton on July 12, 2013, at the Maryhill State Park boat ramp. That fish appeared to have been dead for about a week. On July 24, 2013, reports of dead sturgeon begin coming in to WDFW Enforcement Sergeant Jeffery Wickersham. WDFW Enforcement Officer Bolton checked the Washington shoreline from the road from the John Day Dam to Miller Island finding one dead undersized sturgeon near Miller Island that looked fresh. On the same date, Oregon State Patrol (OSP) Sergeant John Katzenstein, had observed two dead oversize sturgeon on the islands at Preachers Eddy and one floating at the mouth of the Deschutes River. He had received a report from an Oregon State Department of Fish and Wildlife (ODFW) fish sampler that sport fishers had found eight to twelve oversize dead sturgeon in The Dalles Pool. According to ODFW Biologist Tucker Jones, some members of the public reported net marks on the carcasses they encountered, while others made statements like, "It looked like someone was trying to chop their heads off." The next day, July 25, 2013, WDFW Enforcement Officer Bolton and Goldendale Police Officer Dwayne Matulovich conducted a boat patrol from the Maryhill boat ramp to below Miller Island, up the Oregon shore to the John Day Dam Boat Restriction Zone (BRZ) and down the Washington shore to the point of beginning at the Maryhill boat ramp. They documented 25 dead sturgeon of which 24 appeared to be over legal-size. The fish observed did not display any damage that matched to the comments made by the public. Documentation on each fish included an estimated length, an estimated time of death, photographs, and a latitude/longitude position). The details on each fish are provided in the WDFW Incident Report Number WA-13-008153 provided in Appendix A. On August 4, 2013, WDFW Enforcement Officer Bolton interviewed Donald Lampman (steelhead fisher). Mr. Lampman reported that two weeks earlier dead and dying crawfish were washing up on the beach at the same location below the John Day Dam. On August 5, 2013, WDFW Enforcement Officers Dan Bolton and Gary Orr and WDFW Scientific Technician 3 Mike Wall patrolled the entire length of The Dalles Pool (both shorelines). Seventeen oversized dead sturgeon were observed (at locations different than the July 25<sup>th</sup> fish) in a state more decomposed than the ones seen on July 25<sup>th</sup>. Only five of these fish could be scanned for PIT tags (no tags detected). Appendix B provides some photographs of the fish observed (many more are available). The ones beached further on the bank have a reddish color due to sun exposure. The ones in the water tend to retain a more normal coloration.

Two dozen over legal-size were observed in one day. If one assumes all observations were of different individuals, the number reaches four dozen. No doubt not every dead sturgeon was accounted for, as some could be submerged or under brush or behind rocks and logs hidden from the observer.

## Possible Causes

### Sport Fisheries

From May 1 through July 31, no fishing for sturgeon is allowed from John Day Dam downstream 2.4 miles to the west end of the grain silo at Rufus, Oregon. However, sturgeon fishing is going on in the remainder of the pool. The sturgeon sport retention guideline for this pool is only 300 legal-size fish. After 7 months of open season, the sport fishers have barely caught a third of their guideline. Only 10 oversize sturgeon were recorded by the creel surveyors as being caught and released during the past month. The thorough monitoring of this fishery by creel surveyors and enforcement officers makes it unlikely that over two dozen oversize sturgeon would succumb to sport related fishing mortality. During the examination of the carcasses, no hooks, leaders, or other tackle was seen externally or protruding from the mouth, gills, or vent. Attempts to find ingested hooks using metal detectors were unsuccessful due to the surroundings (basalt rock, etc.) and condition of the fish.

### Commercial Fisheries

The Tribal summer set net and platform/hook and line fisheries were going on in The Dalles Pool during July. Sturgeon sales were not allowed. While large sturgeon may be entangled by set [gill] nets, they often break through or away from the light small mesh gear used in salmon fishing. None of the carcasses examined showed net marks, or torn and damaged fins. The number of dead oversize sturgeon seen this month is way more than what was seen in previous years with similar tribal commercial fishing effort.

### Poaching

Poachers will usually strip the eggs for the illegal caviar market. Such fish are often tied off in remote locations. The fish examined were intact, with no ligature marks.

### Predators

Stellar Sea Lions are known to attack and kill oversize sturgeon. This of course is something one might suspect as a cause below Bonneville Dam, but the likelihood of these large pinnipeds being above two major hydropower dams is unlikely, especially when most sea lions move out of the Columbia to their breeding grounds along the Pacific Coast well before July.

### Toxins

Standard organ sample protocols for toxins were not feasible given the decomposed state of the fish, nor were the enforcement officers, or creel surveyors equipped to take and properly transport such samples. If pollution is the cause of this die off, one would expect to see a broader range of fish species and sizes affected. The apparent die off of the crayfish may or may not have been linked to the die off of oversize sturgeon.

## Hydropower Dam Operations

On July 25, 2013, the John Day Project Chief Fish Biologist Miroslaw Zyndol reported to Tucker Jones of ODFW, that no unusual turbine operations (including returning turbines back to service after an extended outage) had occurred since July 15<sup>th</sup>, and in fact a constant number of turbines had been operating since then. Since the fish observed could have been dead prior to July 15<sup>th</sup>, there should be review of dam operations for the first half of July. The observations by the public, while not confirmed by subsequent investigations by enforcement and creel surveyors, do implicate dam operations.

Outflow and Spill levels at John Day Dam were similar to past years for the period of 19 June through 7 August, 2013. The constant spill at the dam did result in dissolved gas percentages above 100%. Temperatures in the John Day Dam tailrace were around 20 degrees Celsius. While that is warm, it is not a level much different than the 2003-2012 daily average water temperatures.

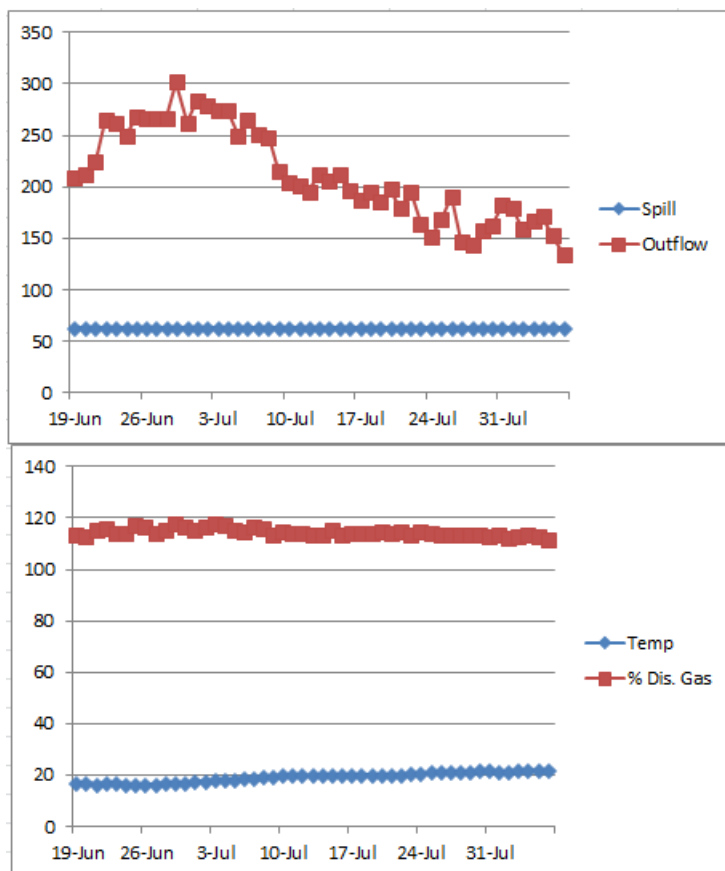


Figure1. Daily average spill (kcs) and outflow (kcs) from John Day Dam; temperature (°C) and percent dissolved gas for the John Day Dam tailrace (JHAW)

<http://www.cbr.washington.edu/dart/metadata/river>

## Spawning Mortality

Fish undergoing the stress of spawning can die. Given that such massive die off during or following the spawning season hasn't been observed in the past, it is unlikely this is the cause.

## **Conclusion**

There is no identified cause for the death of two to four dozen (even more) over legal-size White Sturgeon in The Dalles Pool during July 2013. Options to examine the carcasses have faded, so additional research into the cause is restricted. There remains the need to investigate further the early July dam operations. Fish managers and dam operators should also look outside of the usual suspect operational or environmental factors. Perhaps there was something unusual about the operation of a navigational lock, a barge or ship leaking chemicals, or some accidental spill or discharge of a hazardous material at the dam facility. The loss of this many mature fish from a modest size population of long-lived fish is significant. It will take years for younger sturgeon to grow into mature spawning fish.

## **Acknowledgement**

The information in this report came mostly from the investigations done by enforcement officers. The state and tribal fishery monitors also played a role in gathering these facts. Various fish biologists and managers have looked into this incident, and shared their results with each other. I hope that I have properly reflected their findings in this report.

Olaf Langness

Fish and Wildlife Biologist 3

Washington Department of Fish and Wildlife

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August 8, 2013

# Appendix A:

## WDFW Enforcement Incident Report WA -13-008153



### Washington Department of Fish & Wildlife Police Incident Report Form

Incident Number <b>WA-13-008153</b>		Related Case Number	
Incident Type <b>FRESHWATER FISH VIOLATION</b>		Incident Occurred On/Between <b>7/24/2013</b>	
Area <b>COL R-DALLES DAM TO JOHN DAY DAM (529)</b>		Area 2	
Address		Address 2 / X-Street	
City	State	County <b>Klickitat</b>	Zip Code
<b>INVOLVED PERSON(S)</b>			
<b>WDFW OFFICERS</b>			
Primary Officer <b>DAN BOLTON</b>		Work Address / Phone <b>DEPARTMENT OF FISH &amp; WILDLIFE 1701 SOUTH 24TH AVE YAKIMA WA 98902-5720</b>	
		<b>509-480-9879</b>	

WDFWIRF-02

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Washington Department of Fish & Wildlife Police  
Incident Report Form

Incident Number

WA-13-008153

Related Case Number

NARRATIVE

Created by: DAN BOLTON

Date Created: 09/07/2013

On 7/12/2013 I located a dead oversize sturgeon at the boat ramp at Maryhill State Park. I towed this sturgeon out into the channel to get it out of the boat ramp and swim area of the park. This sturgeon I believed was dead for about a week.

On 7/24/2013 Sgt Wickersham called me and informed me about reports of dead sturgeon in the Dalles Pool. I called OSP Sgt John Katzenstein (541) 993-0692 who told me that he had a third hand report from a fisherman who reported to the state fish sampler finding eight to twelve oversize dead sturgeon in the Dalles Pool. Sgt Katzenstein did not know the name of the reporting party. Sgt Katzenstein said that he did see two dead oversize sturgeon on the islands at Preachers Eddy and one floating at the mouth of the Deschutes River.

On 7/24/2013 I checked the Washington shoreline from the road from the John Day Dam to Miller Island finding one dead undersize sturgeon that looked fresh near Miller Island.

On 7/25/2013 Goldendale Police Officer Dwayne Matulovich and I conducted a boat patrol to check the shore line for any dead sturgeon. We started our patrol from Maryhill boat ramp down stream. We checked from the Maryhill boat ramp to the down stream of Miller Island, up the Oregon shore to the John Day Dam BRZ and down the Washington shore to the point of beginning at the Maryhill boat ramp. We located and documented 25 dead sturgeon on both shores that we photographed, took Lat/Long positions of, estimated times of death and estimated lengths. Of the 25 dead sturgeon there were 24 sturgeon that looked to be oversize.

We recorded the following information for each sturgeon that located.

Sturgeon #1 -Maryhill Park and In-Lieu  
9' / dead 1 week

Sturgeon #2 -Maryhill Park and In-Lieu  
7' to 8' / dead longer then #1  
#1 and 2 at 45. 40.6436 N / 120.51.2615 W

Sturgeon #3 -Below Maryhill above Bob's Point  
6' / dead one week  
45.40.6167N / 120. 51.2615W

Sturgeon #4 Below Maryhill above Bob's Point  
2' undersize / dead one week

Sturgeon #5  
unknown size, too rotten  
45.40.5069N / 120. 51.4981 W



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NARRATIVE

Sturgeon #6 -South side of Bob's Pt  
5' to 6' / dead one to two weeks  
45.40.0045N / 120.52.1085 W

Sturgeon #7 - South side of Bob's Pt  
5' to 6' / dead three weeks  
45.40 0585N / 120. 52.2012 N

Sturgeon #8 -  
unknown size -dead two to four weeks

Sturgeon #9 -Miller Island /Main shore  
5' to 6'

Sturgeon #10 Miller Island /Main shore  
5' to 6'

Sturgeon #11 -Next to green day board 27  
7'to8' / dead two to three weeks  
45.39.8146N / 120.53.2163

Sturgeon #12 - Washington shore, Miller Is , Hells gate  
6' to 7' / dead two to three weeks  
120.53.7750W / 45.39. 7546 N

Sturgeon #13 - Washington shore, Miller Is, Hells gate  
7' / dead one to two weeks  
45.39.7546 / 120. 53.7750W

Sturgeon #14 - On Miller Is, NW side of Hells gate  
7' / dead two to three weeks  
45.39.4014N / 120.54.1878 W

Sturgeon #15 -Oregon shore east end of Miller Is  
6' / dead two weeks  
45.39.0458 / 120.52.7020 W

Sturgeon #16 - Oregon shore west of Biggs, off boat ramp  
6' / dead two to three weeks  
45.93.8723 N / 120. 51.2569W

Sturgeon #17- Oregon shore, 30 yards east of Biggs boat ramp  
6' to 7' dead two to three weeks  
45.40.1926N / 120. 50. 5045 W



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Sturgeon #18- Oregon side, on Island  
8' / dead two weeks  
45.41.2758N / 120.46.8116 W

Sturgeon #19- Oregon side, on Island  
6' / dead three to four weeks  
45.41.3789N / 120.46.4155W

Sturgeon #20- Oregon side, 200 yards below day mark #42  
7' / dead one to two weeks  
45.41.4771N / 120.46.0044W

Sturgeon #21- Oregon side west of black and white diamond marker nav marker  
6' / dead two weeks  
45.42.2350N / 120.43.4172 W

Sturgeon #22- Washington shore in trees between tribal scaffold  
6' to 7' / dead two to three weeks  
45.42.5569N / 120.43.5068 W

Sturgeon #23- Washington shore east end of large cottonwood stand  
8' to 9' / dead three to four weeks  
45.42.2700N / 120.44.4558W

Sturgeon #24- Washington shore under brush  
oversize, skeleton with tissue  
45.42.2700N / 120.44.4558W

Sturgeon #25- Washington shore down stream of solar panels on railroad across from day mark 42  
6' / dead two weeks  
45.41.7508N / 120.46.2687W

Note: My time of death for each fish is just my best estimates and may vary for each fish depending on environmental factors. Water temperatures were 69.5 and 70 degree on 7/25/13.

On 8/4/2013 I was patrolling just below the John Day Dam when I contacted a Steelhead fisherman I identified as Donald Lampman (509) 941-3528. Lampman reported that sometime about two weeks ago he was fishing and observed dead and dying crawfish washing up on the beach at the same location below the John Day Dam. Lampman said he was throwing some of the crawfish that were still alive back into the water but they would wash back up on the shore line and there were hundreds that were dying.

On 8/5/2013 Officer Orr, WDFW Biologist Mike Wall and I patrolled the entire Dalles Pool on the Washington and Oregon shore lines. We located seventeen oversize dead sturgeon that were more decomposed than





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**NARRATIVE**

any that I observed on 7/25/13. We did not locate any freshly deceased sturgeon on this patrol.

**ADMONITION**

I certify under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct to the best of my knowledge.

\_\_\_\_\_  
Officer Signature

\_\_\_\_\_  
Badge #

\_\_\_\_\_  
Location

\_\_\_\_\_  
Date

# Appendix B:

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## *Sample Photos of Carcasses Observed*

*(Daniel Bolton, WDFW Enforcement Officer unless otherwise noted)*











(Oregon State Patrol (OSP) Sergeant John Katzenstein)





(Oregon State Patrol (OSP) Sergeant John Katzenstein)