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UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF IDAHO

WESTERN WATERSHEDS PROJECT, Plaintiff, v. U.S. FISH AND WILDLIFE SERVICE, NOAA FISHERIES, U.S. FOREST SERVICE, JACK WHITWORTH, and WHITWORTH RANCHES, INC**,** Defendants.	No. 4:12-cv-197-BLW **DECLARATION OF ROBERT HOUSE**

I, Robert House, declare:

1. My name is Robert House and I reside in Eagle, Idaho. The following matters are personally known to me, and if called as a witness I would and could truthfully testify thereto.

I. BACKGROUND AND QUALIFICATIONS

2. I received a BS in Biology, majoring in Fisheries and Wildlife, from the

University of Washington in 1970 and following graduation I attended graduate school at Utah State for one year. I worked for the U.S. Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM) from 1971 to 1997 as a fish and wildlife biologist, finishing my government career as BLM's National Anadromous Fish Coordinator. From 1997 to May 2001, I worked as an aquatic scientist and fisheries biologist for consulting firm Shapiro & Associates, working for state and federal agencies, industry, and environmental clients on a wide range of fisheries issues. My work dealt mainly with salmonids and the Endangered Species Act (ESA) in the Pacific Northwest. In June, 2001, I started my own consultant business, BioHouse; and since February, 2002 some of my work has been for BioAnalysts, a Boise-based consulting firm, as a Senior Fisheries Scientist.

3. I was an American Fisheries Society certified fish biologist (#2196) with particular expertise in forest/range habitat relationships with resident and anadromous salmonids, input to National Environmental Policy Act (NEPA) and ESA analyses, stream and riparian restoration, and stream inventory/monitoring. For most of my more than 40 years as a professional fish and wildlife biologist my work has concentrated on anadromous and resident salmonid research and habitat management in Idaho, Oregon, California, Alaska, and Washington.

4. A description of my educational and professional work, including a list of publications, is attached as Exhibit A.

II. BASIS FOR OPINION

5. I was retained to provide my expert opinion on the impacts from cattle grazing in the upper Camas Creek watershed, including Camas Creek (upstream from and

including the exclosure at Meyers Cove), Castle Creek, and lower Furnace Creek. These streams contain combinations of spring Chinook salmon (*Oncorhynchus tshawytscha*), steelhead (*O. mykiss*), and bull trout (*Salvelinus confluentus*), all federally protected under the ESA.

6. In preparing this declaration, I reviewed the 2010 U.S. Fish and Wildlife and National Marine Fisheries Service Biological Opinions on livestock grazing on the Camas Creek Allotment in the Camas Creek Watershed on the Salmon-Challis National Forest. I also reviewed the Salmon-Challis National Forest's 2010 Biological Assessment for the same allotment. I also visited the Camas Creek allotment and observed this year's cattle use and impacts, as described in detail below.

7. In preparing my testimony, I have relied on my professional training and experience and my familiarity with scientific literature as well as agency documentation, guidelines, and protocols. My professional experience covers 40 years of work for the USFWS, BLM, and as a fisheries consultant, including my assignment as BLM's National Anadromous Fish Coordinator. In that position, I was responsible for national level policy and guidance of the anadromous fish program for the BLM while stationed in Boise, Idaho. Duties included providing training and technical support, reviewing plans, developing management strategies, identifying and designing research, and coordinating with the National Marine Fisheries Service (NMFS) and the U.S. Forest Service (USFS) system and its research branches. I was a member of the President's Northwest Forest Plan (FEMAT 1995), the joint BLM/USFS Pacific Northwest Anadromous Fish Strategy (PACFISH 1993), and the Aquatic/Riparian Science Team of the Interior Columbia Basin Ecosystem Management Plan (ICBEMP 1997).

8. I have extensive training (both as a trainer and trainee) and experience with, and thorough understanding of, the requirements, concepts, guidelines, and processes for conducting analyses of fish habitat under NEPA and the ESA. My work, as a team member of FEMAT, PACFISH, and ICBEMP, was instrumental in developing standards for stream inventories and monitoring, biological assessments, and watershed analyses. I was a member of a BLM/USFS team that developed riparian and aquatic habitat monitoring protocols for listed salmon in the upper Columbia River Basin.

9. I've inventoried many miles of stream over many years in my career, using numerous techniques and protocols as they have evolved over the years. These inventories were conducted on trout and salmon streams in Alaska, Northern California, coastal and inland Oregon, and in Idaho and Montana. I've specifically conducted spawning ground counts for over 20 years on miles of coastal and inland streams, specifically for Chinook and coho salmon, steelhead, and bull, rainbow, brook, brown, and various species of cutthroat trout. For 12 years (1981 to 1993), I organized and conducted weekly spawning ground counts on 29 miles of stream (10 different streams) in the Alsea and Nestucca River basins to determine changes in numbers of salmon and steelhead redds and adults after stream restoration. Therefore, I have developed expertise in identifying and predicting the age of redds.

10. I have also developed the expertise to determine what is good or bad riparian and aquatic habitat for spawning and rearing salmonids. Streams support the highest numbers of salmonids when they: are bordered by late seral stage vegetative conditions; have a high percentage of stable streambanks (overhanging and undercut); have a high percentage of quality pool habitat (at least 50%); contain spawning gravels in low gradient

riffles and pool tails with low amounts of fine sediment; and have a complex channel with large amounts of large woody debris and off-channel and backwater areas.

11. I have also developed expertise at identifying the impacts of livestock grazing on riparian habitat and redds. It is fairly straightforward to discern whether trampling activity was caused by domestic cattle versus other wildlife such as elk or deer, because cattle hoof prints are larger and rounder than elk or deer hoof prints, which are more pointed. Also, cows leave an ever-present calling card in the form of their cow pies, which are distinct from elk or deer droppings. The condition of cow pies also gives a sense of how recently cows were present.

III. VISIT TO CAMAS CREEK ALLOTMENT

12. From September 10 to 12th, 2012, I visited the Camas Creek allotment and observed riparian and stream habitat conditions in the Meyers Cove exclosure, in Camas Creek, and in Castle Creek. I also observed a number of this year's Chinook salmon redds, which appeared to have been constructed from early August to early September, judging by algae cover of the gravel and cobble substrate.

13. The objective of my trip to the allotment was to identify any redds that I observed, and to assess any impacts of cattle grazing on riparian and aquatic habitat, as well as redds.

14. I have attached several of the photographs taken by my companions and me during the trip. I was present at each of the sites photographed when each of these photographs was taken, and I attest that they accurately represent the conditions at each of those locations at the time they were taken.

IV. IMPACTS OF CATTLE GRAZING ON CAMAS CREEK ALLOTMENT

A. Camas Creek

15. *Meyers Cove Exclosure*: I walked the entire length of this exclosure on both sides, starting near the upstream end on the right bank[1], walking upstream to the ford that makes the upstream exclosure boundary, crossing this ford, walking the left bank to the downstream end, crossing again, and returning on the right bank. This exclosure, which I understand was built in 1990 to exclude cattle, showed substantial fresh cattle use, with numerous cow pies, trails through the riparian vegetation, hoof prints, trampled streambanks, and high utilization of woody vegetation throughout the exclosure (Photograph 1). It was clear that there was a significant cattle presence in the exclosure during this season. While walking the left bank, I saw a cow and calf outside the exclosure fence, in the West Fork unit.

Photograph 1. Looking upstream on right bank in Meyers Cove exclosure, where cattle grazing caused bank alterations.

[1] The right bank refers to the bank on one's right if one was descending the creek.

Photograph 2: Cattle trail and cow pie on left bank, inside Meyers Cove exclosure.

16. Much of Camas Creek within the exclosure displays potential spawning habitat, with appropriate characteristics such as lower stream gradients, lower water velocities, and good gravel accumulation. Unfortunately, I observed widespread cattle sign near that potential habitat.

17. For example, the highest cattle use area was a meadow area just upstream from the corral on the right streambank (Photograph 3). This meadow area was easily accessible to cows, revealing a high percentage of trampled banks, and numerous cow pies from this year. (Photographs 4-5). Correspondingly, this area was adjacent to the best spawning area in the exclosure, with the appropriate gravel size, water depths, and velocities needed for redd construction and egg survival. I observed one older redd (probably a few weeks old) located close to the right bank about mid-way in the meadow area (Photograph 6). Bank trampling in the area of the redd was increasing fine sediments to the channel near and upstream from the redd.

Photograph 3: Meadow area, adjacent to redd site, within Meyers Cove exclosure.

Photograph 4: Closeup of bank trampling in meadow area, adjacent to redd site, within Meyers Cove exclosure.

Photograph 5: Closeup of bank trampling in meadow area, adjacent to redd site, within Meyers Cove exclosure.

Photograph 6. A redd adjacent to the meadow area in the Meyers Cove exclosure

18. *Camas Creek ford above Meyers Cove exclosure*: The ford at the upstream end of the exclosure, which at one time was hardened with concrete pieces, now contains potential spawning habitat, as many of these concrete blocks in the mid-channel have been undercut and moved downstream (Photograph 7). This has allowed the channel to accrue

smaller substrate and have appropriate velocities and depths needed for spawning. This poses an obvious risk, as it would be only a matter of time before any redd built on this ford was disturbed or crushed by vehicles or livestock.

Photograph 7. Ford on upstream end of Meyers Cove exclosure.

19. *Camas Creek from Meyers Cove exclosure to Castle Creek*: In this reach, I hiked down to and observed several sites that appeared to have the best spawning habitat, based on gradient and water flows. I observed at least 11 redds in three sections of stream, more than anywhere else on the allotment. My observations of redd distribution is consistent with those reported by Russ Thurow on Camas Creek from 1995 to 2004 (unpublished data). I understand that the Forest Service asserts that this stream reach is protected from cattle by the drift fences in Castle and Furnace Creeks and the use of riders, who are to keep cattle from moving out of the uplands and into riparian areas. However, I observed substantial fresh cattle use (from this season) in every area I visited within this stream reach, including numerous cow pies, trails through the riparian

vegetation, fresh cow hoof prints, trampled streambanks, and high utilization of woody vegetation.

20. Observed redds were located in lower gradient sections of stream, which again were more accessible to cattle. *See* Photographs 8-10 (areas of higher concentrations of Chinook salmon redds). Also, at least five of the redds I observed were located close to the stream edge, making them more likely to be either directly stepped on by cattle or to receive higher amounts of fine sediment from adjacent trampled streambanks.

21. I also observed rearing habitat for young salmon and steelhead in this reach, which is identified by off-channel and side-channel stream sections where the water velocities are low and depths relatively shallow. I also observed prevalent cattle impacts near these reaches.

Photograph 8. Chinook spawning section on Camas Creek between Meyers Cove and Castle Creek.

Photgraphs 9. Looking downstream at Chinook redd site on Camas Creek between the exclosure and Castle Creek.

Photograph 10. Chinook spawning reach on Camas Creek between Meyers Cove and Castle Creek.

22. I observed recent (this season) cattle sign along the creek adjacent to all three of the spawning areas I observed in this reach, including fresh cow pies, hoof prints, and bank trampling. Importantly, one redd very near to the left bank had puncture holes or

depressions in it. The bank adjacent to the redd had signs of fresh cow trampling and pies. This led me to believe that the depressions were likely caused by a walking cow. I observed a Chinook salmon carcass at the bottom of a pool at this site. Photographs 11-17 show pictures of cattle sign near redd sites in this reach.

Photograph 11. Fresh streambank trampling by cattle near redd site on Camas Creek between the exclosure and Castle Creek.

Photograph 12. Redd adjacent to streambank, containing depressions; adjacent bank showing recent cattle use.

Photograph 13. Bank adjacent to redd containing depressions, showing fresh bank trampling by cattle.

Photograph 14. Cattle hoof print near Chinook redd on Camas Creek

Photograph 15. Shrub near a redd area with near-100% utilization, indicating cattle use.

Photograph 16. A cow pie on the bank adjacent to a Chinook redd.

Photograph 17. A cow pie near the bank where a redd was located.

23. As in the Meyers Cove exclosure, the areas in this stream reach with either observed redds or potential spawning habitat overlapped significantly with where I observed evidence of heavy cattle grazing. This is because areas with redds were found in flatter and wider riparian areas that had lower stream gradients, lower water velocities, and good gravel accumulation, areas that also tend to be easily accessible to cattle and provide opportunities for foraging, loafing and watering. Based on the number and varying stages of decay of the cow pies seen and the extent of hoof prints and trampling, it was evident that cattle use of the riparian areas adjacent to these redds was substantial and repeated and not the result of a single animal or single instance of trespass.

24. Because I was not able to walk the entire reach of this stream, it is likely that there were other redds in this stream reach that I did not observe, and that those areas were being subjected to similar cattle impacts.

25. *Castle Creek to Furnace Creek*: I walked from the mouth of Castle Creek to the mouth of Furnace Creek (and back), observing Camas Creek and the conditions of its banks. This reach of stream had impacts from cattle grazing similar to the reach from Meyers Cove exclosure to Castle Creek. I understand that the Forest Service asserts that this stream reach is protected from cattle by the Castle and Furnace Creek drift fences and the use of riders, who are to keep cattle out of the riparian areas. However, I observed substantial fresh cattle use throughout this stream reach, including numerous cow pies, trails through the riparian vegetation, hoof prints, trampled streambanks, and high utilization of woody vegetation.

26. I observed that most inchannel bottom substrate in this reach is dominated by small and large boulders and cobble, a substrate too large for Chinook salmon, steelhead, and bull trout redd construction. This means productive spawning areas are somewhat limited in Camas Creek from Meyers Cove to Furnace Creek.

27. However, I did observe two redds and a few potential spawning areas in this stream reach. One was just above a log jam about ½ mile upstream from Castle Creek. This area was easily accessible to cattle. A cow trail led down to Camas Creek from the road, and on the streambank adjacent to the redd, I observed numerous cow pies, trails through the riparian vegetation, significant trampling and cow hoof prints, and high utilization of woody vegetation. Photographs 18-21 depict the Chinook salmon redd site and the cattle impacts on the bank across from the redd. This cattle access is problematic because the creek was crossable by cows at this flow level.

Photograph 18. Chinook redd site just upstream from a logjam between Castle and Furnace creeks.

Photograph 19. Overview of right streambank across from where a redd was located near left bank, showing bank alteration by cattle.

Photograph 20. Cattle grazing impacts and cow pie on right bank of Camas Creek, near to where a redd was located near left bank.

Photograph 21. Closeup of streambank alteration by cattle (hoofprints) near to where a redd was located near left bank.

28. Proceeding upstream, I observed several additional areas of potential spawning habitat in this reach, all of which had signs of cattle use. *See* Photographs 22-

23.

Photograph 22: Meadow covered with cow pies upstream from redd site.

Photograph 23: Closeup of fresh cow pies in same meadow as above, upstream from redd site.

29. The second redd I observed in this reach was located just downstream from Furnace Creek (Photograph 24). This redd was constructed near the right bank, adjacent to a steep cliff. Thankfully, the cliff appeared to limit cattle access to this redd.

Photograph 24. Chinook redd on Camas Creek just downstream from Furnace Creek.

30. *Camas Creek Upstream from Furnace Creek*: There is a barbed-wire drift fence with a gate extending across the road and down to Camas Creek just above Furnace Creek, apparently designed to keep cattle from getting into Camas Creek upstream of this point. However, I walked down to Camas Creek just upstream of the fence, along a cow trail, and observed at least four cow pies of varying ages in the riparian area along Camas Creek. I also observed that the mechanism to close the fence gate simply consisted of a chain hooked over the heads of a few nails. I believe it would have been easy for a cow pushing on this mechanism to dislodge the chain and open the gate.

Photograph 25. Gate at Furnace Creek to prevent cows upstream in Camas Creek.

Photograph 26: Cattle trail leading from road to Camas Creek, just upstream of Furnace Creek drift fence and gate.

Photograph 27. Cow pies near Camas Creek upstream from the fence at Furnace Creek.

B. Castle Creek

31. *Castle Creek*. I examined at least three sites along lower Castle Creek, below the drift fence. I observed one redd about 1/8 mile up from the confluence with Camas Creek (Photograph 28). This site was accessible to cows: I observed cow pies and trampled banks near the redd. (Photograph 29).

Photograph 28. Chinook redd on Castle Creek downstream from the drift fence.

Photograph 29: Cow hoof print near Castle Creek redd site.

32. Proceeding up Castle Creek to the drift fence, I observed numerous access points and cow pies, trails, and trampled banks. *See* Photographs 30-33. Cattle sign was ever-present along this stream reach, including woody browse use greater than 50% on

both single- and multi-stemmed species in lower Castle Creek, retarding riparian growth.

Photograph 30: Cow pie along Castle Creek, downstream from the drift fence.

Photograph 31: Fresh cow pies along Castle Creek, downstream from the drift fence.

Photograph 32. Cow pie along Castle Creek, downstream from the drift fence.

Photograph 33: Cow trail leading to Castle Creek, just downstream from the drift fence (visible in background).

33. Above the drift fence, I observed that many areas along the stream were accessible to cows and had flatter stream gradients. This means they were likely potential

spawning habitat, but I did not survey this area for redds.

V. CONCLUSIONS

34. To summarize, I observed cattle access and cattle use in the riparian areas adjacent to almost all of the best spawning areas on Camas Creek between the Meyers Cove exclosure and Furnace Creek. As noted above, lower stream gradient areas (flats) have the greatest numbers of Chinook salmon redds and these meadow areas are also the most easily accessible to cattle. I observed cattle sign on the banks adjacent to all but one of the 14 Chinook salmon redds I observed.

35. The assumption and management strategy to protect streams in the allotment in the BA and both BOs is that fencing around the Meyers Cove exclosure, drift fences at the mouth of Castle and Furnace Creeks, and riders to keep cows out of Camas Creek and Castle Creek would protect spawning areas from cattle disturbance. Based on my observations, this strategy did not and will not work.

36. Rather, it is apparent that spawning Chinook salmon, and their incubating redds, are receiving significant impacts from the current level of livestock grazing on this allotment.

37. Many of the redds I observed were located close to streambanks, which increases the likelihood of cattle stepping on redds when they are watering or wading in the stream. Based on my observation of depressions in one Chinook salmon redd between Meyers Cove and Castle Creek that was very close to the bank, it appeared that this redd was trampled or stepped on. Such an impact likely crushes many of the eggs that are incubating in the gravels, killing the embryos and thus decreasing the number of fry that emerge.

38. Furthermore, cattle grazing along streambanks causes fractures, slumping, sloughing, and eroding of banks, which could lead to increased deposition of fine sediments on redds, especially redds closely associated with the streambank. This was occurring on some redds I observed. Deposition of sediment on redds is harmful because this excess sediment can reduce oxygen to the developing eggs and yolk-sac fry that may lead to reduced survival of eggs and fry, which therefore impairs reproduction.

39. In addition, spawning Chinook salmon, especially those constructing a redd close to the bank, are likely to be harassed by cows grazing along the bank and at water's edge or wading in the stream, disrupting redd development.

40. Based on my extensive experience as a fisheries biologist surveying fish habitat and assessing impacts of livestock grazing, the signs of cattle grazing observed near redds in Camas Creek demonstrate that there is a high likelihood grazing has and will continue to harm and harass Chinook salmon redds and adult Chinook salmon.

41. According to the draft report of Interior Columbia Technical Recovery Team, the Camas Creek Chinook salmon population does not currently meet viability criteria because Abundance/Productivity risk is high. Improvement in abundance/productivity status will need to occur before the population can be considered viable. Also, there are no hatchery salmon in the population, making its genetic integrity purely wild and extremely important to protect. The Chinook salmon in Camas Creek is managed by IDFG as a wild production area. I believe continuing to graze the Camas Creek allotment under the current grazing regime will continue to maintain this population of Chinook salmon below a viable level and not allow it to recover.

I declare under penalty of perjury under the laws of the United Sates that the foregoing is true and correct.

Executed this 23rd day of September at Eagle, Idaho.

/s/ Robert House

Robert House

References

Interior Columbia Technical Recovery Team (ICTRT) Draft. Camas Creek Spring/Summer Chinook Salmon Population.

(PACFISH), 1995. U.S. Department of Agriculture Forest Service and U.S. Department of Interior Bureau of Land Management. Decision Notice/Decision Record, FONSI, EA, Appendices for the Interim Strategies for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California. U.S. Department of Agriculture, Forest Service, U.S. Department of Interior, Bureau of Land Management. Washington DC.

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USFS and BLM, 1997. The Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins, Volumes I-IV, USFS PNW-GTR-405. USFS Pacific Northwest Research Station, Walla Walla, WA.

CERTIFICATE OF SERVICE

I hereby certify that on this 28th day of September, 2012, I caused the foregoing DECLARATION OF ROBERT HOUSE to be electronically filed with the Clerk of the Court using the CM/ECF system, which sent a Notice of Electronic Filing to the opposing counsel of record listed below:

- Erik Petersen Erik.Petersen@usdoj.gov

I further certify that I will cause the foregoing to be mailed via certified U.S. Mail to:

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