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IN THE 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 LAURENCE D. ZUCKERMAN**

1. My name is Laurence D. Zuckerman. I am a fisheries biologist based in Salmon, Idaho. The following facts are based on my personal knowledge; and if called as a witness I would and could testify thereto.

Background and Basis for Testimony

2. I previously worked for NOAA Fisheries as a Senior Fisheries Biologist and Level I Streamlining ESA Consultation Team representative in Salmon, Idaho; as a Threatened

and Endangered Species Biologist for the Kansas Department of Wildlife & Parks; and as a Fishery Biologist for the U.S. Fish and Wildlife Service, Colorado Division of Wildlife, Wyoming Game & Fish, and the Rocky Mountain Experimental Station of the U.S. Forest Service. My immediate past job was as Central Idaho Director for Western Watersheds Project, in which I tracked ecological conditions and agency proposals on public lands throughout Idaho, including in the Camas Creek watershed. A full resume is attached as Exhibit A.

3. In preparing this declaration, 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 Chinook salmon redd identification and inventory; fluvial geomorphology and Rosgen methodology; quantitative fish habitat evaluations, modeling and inventories; riparian and stream habitat assessments and monitoring including MIMs and PACFISH-INFISH Biological Opinions ("PIBO") Monitoring and Standards; Endangered Species Act Section 7 Consultations (including for grazing), Section 9 Take and Incidental Take Statements, Watershed-Scale and Programmatic Consultations, Take Reduction Plans, Recovery Plans, Species Status Reports, and Critical Habitat Designation Rules; fish identification and taxonomy; field assessments of fish populations; native fish restoration and recovery projects; evaluation of the adverse effects of grazing on aquatic and riparian ecosystems; and stream and bank restoration methodology.

4. I was one of the authors of the Snake River Basin steelhead Designated Critical Habitat Rule and a member of the Biological Review Team and was the lead fishery biologist for the Upper Salmon River and Middle Fork Basins for that NMFS effort as a lead member of the Critical Habitat Assessment and Review Team ("CHART") as well as the Status Review for the Snake River spring/summer Chinook salmon ESU and the Snake River Basin Steelhead DPS,

and the Snake River Basin Draft Recovery Plan. I was also one of the co-authors of the Instream Work Windows and Fish Periodicity Charts developed by the Upper Salmon Basin Watershed Project and that includes Camas Creek and its tributaries. This is a guiding document to avoid Section 9 Take of spawning adults, incubating eggs, and in-gravel developing fry or alevins and is used by cooperators in the Upper Salmon Basin Watershed Project, which includes the Salmon-Challis National Forest.

5. I have 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 Idaho, Wyoming, Colorado, Nebraska, New York, New Mexico, and Kansas. I've specifically conducted spawning ground counts for over 10 years on miles of inland and Great Lakes streams, specifically for Chinook and Coho salmon, steelhead, and bull, rainbow, brook, brown, and various subspecies of cutthroat trout. For 5 years (2003-2007), I conducted weekly spawning ground counts in the upper Salmon River Basin and Middle Fork Salmon River Basin (includes Camas Creek) to determine changes in numbers of Chinook salmon redds and adults after stream restoration. Therefore, I have developed expertise in identifying and predicting the age of redds.

6. I have also developed the expertise to assess 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; 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. I have completed several training sessions and field workshops led by the

Bureau of Land Management and the Forest Service for assessing riparian and aquatic habitats and am the lead author of the U.S. Fish and Wildlife Service publication, "Habitat Suitability Index and Instream Flow Models for Brown Trout."

7. I have also developed expertise at identifying the impacts of livestock grazing on riparian habitat and redds. Based on my experience I can discern whether trampling activity was caused by domestic cattle versus other wildlife. Also, cow waste is distinct from domestic horse, moose, elk or deer droppings, and the appearance of cow pies suggests how recently cows were present.

8. I was retained to conduct six site visits to the Camas Creek allotment during the summer of 2012. I conducted these visits on: August 2, August 11, August 17, August 23, September 4, and September 19. This declaration describes what I personally observed on these visits and presents photographs that I took myself.

Meyers Cove Exclosure

9. On my August 2 and August 11 visits, I walked the length of the Meyers Cove exclosure, and on my remaining four visits I drove its length.

10. On August 2, when I first passed the gate leading through the exclosure at the West Fork ford road, it was closed, but I observed that the gate's designed closure mechanism was broken and that only a piece of flimsy wire was holding the gate closed. Fig. 1. I was concerned that it could easily dislodge or break. Sure enough, when I passed the gate later in the day on the way out of the allotment, the gate was wide open. Fig. 2.

Fig. 1: Closure mechanism of West Fork gate. August 2, 2012.

Fig. 2: West Fork gate wide open at end of day. August 2, 2012.

11. On August 11, 2012, the piece of wire had been replaced by another temporary fix, a rope, instead of fixing the actual latch.

Fig. 3: Closure mechanism of West Fork gate. August 11, 2012.

12. This is problematic because cattle entering the West Fork Camas Creek road through the gate can often easily gain entry into the Meyers Cove exclosure and its important spawning habitat. This is because the lightweight drift fencing along the ford is often is disrepair, as described below.

13. On August 11, I observed that the drift fence crossing Camas Creek along the West Fork ford, within the exclosure, was in a poor state of repair, including a downed pole, several broken wires, and sections of both sides of the fence leaning precipitously. Figs. 4–8.

Fig. 4: West Fork ford fence, downstream side of fence, descending right bank.[1] August 11, 2012.

Fig. 5: West Fork ford fence, downstream side of ford, bottom wire missing. August 11, 2012.

[1] All references to left or right banks are from the perspective of descending the stream.

Fig. 6: West Fork ford fence, downstream side of ford, middle wire broken. August 11, 2012.

Fig. 7: West Fork ford fence, downstream side of ford, middle wire broken and posts leaning. August 11, 2012.

Fig. 8: West Fork ford fence, upstream side leaning precipitously. August 11, 2012.

14. On August 23, slight improvements had been made, but the bottom wire was still broken on the downstream side of the ford.

15. On August 2, 2012, I observed that the drift fence crossing Camas Creek on the upstream end of the exclosure was in a poor state of repair, as the bottom wire was broken.

Fig. 9: Exclosure upstream boundary drift fence. August 2, 2012.

16. The bottom wire was still broken and other wires were loose on August 11, 2012.

Fig. 10: Upstream drift fence. August 11, 2012.

17. On August 2 and all my visits thereafter, I observed several downed poles and other gaps in the buck and pole fence surrounding much of the exclosure.

Fig. 11: Downed pole in exclosure fence. August 2, 2012.

Fig. 12: Downed pole in exclosure fence. August 2, 2012.

18. On both August 2 and 11, I observed abundant signs of cattle use, including bank trampling, defecation, and browsing of woody riparian bushes and trees inside the Meyers Cove exclosure. This included dozens of cow pies that appeared to be from this season. Since the allotment was not grazed in 2011, any cow pies that were dark and relatively fresh had to have come from this year, as all others would be two years old or older.

Fig. 13: Fresh cow waste inside Meyers Cove exclosure. August 11, 2012.

Fig. 14: Fresh cow waste inside Meyers Cove exclosure. August 11, 2012.

Fig. 15: Fresh cow waste inside Meyers Cove exclosure. August 11, 2012.

19. I also observed widespread long-term effects of cattle grazing within the exclosure, such as a high percentage of bare ground, soil compaction, and highly altered and

collapsed banks. It is very obvious that the exclosure is not functioning as a control site without grazing, as intended when purchased and restored.

Camas Creek between Meyers Cove Exclosure and Castle Creek

20. I walked along this reach for several kilometers on August 2 and August 11, and observed recent cattle sign on both banks of this reach of Camas Creek that supports spawning. I also drove the left bank on subsequent trips and stopped and inspected the creek.

Fig. 16: Overview of Camas Creek reach upstream of Meyers Cove exclosure, looking upstream. August 2, 2012.

Fig. 17: Recently used cattle trail along right bank of Camas Creek, above Meyers Cove exclosure. August 2, 2012.

Fig. 18: Recently used cattle trail along right bank of Camas Creek, above Meyers Cove exclosure. August 2, 2012.

Fig. 19: Fresh cattle waste along right bank of Camas Creek, above Meyers Cove exclosure. August 2, 2012.

Fig. 20: Actively eroding, trampled right bank of Camas Creek, above Meyers Cove exclosure. August 2, 2012.

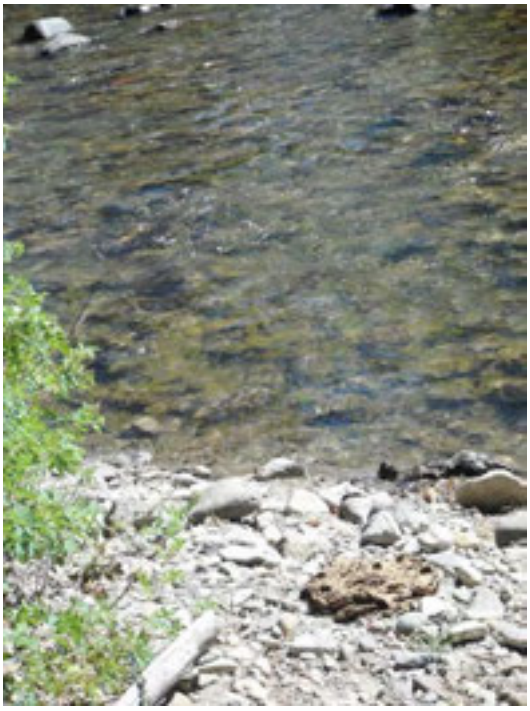

Fig. 21: Fresh cattle waste along left bank of Camas Creek, above Meyers Cove exclosure. August 2, 2012. This site was adjacent to suitable salmonid spawning habitats.

Fig. 22: Fresh cattle waste along left bank of Camas Creek, above Meyers Cove exclosure. August 11, 2012.

Fig. 23: Fresh cattle waste (appeared to be less than a week old) along left bank of Camas Creek, above Meyers Cove exclosure. August 11, 2012.

Fig. 24: Fresh cattle waste (appeared to be less than a week old) and recent hoof prints on left bank of Camas Creek, above Meyers Cove exclosure. August 11, 2012.

Fig. 25: Chinook salmon redd in Camas Creek, above Meyers Cove exclosure, in an area with sign of cattle access. August 11, 2012.

Castle Creek

21. On several of my visits, I observed and crossed Camas Creek ford #3, which is near the confluence of Castle Creek and Camas Creek. This ford poses a risk for spawning salmonids, as well as incubating eggs and in-gravel developing alevins, because the paving blocks have washed away in the middle of the stream channel, and are piled high on each side of the channel, making them impassable to many vehicles. This forces vehicles (and likely cows) using the ford to cross upstream of the pavers, over the natural streambed, which contains potential spawning habitat (natural cobble and gravel, low stream gradient, shallow). This means that redds could be built in the ford, which would quickly be crushed by vehicle or cow traffic. This is not a recent development and has been the case since my initial visits to the Camas Creek Allotment in 2003. As the formerly stabilized fords revert to natural conditions, spawning salmonids are drawn back to historic spawning sites, placing them in harm's way.

Fig. 26: Camas Creek ford #3 (near confluence with Castle Creek). Traffic drives on right side of photo, not on the pavers. August 11, 2012.

22. On September 4, someone had constructed a miniature exclosure fence within Camas Creek just downstream of ford #3, around a fresh Chinook salmon redd, demonstrating that the ford area is indeed suitable spawning habitat. Presumably the fence was designed to prevent cattle crossing the ford from straying a bit downstream or coming off the adjacent Castle Creek road and trampling the redd.

Fig. 27: Miniature exclosure around Chinook salmon redd, Camas Creek, just below ford #3, along the right bank. September 4, 2012.

23. On August 17, I drove to the Castle Creek drift fence, which I understand is designed to prevent cattle from moving into the lower mile of Castle Creek, which is spawning habitat for Chinook salmon, steelhead, and bull trout. I hiked along the fence to the creek and observed that the bottom wire of the drift fence was broken, making it easy for cows and calves to get underneath, and that other wires were loose. I visited here again on August 23 and September 4, and the fence was in the same condition.

Fig. 28: Broken, loose wires on Castle Creek drift fence, across Castle Creek. August 17, 2012.

Fig. 29: German Shepherd-Husky mix easily walking under Castle Creek drift fence. August 17, 2012.

24. On August 23, I observed that a section of fencing and fenceposts just upslope of the left bank of Castle Creek was lying down and thus providing no barrier to cattle. (The area is heavily wooded, so it is difficult to see in my photographs). The fence was in the same condition on September 4.

25. On both August 17 and August 23, there were visible cow trails along the downstream side of the drift fence (the side cows are supposed to be excluded from), and I observed cattle sign on both sides of the fence, including manure (both this season's and older), cow trails, hoof prints, and bare ground.

Fig. 30: Cow trail along downstream side of Castle Creek drift fence. August 17, 2012.

26. On September 4, I observed new, fresh sign of cattle below the drift fence that had not been there in previous weeks. Cow use seemed more recent downstream of the drift fence than upstream. Specifically, I observed fresh cattle waste along Camas Creek below the drift fence. Therefore, I believe cows had been there between August 23 and September 4.

Fig. 31: Fresh cow pie in Castle Creek riparian area, downstream of drift fence. September 4, 2012.

Camas Creek between Castle Creek and Furnace Creek

27. On several of my visits, I walked along Camas Creek between Castle Creek and Furnace Creek. During each visit, I observed that virtually every meadow area along the creek was littered with cow pies and otherwise heavily impacted by cattle. The meadow areas in this reach are littered with cow pies, heavily grazed, and contain numerous cow paths leading to Camas Creek from the road. Where the trails lead to Camas Creek, I observed evidence of accelerated erosion and sediment loading from cattle trampling the riverbanks.

28. For example, on August 11, I walked this reach and observed several recent Chinook salmon redds. The bright, clean gravel and cobble of the redds showed that they had been built in the last week or two. (Older redds start to accumulate some silt, algae, and other debris as time progresses.) I observed signs that cattle were accessing the creek on virtually every flat, open area along the creek that I inspected, including in the same vicinity as the redds.

In fact, I observed that the areas with redds and the areas of cattle access were closely associated, as the redds were found in the flatter, low-velocity sections of the creek, which tended to be the more open, meadow areas favored by cows. Cattle avoided entry where mature willows and woody slash were thick, but found easier ways to the creek. Once at the creek, there was evidence that cattle had moved up and down the banks, as well as crossed the creek (i.e., there was also evidence of cattle on the far side of the creek). In contrast, areas that are more canyon-like with larger boulders, steeper gradients, and faster, deeper runs are both less suitable for spawning and harder for cattle to access.

Fig. 32: Cattle waste in a riparian meadow along the right side of Camas Creek between Castle and Furnace Creeks, near a Chinook salmon redd. August 11, 2012.

Fig. 33: Cattle waste in riparian area of Camas Creek between Castle and Furnace Creeks. August 11, 2012.

Fig. 34: Riparian meadow littered with cattle waste along Camas Creek, between Castle and Furnace Creeks. August 11, 2012.

Fig. 35: Fresh cattle hoof print on Camas Creek, adjacent to prime salmonid spawning habitat with active redds in sight, between Castle and Furnace Creeks. August 11, 2012.

Fig. 36: Cleaned gravel in a raised pocket (center of photo) in Camas Creek indicates Chinook salmon redd building activity, between Castle and Furnace Creeks. Cattle access nearby. August 11, 2012.

Fig. 37: Chinook salmon redd in Camas Creek, between Castle and Furnace Creeks. August 11, 2012.

Fig. 38: Chinook salmon redd in Camas Creek, adjacent to banks and riparian areas with cattle sign, between Castle and Furnace Creeks. August 11, 2012.

29. I again walked this reach of Camas Creek on August 17, and observed at least one

additional fresh Chinook salmon redd, along with the same pattern use and new cattle sign in the vicinity.

Fig. 39: Chinook salmon redd in Camas Creek between Castle Creek and Furnace Creek. August 17, 2012. Cattle sign in the vicinity along right bank of Camas Creek.

30. I again hiked this reach on August 23, and observed several additional fresh Chinook salmon redds, including one reach with three new redds in a row from upstream to downstream.

Fig. 40: Chinook salmon redd in Camas Creek between Castle and Furnace Creeks. Cattle access nearby. August 23, 2012.

31. I again hiked this reach on September 4, and observed several additional fresh Chinook salmon redds, with evidence of cattle reaching the creek near this site.

Fig. 41: Chinook salmon redd in Camas Creek between Castle and Furnace Creeks. Cattle access at site. September 4, 2012.

32. I again hiked this reach on September 19, and observed similar conditions. For example, I noted a Chinook salmon redd just upstream of a logjam, with cattle sign on the adjacent bank, including fresh cattle hoof prints.

Fig. 42: Logjam Chinook salmon redd in Camas Creek between Castle and Furnace Creeks. Recent cattle access at site. September 19, 2012.

Furnace Creek

33. I hiked to the Furnace Creek drift fence on several trips. On August 17, I observed that the bench above the left bank of Furnace Creek, downstream of the Furnace Creek drift fence gate (at the trailhead for the Furnace Creek trail), was heavily impacted by cattle. There are several wet spring areas, which are tributary to Furnace Creek, that were recently and severely trampled by cattle, with hummocks, deep hoof prints, and abundant cow pies. Figs. 43–44. I also observed multiple cattle trails from this area leading down to Furnace Creek below the drift fence. I observed the same conditions on August 23, September 4, and September 19. In fact, I noticed numerous additional fresh cow pies here on September 4, indicating cattle had been below the drift fence between August 23 and September 4. Figs. 45–46.

Fig. 43: Trampled wet areas below Furnace Creek drift fence (visible in distance at end of trail in photo). August 17, 2012.

Fig. 44: Closeup of trampled wet area below Furnace Creek drift fence. August 17, 2012.

Fig. 45: Trampled wet area below Furnace Creek drift fence, with large fresh cow pie in foreground. September 4, 2012.

Fig. 46: Fresh cow pie below Furnace Creek drift fence. September 4, 2012.

34. On August 17, I walked down the Furnace Creek drift fence from the Furnace Creek trail (left bank) to Furnace Creek. There were well-established cattle trails on both sides of the drift fence leading from the trail down the relatively steep riparian buffer to the left bank and channel of Furnace Creek. At the creek, I observed that the fence had broken and loose wires and was badly skewed and low to the ground across the creek, allowing cattle to step over it. I observed cattle sign (waste and hoof prints) in the stream channel, on the gravel bars, and in the riparian area both upstream and downstream of the fence and along both banks.

Fig. 47: Furnace Creek drift fence across Furnace Creek. August 17, 2012.

Fig. 48: Fresh cattle hoof prints in Furnace Creek riparian area (left bank), downstream of drift fence. August 17, 2012.

Fig. 49: Fresh cattle hoof prints in Furnace Creek riparian area (left bank), downstream of drift fence across Furnace Creek. August 17, 2012.

Fig. 50: Cow pie in Furnace Creek stream channel, downstream of drift fence across Furnace Creek. August 17, 2012.

35. I visited this same location again on August 23, September 4, and September 19,

and found the fence in the same condition, with fresh cattle sign.

Camas Creek, upstream of Furnace Creek

36. On August 17, I found the gate in the fence across the Camas Creek road designed to prevent cows from getting into Camas Creek upstream of Furnace Creek to be wide open. There were many cattle hoof prints in the road, indicating that cattle had recently been above the fence line.

Fig. 51: Gate across Camas Creek road at Furnace Creek open. August 17, 2012.

Fig. 52: Cow prints and eroding side-slope from hoof shear on road above Camas Creek fence at Furnace Creek. August 17, 2012.

37. On September 19, I walked about one mile above the Camas Creek drift fence at Furnace Creek, towards Hidden Valley Ranch and White Goat Creek. I took several cow paths from the road and followed them through the riparian areas to Camas Creek. I observed that cattle were accessing the creek in many places in this important spawning reach, particularly in low-gradient, shallow reaches featuring cobble-gravel substrate, which are also preferred spawning habitat. I observed numerous sites where the river bank contained cattle hoof prints and waste. I also observed evidence that the cattle were crossing the creek (i.e., cattle sign on both sides of the bank). Interestingly, the cattle sign along the banks was largely not visible from the Camas Creek road, only becoming visible when I walked through the often densely-wooded riparian areas to the bank. Some of the hoof prints and cattle waste were relatively fresh and from this year. Photographs of this reach follow.

Fig. 53: Cow hoof prints along Camas Creek right bank, about 0.5 mile upstream from Furnace Creek). Several Chinook salmon redds adjacent to this site. September 19, 2012.

Fig. 54: Camas Creek, about 0.5 mile upstream from Furnace Creek. Cattle prints and waste on bank in lower right of photo, and Chinook salmon redds in this reach. September 19, 2012.

Fig. 55: Camas Creek vista about 0.75 miles upstream from Furnace Creek, showing the flat, low-gradient water that is ideal Chinook salmon spawning habitat. September 19, 2012. Several redds in this reach, as well as recent cattle sign. Closeups of this reach follow.

Fig. 56: Cow pies from this year in riparian area adjacent to descending right bank of Camas Creek, upstream of Furnace Creek. September 19, 2012.

Fig. 57: Hoof prints in Camas Creek riparian area. Photo is close-up of Fig. 55. September 19, 2012.

Fig. 58: Hoof prints and bank damage on Camas Creek, in an area with Chinook salmon redds. Photo is close-up of Fig. 55. September 19, 2012.

Fig. 59: Cattle hoof prints in Camas Creek streambank. Photo is close-up of Fig. 55. September 19, 2012.

Fig. 60: Closeup of cow hoof prints along Camas Creek, downstream of White Goat Creek. September 19, 2012.

Fig. 61: Typical cow trail leading from road to Camas Creek, downstream of White Goat Creek. September 19, 2012.

West Fork Camas Creek

38. On September 19, I traveled about a mile up West Fork Camas Creek's confluence with Camas Creek to observe riparian conditions. There is an exclosure in this reach with numerous wire gates that allow cattle access into the riparian area, if opened or breached. It was apparent that this is occurring, because similar to Camas Creek above Furnace Creek, I observed cattle sign in the riparian areas which was hard to detect from the road. I observed numerous cattle paths crossing the riparian areas, with the paths leading to the creek. Where the cows were reaching the creek, adverse impacts were present including hoof prints, bank damage and erosion, soil hummocking, and cattle waste.

Fig. 62: Overview of riparian area laced with cow trails, lower West Fork Camas Creek. September 19, 2012.

Fig. 63: Cattle use in lower West Fork Camas Creek riparian area: heavily grazed riparian bench, with collapsing bank. September 19, 2012.

Conclusions

39. I observed that livestock are accessing virtually all reaches of the creeks in the Camas Creek allotment, even those believed to be protected by exclosure fencing, drift fencing, riders, or otherwise.

40. For example, I observed significant cattle sign below the drift fences in Castle Creek and Furnace Creek, including some fresh use that occurred this summer. I also observed cattle signs all along Camas Creek, much of which was from this summer. Over the course of my visits, new signs of cattle use appeared on Camas, lower Castle and lower Furnace Creeks after August 2. I also observed new Chinook salmon redds on several visits between early August and early September in mainstem Camas Creek, with corresponding cattle use at each site. These observations demonstrate that cattle were present along these creeks during Chinook salmon spawning, incubation, and in-gravel development seasons.

41. Furthermore, the signs of fresh cattle use I observed on my first visit in early August, including the use in Meyers Cove, demonstrate that cattle use overlapped with the steelhead egg incubation and in-gravel larval development season, as well as Chinook salmon spawning and egg incubation in mainstem Camas Creek and lower Castle Creek. Thus, all signs of cattle use from this summer overlapped with either steelhead incubation/larval development or Chinook salmon spawning in mainstem Camas Creek and lower Castle Creek.

42. The extensive cattle use I observed along Camas, lower Castle, and lower Furnace Creeks is in part due to chronic fence maintenance problems. Most maintenance problems I observed on my very first visit remained unfixed through the entire season, despite my understanding that they were reported to the Forest Service. Many of these problems with fencing on the Camas Creek Allotment date back to at least April 2003 when I first viewed them,

and possibly before that. This includes the Meyers Cove exclosure buck and pole fencing and the drift fences across both Castle and Furnace Creeks. The drift fences lining the fords within the Meyers Cove exclosure were the only fences in the allotment that I observed improvements on during the summer; but even on these fences, missing wires and listing poles remained late in the season, rendering the fencing ineffective as cattle barriers, particularly to calves. Mother cows, once separated from their wandering calves, find or force their way through most fencing.

43. Open and broken gates allow cattle access to these non-functioning fences and allow cattle to move from other grazing units into Meyers Cove, West Camas Creek, Silver Creek, and lower Furnace and Castle Creeks, all prime spawning areas.

44. I observed that the lower stream gradient areas that are the most productive spawning reaches were also the most easily accessible and preferred by cattle. This was especially true in mainstem Camas Creek, where I observed cattle use every place that had redds or potential spawning habitat.

45. Overlap of cattle with spawning or incubation likely leads to trampling of redds when the cattle water, loaf, or cross the stream, which kills or injures the eggs and embryos. It can also cause harassment of spawning adults, disrupting their redd construction and spawning behaviors.

46. The cattle access I observed in these spawning and incubation areas was also leading to significant bank trampling and bank sloughing, which was causing increased deposition of fine sediments into the creeks near active Chinook salmon redds. This is harmful to redds because fine sediments are known to embed in important spawning, incubation, in-gravel development and food producing stream substrates. The sediment clogs the important interstitial spaces that provide the clean, well-oxygenated water to in-gravel eggs, fish larvae,

and aquatic invertebrates, and at the same time, allow the flows that carry away metabolic wastes such as ammonia and carbon dioxide. Increased sediment loading in the form of silt can also smother incubating eggs and developing alevins.

47. Based on my observations and experience, the cattle use I observed this summer along Camas Creek, lower Castle Creek and lower Furnace Creek shows a high likelihood that grazing was causing harm to Chinook salmon redds and incubating steelhead this summer, and will continue to cause harm to these species in the future, by impairing their reproduction and survival.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

DATED this 28th day of September, 2012.

/s/ Laurence D. Zuckerman

Laurence D. Zuckerman

CERTIFICATE OF SERVICE

I hereby certify that on this 28th day of September, 2012, I caused the foregoing DECLARATION OF KRISTIN F. RUETHER 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:

Jack Whitworth
Whitworth Ranches, Inc.
HC 62 Box 2120
May, ID 83253

Whitworth Ranches, Inc.
27 Whitworth Rd.
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/s/ Kristin F. Ruether
_____
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