IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF OREGON

PENDLETON DIVISION

WESTERN WATERSHEDS PROJECT, CENTER FOR BIOLOGICAL DIVERSITY, and WILDEARTH GUARDIANS,	)	
Plaintiff,	)	No. 2:19-cv-00750-SI
vs.	)	July 2, 2019
DAVID BERNHARDT, Secretary of the Interior, JEFFERY A. ROSE, District Manager, Burns District, Bureau of Land Management, and BUREAU OF LAND MANAGEMENT,	)	Portland, Oregon
Defendants.	)	

TRANSCRIPT OF PROCEEDINGS

(Preliminary Injunction Hearing - Day 2)

BEFORE THE HONORABLE MICHAEL H. SIMON

UNITED STATES DISTRICT COURT JUDGE

Court Reporter: Ryan White, RMR, CRR, CSR/CCR
United States District Courthouse
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(July 2, 2019; 2:08 p.m.)

P R O C E E D I N G S

THE COURT: Welcome back. We are continuing the preliminary injunction hearing in Western Watersheds Project versus Bernhardt, et al, case 19-cv-750.

And for the plaintiff, we have?

MR. BECKER: David Becker.

MS. BROOKS: And Talasi Brooks, Your Honor.

THE COURT: And for the defendant?

MR. ODELL: Good afternoon, Your Honor. Stephen Odell, Assistant United States Attorney for the District of Oregon for defendants. With me at counsel table again is Brad Grenham with the solicitor's office and also a special United States attorney, and Keith Ramsey, my legal assistant.

THE COURT: Welcome back.

MR. ODELL: Thank you.

THE COURT: I think when we left off we completed one of the defendants' witnesses. So the defendant may call the next witness.

MR. ODELL: Thank you, Your Honor.

We'd like to call Ms. Lindsay Davies to the stand.

Thank you.

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LINDSAY DAVIES,

having been first duly sworn or affirmed, was examined and testified as follows:

THE CLERK: Please state your full name for the record spelling your last.

THE WITNESS: Lindsay Davies, D-a-v-i-e-s.

DIRECT EXAMINATION

BY MR. ODELL:

Q. Good afternoon, Ms. Davies.

I want to ask you initially to start by providing a very brief overview of your professional qualifications, particularly as it relates to the topics of your expected testimony here today.

A. Sure.

I started in the Burns district in 2003 as a contract fish biologist and became a permanent employee in 2004 and was a fish biologist out in the district from -- until 2018, May 2018, in which I became the district environmental coordinator, planning and environmental coordinator.

Q. And in your role as a fish biologist for the Burns district, can you just briefly provide a statement as to what you've done in that capacity.

A. Sure.

I spent -- monitored hundreds of miles of streams primarily looking at the impacts of grazing management, evaluating if we needed to make any changes and make any recommendations on which those changes should be, doing all different types of monitoring from proper functioning condition assessments, multiple indicator monitoring, quantitative assessments, riparian vegetation and channel characteristics, shade monitoring, fish surveys. A wide variety of different protocols.

Q. Thank you. I think that should suffice.

Are you familiar -- turning more particularly with respect to the facts at issue in this case, are you familiar with riparian fish habitat conditions on the Hardie Summer and Mud Creek allotments?

A. Yes. I've reviewed all the files on our district for them and I visited the allotments five times now. Four times. Excuse me.

Q. And are there any particular sites that you have visited within those allotments within the last several weeks?

A. Yes. I visited Little Fir Creek, Big Fir Creek, and Lambing Creek.

Q. And were you out in the field on some of those occasions with other individuals other than yourself? In particular, did you make a visit with the experts for the plaintiffs?

A. I did, yes, along with other BLM specialists.

Q. And I wanted to, like, turn your attention initially to -- you said you had occasion to visit Lambing Creek. By that, is that, to your understanding, what Dr. Kauffman in his testimony and in his declaration referred to as Dry Creek?

A. That is my understanding, yes.

MR. ODELL: And with that, Mr. Ramsey, could you please pull up page 10 of the second declaration of Dr. Kauffman for me, please.

BY MR. ODELL:

Q. Can you see that on your screen, Ms. Davies?

A. Yes, I can.

Q. Okay. Is that the area that you visited recently, and when you referred to Lambing Creek, that's what you're talking about?

A. Yes. I've been in that area.

Q. Okay. And can you just provide a general overview of how extensively you evaluated this particular site and where you went with respect to this particular site.

A. Sure.

I walked in this area -- well, right around in this area. And then I went above the -- right above this is a reservoir. It's a larger reservoir that's stocked by ODF&W with rainbow trout. And above the reservoir, I walked up to the private boundary and then around up into the Hardie Summer

allotment. Really, the drainage doesn't go that far, but I walked in that area and I'm familiar with that.

Q. And in that investigation in the field, did you see any headwaters at all for this particular channel?

A. I did not see one spring on the way up, certainly not in the Hardie Summer allotment. And, again, there was no live water. There's no springs.

Q. And did you notice when you were visiting this channel, was -- there was -- was there water in there?

A. In this particular spot, there's been water. It was pooled up. It was not flowing.

There is actually a number of reservoirs in this channel, and so the other places that I noticed water would be below the reservoirs or in the reservoirs those reservoirs capture water from. From my understanding, they capture water from snow melt or rain in the spring.

Q. And so what would the source of the water that you saw pooled up within the channel --

A. Well, in this particular area, it would have been from the Grandad reservoir.

Q. And how far upstream from this side is the Grandad reservoir? Do you have an idea --

A. I couldn't say -- I think maybe a quarter mile.

Q. Okay. And did you happen to determine whether or not this channel and/or any of that water that you happened to see

pooled up within it flows into Mud Creek? Is there any flow in Mud Creek?

A. Yes. I actually did go down to the confluence, I've been down near the confluence, anyway, and the water is not flowing into Mud Creek.

Q. So how would you characterize this, based on your experience and expertise, within the different kinds of categories of water channels?

A. Well, particularly in this area that this photo is looking at, the vegetation is upland vegetation. There wasn't an indication of riparian hydric species there. Closer to the reservoir, the closer to the reservoir you get, you'd get more of that. I believe that's just because the leakage is continuing longer into the season.

So because of that -- and it's -- it's not a flowing system. I believe that it would flow as a result of snow melt, snow melt or precipitation, and those reservoirs are going to be intercepting quite a bit of that, of that precipitation.

Q. Would you consider any of this particular channel to be fish habitat?

A. No, I do not consider this to be fish habitat. And further, I don't -- well, ODF&W stocks that reservoir. It's ODF&W's policy no longer -- it's no longer ODF&W's policy to stock fish in moving water, meaning they don't want those fish to get into the main streams mostly for genetic diversity.

Those fish are not native fish species; so --

Q. So if I understand that, it's your understanding that if ODF&W, the Oregon Department of Fish & Wildlife, to be clear, were of the view that this channel eventually would flow into Mud Creek, if there was a likelihood of that, that they would not be stocking the reservoir above that with fish that could eventually get into Mud Creek. And why would that be?

A. Because of the genetics. They just want to be doubly sure that we're not going to be diluting our native stock. So they have multiple ways that they do that. They try to stock fish that are sterile, but just in case, they're definitely not putting them into live water anymore.

Q. And were there any other reasons that you identified why this is not fish habitat? Or do you think it's likely that if no grazing occurred at all in this particular area, that this would eventually become fish habitat for redband trout or other species?

A. No, I didn't see any indication that there would be suitable fish habitat. It's very -- there's no gravel in the system, it's very rocky, angular rock. It's very dry.

Q. Okay. Was there anything else that you observed when you were out there that you would like to share on this? I just want to make sure that you've had a chance -- I know you said you did a thorough investigation. I just want to make sure that you've been able to explain to the Court what you observed when

you were there.

A. Yeah. I mean I feel like I've covered it. The riparian vegetation for the most part is associated with those reservoirs. Even if there wasn't any grazing at all occurring, those reservoirs are there, and if somehow fish could get up there, they're not going to get past any of those reservoirs.

Q. I guess the only other question I guess I would have is how would you characterize the likelihood that any impacts to this particular channel might eventually lead to deleterious impacts on the perennial streams that are downslope from this channel? In other words, in Mud Creek. If the impact is up here in this area, could they have -- what's the likelihood you think they would have adverse effects down in Mud Creek?

A. Well, Mud Creek itself is -- it's a wetland complex at this point. It's beaver-filled bog. So riparian vegetation in its own self is like a sponge for sediment. It really does a really great job filtering sediment from getting into the system. So there's that. If there is any sediment coming off of this, it would likely be filtered out by that wetland complex down in Mud Creek.

Second, this is a natural channel. These channels do have sediment. It's just what they do. Again, it's going to be during higher precipitation events. And there is only so much vegetation -- upland vegetation is going to be able to do to filter that. And so I believe that the system it acting in its

capacity to do that.

Q. Okay. Thank you.

So turning now to the potential impacts of the livestock grazing that is authorized for the remainder of the season on the Hardie Summer allotment, are you familiar with what that constitutes?

A. I am, yes.

Q. Okay. And do you happen to have an opinion as to what the likely impacts would be on the riparian habitat and fish habitat within Hardie Summer allotment if that grazing were allowed to go forward?

A. Yes. Based on the data that I have available to me that I've reviewed, I don't believe that it's likely to have irreparable harm on any of those resources.

Q. Okay. Can I take you quickly through maybe some of the bases for that opinion that I know you cited in your declaration. I just want to give you a chance to elaborate just a little bit for the judge, if I may, on what the sources are and be able to have you explain to him in live testimony.

So with that, could you turn to docket 42, page 199.

So are you familiar with the methodology that's displayed in this technical reference manual, Proper Functioning Condition Assessment?

A. I am. I am.

Q. Okay. And can you just provide a succinct overview of

what that entails and what the purposes of it are.

A. Sure.

PFC assessments rate the physical function of a stream as it relates to the geomorphology, which is the soils and the landform, the vegetative characteristics, and the hydrology. It looks at all of those components and we come up with a rating that -- we have three ratings; nonfunctional, functional and at risk, and proper functioning condition.

And proper functioning condition means that the system has either adequate landform, woody vegetation, or wood to dissipate stream energy. When you can dissipate the stream energy, you do things such as filter sediment. You can allow for deep-rooted vegetation to establish, flood plain recharge, different functions such as that.

Non -- and again, the ultimate test or the ultimate result is that that system could withstand a moderately high flow event, such as a 25-year flood event, which is a flood that is likely to occur once every 25 years.

Nonfunctional means that that system clearly has none of those attributes present. And functioning at risk, it can -- it's functioning, however, there is one or more attributes that put it at risk of unraveling during a high flow event.

And what we do -- we have a thermometer on the back of our form and it helps to show on a scale where you fall on that.

Nonfunctioning is at the very bottom of that thermometer, functioning at risk is somewhere in the middle, and proper functioning condition is sort of two-thirds of the way up.

And at the top of that thermometer, if we draw the rating at the very top, or closer, you're getting closer to a potential for the system.

Q. Can you describe what that means briefly.

A. It would be the best that that system can do, depending on the channel type it's in. Sometimes there's altered potentials if you're in a highly -- you know, if there's a freeway running right next to the stream. So you have to look at the capability of that system and the potential of that system.

Q. Okay.

A. So if you're at the end of potential, it's close to potential natural community, essentially.

Q. And do the results of these kinds of assessments -- first of all, are they widely done and widely accepted based on your experience among --

A. Yes, I -- yes. My experience is that they're widely done. The Forest Service, the BLM, and the National Resource Conservation Service all subscribe to this methodology, and it's been spread across the west; so --

Q. And is it widely cited, in your experience or knowledge?

A. It's widely used. I'm not sure if it's -- I honestly don't know how many scientific papers use it.

Q. Thank you.

And I noticed that this particular PFC assessment technical reference is dated 2015, after the assessments that were done on the creeks in this litigation were carried out, and I believe those were done under the first edition of this particular reference.

To your knowledge, were there any substantial differences between this particular reference manual and the earlier one that would relate to the outcomes and the results of the PFC assessments that were done for these allotments?

A. No. It's the same methodology. This technical reference gave more examples. It expanded upon the science behind each indicator. It was just a more thorough explanation.

Q. Okay. And do the results of these types of assessments provide useful information in evaluating potential effects of livestock grazing in fish habitat?

A. They do. It -- so livestock grazing, some of the most direct effects grazing is going to have is going to be on vegetation and channel morphology to channel form. And so when you're looking at two of those components here, it really helps us clue in to where we might have some issues from grazing.

Q. So are you familiar with the assessment that was done on the Big Fir Creek?

A. I am.

Q. Okay. And does this look like the result of that assessment?

A. Yeah, the first page of it.

Q. The first page of it. Thank you.

A. Yeah.

THE COURT: And this is docket 41-8; is that right?

MR. ODELL: I'm sorry. Is that correct?

MR. RAMSEY: Correct.

MR. ODELL: 42.

THE COURT: 42-8.

MR. ODELL: 42-3, I believe, Your Honor.

THE COURT: All right. There's some writing on it.

MR. ODELL: Sorry. Yeah. It's hard to see.

THE COURT: All right. 42-3 is what we're looking at?

MR. ODELL: I think it's 42-3. Yes, Your Honor.

THE COURT: All right. Thank you.

MR. ODELL: Yeah.

BY MR. ODELL:

Q. So can you just briefly describe the results of this PFC assessment for the Court.

A. Sure.

I don't know if you can see the last page on this or not, but you'll see that it's rated at the very high end of PFC, close to potential.

THE COURT: And this is from the 2006 evaluation; right?

THE WITNESS: Yes, it was from 2006. Yeah. And that line indicates where they felt that the system was at.

BY MR. ODELL:

Q. And is that significant, in your review, that it received such a rating?

A. Yes. That's a pretty impressive rating. It shows that the system was close to what it could possibly be.

Q. Is it common for a stream to receive this particular rating, in your experience?

A. I wouldn't call it common, no.

Q. Can we go to attachment 6, which is at page 396, and that would be docket 42-6.

THE COURT: Although, before we leave that --

MR. ODELL: Yeah. Please.

THE COURT: We were talking, Ms. Davies, that it was from 2006. Was that before or after the August 2006 fires?

THE WITNESS: I believe that was before the fires; however --

THE COURT: It was done in June?

THE WITNESS: What's that?

THE COURT: Because it was done in June?

THE WITNESS: No. This was done in August. I think it was just a week or so -- I'm not sure a hundred percent when

the fire actually burned. I believe it was a couple weeks before. But the fires did not burn through these drainages.

THE COURT: Okay. Thank you.

BY MR. ODELL:

Q. And are you familiar with this particular PFC assessment that was done for Little Fir Creek?

A. Yes, I am.

Q. Okay. And would you like Mr. Ramsey to go to the final page of this as well so you can describe the results?

A. Sure.

Q. Okay. That is page 403.

THE COURT: Now we're looking at Docket 42-6.

MR. ODELL: 42-6, Your Honor. Yes. The PFC assessment for Little Fir Creek.

BY MR. ODELL:

Q. So when was this done and what were the results on this particular assessment, please.

A. This was done in 1999, and again, it rated very high. They found that it had great ground cover, a lot of woody species. Yeah. They just found it to be close to potential.

Q. Okay. Were there photographs taken at the time of these assessments when they were done?

A. Yes. They took photographs for both.

MR. ODELL: Okay. Mr. Ramsey, can you please pull up page 387.

And that would be docket 42-4, Your Honor.

THE COURT: Thank you.

BY MR. ODELL:

Q. And can you describe what you see in this photo. I'll just show you a couple of the photos that were taken at this time.

But what do you see in this that -- and how does it relate to the assessment rating that was given?

A. This is -- you can see in here a lot of woody vegetation, which is still apparent today. You can see the -- where the green line is sort of at the edge of that gravel bar, that's where your perennial line of vegetation is established, and that's, it looks like, a hundred percent willows.

Willows have incredible rooting, kind of like rebar almost. So that's really a great stabilizer. When you have a lot of wood -- or I'm sorry. I call it woodies, but I'm referring to shrubs, riparian shrubs. You have a lot of that material, you just have a really stable streambank.

And so that's one -- and in here, you can see that the question of woody browse at this time, you can see that there's no browse. There is no indication that cows are in here chewing on the willows at all.

MR. ODELL: Can you go to the next page, please.

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BY MR. ODELL:

Q. Okay. In this particular picture, can you just briefly evaluate what you see there.

A. Yeah. Sure.

So in here, I see, again, it's a rocky channel. So I think that's the one take-home message here, is we have a lot of rock and we have a lot of wood, and that combination is just -- it's a really stable channel, which is characteristic of a B-type channel, which is predominantly what's in Hardie Summer.

Q. Can I just ask you to clarify that. When you say B-type, you mean under the Rosgen stream classification system --

A. Correct. The Rosgen classification.

Under that classification, B falls into areas that are moderately entrenched, moderately gradient channel, and this has the boulder and cobble and gravel bottom.

Q. Great.

MR. ODELL: Can you please now turn to page 404, Mr. Ramsey.

Now we're turning to docket 42-7, Your Honor, for photos that were taken in connection with the Little Fir Creek PFC assessment.

THE COURT: And when were these taken?

THE WITNESS: These would be in 1999

associated -- they took them at the time of the assessment.

THE COURT: Okay.

BY MR. ODELL:

Q. And I know the quality of these photos is not ideal, but can you just tell us based on what you can make out from these photos --

A. Yes.

Q. -- what elements that would have led to a PFC assessment rating of high for this particular creek.

A. Yeah. Unfortunately, the shade makes it hard to see the pictures.

But you can see in the back there's a lot of willows again. In the foreground you can see some willow trees on the top. And the bottom is really difficult to tell in there, but you can see the shade, the willows all along the channel.

And the next group of pictures is much better.

MR. ODELL: Can you move to the next page, please.

THE WITNESS: Here you can see, you know, again, a very stable rocky bottom channel. You have wood in the form of aspen right along the stream, and multiple age classes of that aspen stand. You just have a vigorous system.

BY MR. ODELL:

Q. Okay. And I believe now we're looking at page 2 of 42-7. Thank you. For the record. Just want to make that clear.

And how do these photos relate to what you've seen more recently, say, for example, on Little Fir Creek when you visited?

A. Little Fir -- well, so this is from 1999, so these trees are -- I can't say this specific tree, but the trees in there are bigger. You have more large wood.

And -- but again, the channel is similar. You have that same channel shape, rock bottom, and large wood. That aspen is now -- you have areas where that aspen has fallen into the creek which makes good fish habitat and so --

Q. And were these PFC assessments for both Big Fir and Little Fir done during a time of active livestock grazing similar to what's authorized for 2019 in the Hardie Summer allotment?

A. Yes. It was during the permitted period of use on the allotment --

Q. Thank you.

A. -- when it was --

Q. Can we now turn to some more photos that are aerial in nature taken over time.

MR. ODELL: Mr. Ramsey, it would be PI supplemental Exhibit No. 14.

THE WITNESS: I just want to clarify. That was taken during a time when the livestock were permitted across the time -- that's what you were asking?

BY MR. ODELL:

Q. Yes, I was asking. Yes. Thank you very much.

A. Yeah.

Q. Okay. Thank you.

Apologies, Your Honor, for the delay.

Do you recognize the series of photos that are -- well, recognize this photo and the subsequent ones?

MR. ODELL: Can you just quickly scroll through 1 through 4, Keith.

THE COURT: And we're on docket 64-14.

MR. ODELL: Correct.

THE COURT: Your Exhibit 31.

MR. ODELL: Yes, Your Honor. Thank you.

BY MR. ODELL:

Q. So what -- do you recognize these photos? And what do they depict, Ms. Davies?

A. Sure. Let's go back to that first one.

Q. Okay.

A. That gray, black, and white one. It was from 1988. And you just have to look a little carefully.

You can see -- I can make the stream out. I don't know if everybody could -- that line of vegetation that looks like -- in the middle of the --

THE COURT: You're welcome to draw on the screen.

THE WITNESS: Oh, yeah. How can I just --

THE COURT: Just press.

THE WITNESS: Okay. So right in here -- I don't want to touch too much, but right in there following that line, you can see the vegetation. And you can see gaps. You can see gaps in the canopy in 1988. There is quite a bit of vegetation in there.

But I'm not going to draw -- I'm going to -- right here you can see, you know, where it's open, more open, one of the more obvious areas. And then, again, in here, there's also some more open areas in 1988.

If you go to the next photo --

BY MR. ODELL:

Q. Can you just briefly before you -- can you -- at the end, now that we're done, can you just do a line where the creek basically is --

A. Sure.

Q. -- just to make sure we're all looking at the same thing.

A. Okay. Sure. So --

Q. Right. Okay.

A. Right here.

Q. Just want to make sure. Right. That's the basic course of the stream there.

Okay. Thank you.

A. Yeah.

MR. ODELL: Now to the next one, Keith.

BY MR. ODELL:

Q. And then how --

A. Delete that?

THE COURT: You see the arrow in the upper right-hand corner? Clear.

THE WITNESS: Okay. So here we have the same stream in 2005. And you can see those areas that I had pointed to earlier, they're filling in. They've filled in quite a bit, actually. That area up here is almost continuous. That area down -- I lost where I was at, but I think it was in here is filling in. You're getting more and more cover. Those willows are expanding through time.

BY MR. ODELL:

Q. And that's what we're seeing here in the green vegetation along the streambank are willows, for the most part, or --

A. Yeah. Towards the upper end, upstream is -- this is upstream, where I just touched, and this is downstream.

Q. Okay.

A. So the upper end, you have a lot of aspen in there. And this whole hillside, you can see it's pretty thick. That's all aspen as well. But the aspen is really over the stream and interacting with the stream at the northern third.

Q. And does aspen have a positive effect as well on the

stream?

A. Oh, yeah, tremendous effect. The same rooting capabilities for aspen, but also for fish. There's not many places in the high desert where we actually get trees to fall into this stream. And so you have a lot of fish habitat that's being formed as those trees fall in. They act as hydrologic modifiers so you get gravel sorting, you get pool development, plunge pool. Yeah, it's important fish habitat.

So again, this is just moving through time. This is 2013. Those areas are just filling in more and more.

The base -- the biggest, to me, change was from 1988 to 2005, and then here we're just sort of filling in as we go.

Q. What --

A. This was 2013, so grazing -- these allotments were still being permitted for grazing use.

Q. And that's at page 3 of docket 63-14. Okay.

THE COURT: 64-14.

MR. ODELL: 64-14. Thank you, Your Honor.

Can you go to the last page really quickly.

BY MR. ODELL:

Q. Anything you want to note on this? This was just two years later but --

A. Well, it's two years later, but it's after grazing has ceased. And so I just -- again, just marching through time, things are -- I personally didn't see much difference between

2013 and 2016, but I'm sure they are still getting bigger, expanding as they go.

Q. Right. But not any real difference, you could tell, in the trajectory from the time grazing ceased through 2000 -- and you said this is '15 or '16?

A. This is 2016. That was the last -- we didn't -- this is from Google Earth and that's the last year that they had available.

Q. That's last year. Okay. Thank you.

So just generally in speaking --

MR. ODELL: Can you go back to the first page of this exhibit real quick.

BY MR. ODELL:

Q. What would you describe as the significance of the fact that the photos show that it's filled in as you pointed out over time, especially with respect to riparian conditions and the health of the stream and fish habitat?

A. Sure.

So I just -- I pointed that my arrow was in the wrong spot. This is the one I really wanted to point to that had filled in. You can see it really great in the next photos but...

So what this is telling me is that during the time that grazing was authorized, or the years that grazing was authorized, woody plants were expanding. Our management allowed

for that to happen. So that's about all I can say. Our grazing management was allowing for an improvement in riparian condition.

Q. Would that have been likely to occur if the willows had been irreparably damaged from massive amounts of degradation and grazing throughout that period?

A. No. My experience is that if you're doing that much damage to riparian -- or to willows, your area shrinks. It doesn't expand.

Q. I think we also have some aerial photos at Exhibit No. 9, PI Supplemental Exhibit No. 9, please.

Okay. This is Little Fir Creek. Can you describe what the series of photos here show.

A. Yeah. Let me just -- there we go -- clear this.

Okay. So in Little Fir Creek, there is a cabin just downstream. Again, this is upstream and this is downstream and there's a cabin just off to the left. This area is -- I'm sorry. I have that backwards. This is upstream and this is downstream. So left is upstream and the right is downstream.

Q. Okay.

A. The cabin is off to the left.

This area is an open area. I believe there's a road that -- historic road that would come down to that cabin through this aspen. Again, I'm not really sure why that's an open area, but you can tell there's very little cover on it in 1988.

And it's approximately -- I measured it with Google Earth. Just my estimation, visually, is approximately 1200 -- or 1,249 feet at that time, and that line -- that blue line is where I measured.

Q. And that is signified in the textual box at the top of the page; is that correct?

A. Yes.

Q. And then did you do a similar estimate with respect to the following pages?

MR. ODELL: And, Mr. Ramsey, can you scroll through those. Thank you.

THE WITNESS: Yes, I did.

So as we move through time, in 2001, again, I think that's the -- in this photo series, that's the biggest leap we have. It goes down to about 429 feet. You can see the blue line where I was drawing, the open areas. Sorry. My blue dot is in the way. But it's approximately 429 feet by 2001.

BY MR. ODELL:

Q. And the last photo was taken when?

A. That was 2001.

Q. But the one before that. I'm sorry.

A. 1988.

Q. '88. So in the 13 years.

A. Yeah.

Q. Okay. And then can you continue to explain what these

other ones show as we go through the lapse of time.

A. It's just continuing. So this is in 2005. It's just moving -- you're still continuing to see expansion of that woody. It's not nearly as great as the first picture was, but, again, these pictures aren't as long either, the time frame.

Q. And there was active grazing going on at this time?

A. Yes, at -- yeah.

Q. And can you go to the last one, page 6.

Okay. And what year was this taken?

A. This is 2016. So you can see it's down to 374 feet. And I think it was pretty similar in 2013, which is the last -- the photo we just kind of jumped through. But it was close to about the same.

So I think we're expanding through time, we're becoming either -- it's either expanding -- depending on what year you're looking at, it's either stable or expanding.

Q. And no real meaningful difference that you could tell during the years that grazing was occurring on that allotment and since grazing has ceased; is that correct?

A. I could not see, no.

Q. Okay. Thank you.

Do you wish to go to the other aerial photos on Little Fir?

A. Sure. We'll just look at it really quick so you can see the overview.

This is a pretty -- we're looking at it pretty closely, but it's a very small representation of the entire stream.

Q. Okay. So when is this shot?

A. This is in 2013. And for the most part, here's -- this is the area we were just looking at, that open area there.

But for the rest of it, from the private land to the other private land boundary, you can see again -- I'll just draw right underneath it so I don't cover the stream. But, again, here is our channel.

Q. And for the record, this is docket 64-15.

A. And you can see that the willow cover is pretty much continuous through. There are a few open areas, but for the most part, dominated -- it's definitely dominated by willows with a few open spots.

Q. And the next page?

A. And, again, I said willows, but there's aspen in there as well.

Same thing. This is 2016 so -- and again, I didn't see a significant difference between 2013 and 2016.

Q. Okay. Can you go to docket 42 at page 38.

Are you also familiar with population data that Oregon Department of Fish & Wildlife has collected with respect to the Blitzen population of redband trout in this area?

A. Yes. I'm very familiar with this document.

Q. And we are now on -- at docket No. 42-1, page 27.

And is there anything in there that you wanted to point out with respect to the population at issue?

A. Sure.

Well, here you can see that the ODF&W rated this as very low, either low or very low for any risks to this species.

Later on, this document breaks out -- well, this -- the Blitzen -- let me just back up.

The Blitzen SMU, species management unit, is what the fish within the Hardie Summer, Mud Creek, all those, they fall in that population unit, and that's what -- the level that they're measuring that at. ODF&W measured these, collected the data from 2007 to 2010 in the --

Q. May I just interject?

Is that a time during which active grazing was going on in the Hardie Summer and the Hammond allotments?

A. It was.

Q. Okay. Thank you.

A. So they measured at that time and they found that the Blitzen is a very robust, very robust population. In 2008, I believe it was 2008, they found that the abundance criteria was exceeded by two orders of magnitude, which is considerable. I believe later in this document it calls the Blitzen the crown jewel of Oregon redband trout. It's a very -- it's the best,

it's the best in our area.

Q. And that Blitzen assessment of the population is in the final row, on the bottom row, I should say, of table 2-11 on that page?

A. The -- what was? I'm sorry.

Q. The bottom row. I just want to make sure I'm looking at the right spot where it says low and very low.

A. Oh, yes. Yeah. Yeah.

Q. Okay. Now we're at docket 42-1.

Okay. Do you recognize this?

A. Well, this is -- I think maybe we're wanting to look at page 175. Or this is for -- this is not in the Blitzen.

Q. 174?

Can you just describe what you understand is on those pages while we're moving toward them?

A. You just passed it.

Q. Okay. Great.

A. Yeah. Again, it's -- it lists the -- it talks about the threats to the Blitzen population, and it does list livestock grazing as a threat. And it's important to note that livestock grazing, while it can be a threat, certainly, they go in to specify where those threats are and, really, in the system where the real concerns are.

The lower Blitzen in the Malheur refuge has a lot of canals. Water has been manipulated quite a bit in the refuge.

And so that is one of the concerns down there. And they talk about historic grazing practices and that these systems are still recovering from historic grazing practices, and that where the concerns are, I believe, for any current grazing practices were not where BLM's authorizing grazing use.

Q. Can you go the next page.

Does it indicate here where the particular areas of concern with are? In that last sentence under 2e, land management.

A. Oh, yes. So it says, "Current grazing practices on the refuge in the Steens Mountain are much improved though riparian conditions on some areas are" --

THE COURT REPORTER: Slow down.

THE WITNESS: Sorry.

-- "slow to recover. Riparian condition is identified as an issue of concern in Lower Bridge Creek, Blitzen between Bridge Creek and Canal and Krumbo Creek, Lower Krumbo Creek, the Diamond Drain, lower Kiger Creek, and Cucamonga Creek."

BY MR. ODELL:

Q. And are any of those within the areas where BLM has authorized grazing on the Hammond improvement allotments?

A. No.

Q. And that's docket 42-1 at page 174.

And then, finally, are you familiar with any water temperature data that has been collected, in particular, whether

or not the Department of Environmental Quality has listed streams under section 303 of the Clean Water Act for concerns with water temperature in this area?

A. Yes.

In the Hardie Summer allotment specifically, the only 303(d) listed stream is Little Bridge Creek, and they listed that from the mouth. When they listed it, it was listed from the mouth to the headwaters. The indication from the 303(d) list was that the temperature data where that listing came from was taken on the refuge, but that all other temperature above and below that point were actually meeting the standard.

Q. And did BLM do any active monitoring in that particular area itself in the area where it was engaged in active management?

A. Yes. So BLM went and we measured temperature starting at the downstream end of our management, so between the refuge and the BLM boundary, and that was meeting standards. I believe that was from 2002 to 2005, that first effort was at that point, and it was meeting standards at that time.

They went back out and did it again in 2017 and 2018, in the same spot, but they also added it -- oh, here we go. So this is that spot, and the second time was up here.

That's closer to the upper extent of perennial water, which is important. To measure temperature, you want to do it in perennial sections. And when we measured it at that time, it

was meeting the standard as well.

Q. And that is identified as, for the record, 64-11.

Thank you.

And were any of the fish-bearing streams within the Hardie Summer allotment where grazing is authorized listed as part of a section 303(d) stream where water temperature was the issue?

A. No.

Q. No. So on the basis --

A. Well --

Q. And then I wanted to ask you quickly about --

THE COURT: Did you want to clarify anything?

THE WITNESS: Yes. Fish Creek is also listed. So let me clarify that's un-BLM-managed land. So Fish Creek was listed for -- as 303(d) listed, but Fish Creek is not run on BLM-managed land.

BY MR. ODELL:

Q. I'm not -- okay. I'm not sure I understand what you're saying.

A. It's --

Q. Fish Creek is listed. Is that involved in the areas where grazing is authorized?

A. Yes. However, that area is entirely on -- or not -- on private land. While it's within the allotment, it does not run on BLM land whatsoever.

Q. Okay.

A. We don't collect data on private land.

Q. Okay. So that's private land?

A. Yes.

Q. Okay. Thank you.

And outside the management authority of the BLM. Is that how that works?

A. It's within the allotment. We don't have any -- I don't know exactly how that works. We don't collect data on private land; so --

Q. I understand.

A. Yeah.

Q. Okay. Thank you.

Sorry if I was asking you to go outside your area of expertise there.

A. That's okay.

Q. And then I believe there's been an allegation about the potential trampling of redband trout redds by livestock in this litigation by the plaintiffs.

And without commenting on the potential likelihood of that just in general, do you have an opinion -- and can you bring up Exhibit No. 4 -- do you have an opinion as to whether or not it -- to whatever extent it might be likely to occur, in general, why you're -- why you have an opinion as to the likelihood of it not occurring in this particular year?

A. Yes. So redband trout spawning begins in the spring. They're going to be moving -- starting to spawn in relation to water temperature, rising water temperatures. And so they'll be spawning and then the eggs will stay in the gravel for about four to seven weeks. They'll be finished with spawning, and the eggs will have emerged -- the eggs -- the fish will have emerged from the gravel before July 15th.

I talked with David Banks, who is the fish biologist for the Oregon Department of Fish & Wildlife in this area just to confirm that my understanding of that is correct, and he said, yes, they should be very likely to be complete by --

THE COURT: And how long do the newly-hatched juveniles remain in that area?

THE WITNESS: They would stay there to grow probably through the -- to the fall. There's really very little information on the movement of fish in this region. So whether or not they all move down -- but they would be in there through the season.

BY MR. ODELL:

Q. And just to clarify for the record, we are looking at document No. 64-4 in the record. And what is that? Can you just briefly describe what that document is we're looking at?

A. Right now?

Q. Yes.

A. This is the conversation record that I documented

between myself and David Banks, ODF&W.

Q. That you just described. Okay.

So on the basis of -- well, and one other question I did want to ask you is you also said earlier, I believe, when asked if you had been on the ground that you had visited Big Fir Creek and Little Fir Creek recently. How many times did you go to those particular locations in the last several weeks?

A. I've been to Big -- or Little Fir Creek one time, and Big Fir Creek twice. Three times. Sorry. Three times.

Q. And does anything that you observed on those visits have -- has that affected your evaluation of potential impacts from grazing during the 2019 season on these allotments?

A. Yeah. It was really great to be able to see it so I could compare that to what I was seeing in the photos from 2006 and 1999 and compare that, and also ground truth the aerial photos that I was looking at.

And so, yeah, being able to go out on the ground and ground truth all of that and to see that these impacts, that the photographs and the PFC assessments were inline with what I was seeing today, that those -- yeah. I would agree.

Q. And are the photos that are taken at similar locations over time particularly instructive in trying to determine trend?

A. Yes, they would be.

Q. And how so? Why would you say?

A. Because you can see change over time better.

Q. And is that a more objective evaluation based on seeing photos over time as opposed to, say, a more qualitative evaluation?

A. For sure. You can actually -- if I had time, you could actually measure that very, very quantitatively with digital methods. But, yes. You have proof, quantifiable proof that things are changing versus looking up and thinking you might be seeing something or trying to interpret what you're seeing.

Q. Right. So on the basis of these various data points and evaluations and assessments and photographs that we've just discussed during your testimony, do you have an opinion, I believe you said, on the potential likelihood of an adverse effect on the riparian habitat on the redband trout habitat within the Hardie Summer allotment? And so I just wanted you to confirm, in conclusion, what that opinion is, and just briefly describe how the various factors that you cited influence that opinion.

A. Sure.

So first and foremost, the population data in -- well, let me tell my -- my opinion is that I don't believe that there's going to be -- it's very unlikely to have any adverse impact on the fish population, redband trout populations, in this area.

The fact that the populations are so robust even

though riparian areas were being grazed is indicative that we're not going to have that kind of effect on redband trout populations.

The fact that PFC assessments and those photos show robust vigorous vegetation, did not see excessive browse, did not see really much of any browse on any woodies that I could see -- my reconnaissance in the area, I didn't notice livestock trailing, which is what you would see if livestock were really congregating down in that bottom. You would see livestock trails, and I did not see trails. What I saw were crossing where livestock might cross a stream, but not following up and down the creek bed.

Q. And is that -- just to be clear, what's the distinction you're drawing between trailing is moving up and down the stream as opposed to a crossing where it's a fairly narrow place where they cross over the stream?

A. Correct. Yes.

So I didn't see much indication of that on the ground.

The aerial photos through time show that we've had -- we have -- today we have a lot of woodies in that system, we had it years ago, and we've had it -- you know, it's been increasing over time. So those were the primary reasons or basis for my opinion.

MR. ODELL: Okay. Thank you, Your Honor.

I have no further questions at this time.

THE COURT: Cross-examination.

MS. BROOKS: Thank you.

CROSS-EXAMINATION

BY MS. BROOKS:

Q. Okay. I'm going to try to use the ELMO for this.

Okay. So thank you for coming up here, Ms. Davies, to testify.

I see that you hold a BA in marine science. Have you completed any advanced degrees?

A. No. My interest has always lied into applied management and so I've really dedicated my career to doing that on the ground.

Q. And have you published any peer-reviewed scholarly articles about fish biology?

A. No, I haven't.

I just want to correct one thing. I don't have a BA. I have a BS.

Q. Oh. BS. Sorry about that.

And how about peer-reviewed scholarly articles on redband trout?

A. No. Again, my experience is all about applied management in Burns.

Q. And how about scholarly articles about sagebrush ecology?

A. No, I have not.

Q. Okay. Thank you.

And so you worked on the Burns district as a fish biologist for about 14 years; is that right?

A. About 15, if you count --

Q. 15 years.

And would you say you're pretty familiar with the streams on the Hardie Summer and Mud Creek allotments?

A. I'm familiar in the -- as I described, I visited them several times and reviewed all the data we had on them.

Q. And would you say that you're pretty familiar with the PFC assessments that have been done on the allotments?

A. Again, I've reviewed them. Yes.

Q. Were you involved in preparing any of the PFC assessments that have been done on those allotments?

A. No, I was not.

Q. So you haven't prepared any formal PFC assessments for the Hardie Summer and Mud Creek allotments; correct?

A. Correct.

Part of my job, though, has always been to look past or look at the past assessments that have been done, historic assessments, and use those. So while I haven't specifically been part of the team for these, I have a lot of experience reviewing assessments that other biologists have done.

Q. And as for the rangeland health assessments, would you

say that you're pretty familiar with the rangeland health assessments that have been done on the allotments?

A. I have reviewed them. Not -- yeah. I've reviewed them.

Q. And were you involved in preparing the 2018 Hardie Summer rangeland health assessment or the 2018 Mud Creek rangeland health assessment?

A. No, I was not.

Q. Okay. So I just want to return really quickly to some of the stuff you started with in your direct examination about your visit to Dry Creek or the -- and the Grandad reservoir.

When did you do this detailed -- this visit and detailed evaluation of the Grandad reservoir site?

A. Below the reservoir? Is that what you're specific --

Q. Uh-huh.

A. That was actually yesterday.

Q. Okay. And did you document the conditions that you observed in conjunction with that trip?

A. I just -- we just walked the stream and looked at it.

Q. Okay. And have you done a site visit to that area before?

A. The -- no, not the extent that I did yesterday.

Q. Okay. And in your direct testimony you testified that this creek -- I believe it's Frazier Creek that Dr. Kauffman referred to as Dry Creek -- or Lambing Creek, sorry. Lambing

Creek.

A. That's okay.

Q. -- that Dr. Kauffman testified or referred to as Dry Creek. You said that Lambing Creek was not fish habitat; correct?

A. Correct.

Q. So I would just like to present this map that Mr. Odell previously pulled up, and I'll zoom in a little.

Okay. So I don't know if you can see this right here, but where there's that thick blue line in the key up here by the top, right here, could you just read what that says for me.

A. Sure. That says redband trout presence verified.

Q. And I just would like -- there's this little dot right down here. And what does that signify to you based on that key?

A. Sure. Well, that's right on the top of the Grandad reservoir, and so that's where it's stocked with rainbow trout. The map for -- I don't know why it's calling it redband trout. It's stocked hatchery fish in that Grandad reservoir.

Q. Doesn't it say, though, by the map key that that is where redband trout presence are verified?

A. It does. But, again, it's -- if you put up the aerial photo or anything else, you'll see that that's the reservoir. It's a mapping error.

Q. Okay. And the reservoir isn't actually present on this map, is it, then?

A. No. It's just -- it's right where that blue dot is.

Q. Okay. Well, it does seem that this map indicates that there is redband trout presence in that creek without that error being identified, and you guys -- or the defense did submit this into evidence?

A. Sure. And then in the draft plan for the ODF&W fish conservation, you can -- it shows where all the presence is and it does not indicate there is any redband trout here.

Q. Okay. All right. So moving on to talking a little bit more about redband trout presence in the Hardie Summer allotment.

Isn't it true that redband trout presence has been verified in Little Fir Creek, Big Fir Creek, Lake Creek, and Fish Creek on the Hardie Summer allotment?

A. Correct.

Q. And isn't Big Bridge Creek, as it flows through the Hardie Summer allotment, also suspected to contain redband trout?

A. The actual classification is called suspected but not verified, which means they haven't seen fish there. But, yes, that's what it is.

Q. And there is -- there has been redband trout presence verified downstream of Big Bridge Creek on the Hardie Summer allotment; right?

A. In the Hardie Summer allotment or downstream?

Q. Downstream.

A. Yeah. It's -- I believe it's way down in -- not in Big Bridge Creek but just in Bridge Creek.

Q. Okay. And I think you mentioned that redband trout that use these streams are part of the Blitzen population of redband trout; right?

A. Correct.

Q. And isn't that population supposed to serve as a core population that provides a source of colonizers into other population areas?

A. Well, yes. You have to put it into context.

This is a closed basin, so it's only going to be able to go as far as the water flows. So yes.

Q. So that makes this population, that Blitzen population, especially important to the persistence of redband trout, doesn't it?

A. It's definitely an area that is important for the persistence of redband trout. It's one of the best populations we -- it's a stronghold, so we definitely want to make sure that we're managing accordingly.

Q. And so these streams of the headwaters, these headwater streams on the Hardie Summer allotment, these are -- these redband trout streams, are livestock excluded from all portions of these streams?

A. No.

Q. And so you'd say that livestock could access these streams, wouldn't you?

A. They could, yes.

Q. And you also talked about the Oregon Department of Fish & Wildlife's assessment of the redband populations and characterization of these headwaters habitats as pristine in your declaration.

But wasn't that draft plan completed on April 13th, 2018, after the allotments had been rested for four years?

A. Yeah. So that plan was -- you know, I'd have to look back at my notes of when we started that plan. It was -- it came out, but the data I know that the populations were from is from 2007 to 2010. And I want to say it was 2012. I can't say for certain when the date -- the dates were when the discussions were occurring on the habitat for that, but it was before 2018 anyway.

Q. Right. But -- so it may have relied on some data at least from the time when the allotments were being rested; right?

A. From my recollection, these were -- we were looking at all of these systems back in 2012. A lot of that population -- if you look at that report, it references WNTI 2012 quite a bit, and a lot of that assessment came from that report in 2012.

Q. Okay. And didn't you say that the report also

identified grazing as a threat to redband trout persistence?

A. Sure. That report is for a basin. Actually, it's for -- it's for the whole Malheur Lakes basin and it includes the Blitzen. So, yes, it did list grazing as a potential threat.

Q. And you also said that the -- these populations and the riparian habitat are still recovering from historic grazing in your direct testimony, didn't you?

A. Yeah. Yeah. They're still recovering from historic grazing.

Q. Okay. So let's turn to talking about PFC a little bit.

So here's the PFC guide. And this is the same one that Mr. Odell showed, it's just in black and white. I'm just going to turn to page 2.

Would you read this highlighted language for me if I can get it to show up on the --

THE COURT: Might want to zoom out a little bit, zoom back a little bit.

BY MS. BROOKS:

Q. Okay.

A. The minimum acceptable management goal for a riparian area is at least PFC because any rating below PFC indicates a condition that is not sustainable.

Q. So PFC is actually a minimum goal; correct?

A. Definitely, yeah. That's our goal, our minimum goal.

Q. And -- but it's a minimum, not, like, the pinnacle of achieving riparian standards?

A. It is what we've -- let's see. It's what the BLM has ascribed to as our minimum. Of course we want to be able to get as good a condition as we can on any stream.

Q. And have Little Fir Creek, Big Fir Creek, Lake Creek, Big Bridge Creek, and Fish Creek, in other words, the -- or Lake Creek and, yeah, Fish Creek, the redband-trout-bearing streams on the allotments, have they all been assessed for PFC?

A. No. The only streams that have been assessed is Big Fir, Little Fir, Little Bridge Creek.

Q. And were all of these streams assessed for PFC in 1999?

A. No. Two of them were in 1999 and one was in 2006.

Q. And which two streams were those in 1999?

A. Little Fir and Little Bridge.

Q. Okay. But Little Bridge isn't a redband-trout-bearing stream; right?

A. No. But from what I understand out of the two, it has more water than Big Bridge.

Q. I see. And didn't seven years elapse between 1999 and the next PFC assessments that occurred in 2006?

A. Yes.

Q. And those PFC assessments, again, just remind us which

streams were assessed in 2006 for PFC.

A. Big Fir.

Q. Only Big Fir. Okay.

And were there PFC assessments completed in 2018, like a full PFC assessment?

A. No, there was not.

Q. So the last PFC assessment that we have for these streams is 2006?

A. Correct.

Q. And not all of them have been assessed?

A. Correct. Big Bridge -- well, let me -- so we're not going to go on to private land and assess riparian condition. That's not really an acceptable thing to do unless we're invited.

And so, no, the private lands -- the Lake Creek had -- we have 400 feet of that stream out of -- I can't remember the miles -- I want to say 4.3 miles, so that is also very difficult to assess and manage for.

Big Bridge Creek is an intermittent stream, and, again, it's very difficult to imagine -- I'm sorry. It's -- it just -- we haven't done it -- a PFC assessment there. Little Bridge, we have.

Q. Okay. And so those 2006 PFC assessments, you responded to the judge's question by saying that those assessments occurred before the Grandad fire, or, well, the one

assessment on Big Fir Creek, and you stated that the fire didn't burn through the drainage.

And I'm just going to ask my co-counsel to pull up a map for you because I didn't print this one out.

And this is the vegetation mortality map, post-fire vegetation mortality map, following the -- and it's at docket 63-11, and it is showing the vegetation mortality following the 2006 fires.

MS. BROOKS: And Mr. Becker, if you could just zoom in. Can you zoom in on this, to the Hardie Summer allotment. There we go. Scroll down.

BY MS. BROOKS:

Q. Okay. So -- and you can -- so you can see the creeks along kind of in this area. You know, you can see kind of where the drainages are.

And doesn't this map appear to show some vegetation mortality after the 2006 fires --

A. Could you --

Q. -- on the Hardie Summer allotment?

THE COURT: Can you clear the marking, please.

MS. BROOKS: I think so. Oh, yeah.

THE WITNESS: It does look like that. I'm not sure why. Looking at the aerial photos you don't see any indication of fire in there.

//

BY MS. BROOKS:

Q. And could you tell us which creeks you can see that vegetation mortality around? Can you identify which creeks those are?

A. Is the vegetation mortality the pink? Is that what I'm looking at?

Q. That's high mortality. So there's also -- the yellow is moderate to high and the blue is moderate to low.

A. So what was your question? Do I see --

Q. Do you see mortality -- which creeks do you see the pink and the yellow and blue around?

A. Well, you see on this map along Little Fir and Big Fir, but I did not see any sign of fire out there when I was out there.

Q. Thank you.

And you said you were pretty familiar with the 2007 rangeland health assessment; right?

A. The 2007? Or which --

Q. The, yeah, 2007 rangeland health assessment for Hardie Summer allotment; correct?

A. I reviewed it.

Q. Okay. And didn't that assessment state that riparian conditions needed more monitoring?

A. Probably. I think so. Yes.

Q. And -- okay. And wasn't the last -- the assessment

that was -- so did more monitoring occur between 2006 and 2018?

A. No, it did not.

Q. And in particular, isn't it true that the 2018 informal monitoring that occurred occurred after the allotments had been rested after -- for four to five years?

A. Yes.

Q. Okay. And going back to the 2007 PFC -- or RHA -- sorry -- didn't the 2007 RHA also say -- recommend instituting photo points to be read every three to five years so that riparian trends could be monitored and inferred?

A. It could say that. I reviewed it, but I don't -- I didn't memorize it. I honestly don't recall that. But if you say it's in there, I believe you.

Q. Let me try and pull this up for you.

So there we go.

Okay. So this is the -- it's the 2007 rangeland health assessment for Hardie Summer, and it is in the record at -- oh, boy, hard to read that document number up there, but I think it's 29-2, if I had to guess. But it's -- it's the second round of declarations, second exhibit at page 21.

And could you just read that monitoring needs and schedule portion that's highlighted there?

A. Sure.

"Establish more riparian photo points on the key streams in the allotment and retake photos every three to

five years to assess change."

Q. And could you also actually read that second point.

A. "Ensure that utilization studies are completed yearly on riparian vegetation."

Q. And did either of those things happen between 2007 and 2018?

A. No, they did not.

Q. And isn't it true that only in 2018 were riparian photo points established?

A. Yes.

Q. And so isn't it true that without that kind of long-term photographic monitoring, it would be very hard to infer a trend, as far as riparian conditions?

A. No, I don't think so. Of course more monitoring is better, and if you have more photos and more information, it's much easier to infer trend. I will not deny that.

Unfortunately, we just usually don't have that luxury. We're limited staff and a lot of streams, so we have to use the data that we have.

So looking back over time through aerial photographs is one tool that we have to utilize to help look at trend on a larger scale. Can't look at trend -- you can't see everything in those photos, but you can get a general idea oftentimes.

Q. So the trend -- understanding trend, in your mind, is sort of a broad scale sort of inference?

A. No, not at all. I think that is just one of -- if you don't have detailed quantitative close-up data that you can look at trend, ideally that's what you're going to have, but you're going to have to make do with what you have, you can come to some conclusions with broader scale data.

Q. And do you think that those conclusions are as reliable as the conclusions would be if you'd collected the riparian monitoring that the 2007 RHA called for?

A. Well, it depends on the question that you're asking and what you want to monitor. If you're looking for riparian cover from willows, that is a very good monitoring method. It would be better -- I'm not going to deny it would be better to have that information that the RHA pointed out.

Q. Thank you.

And I also -- so I've deviated here from the PFC assessments. But considering whether even these few assessments, the three assessments conducted in 1999 and then one in 2006, whether they can really serve as a surrogate for quantitative and comprehensive monitoring, doesn't attachment 2 to your declaration, the PFC manual, specifically provide that the PFC assessment is not intended as a monitoring tool because it lacks the sensitivity to detect incremental changes in riparian vegetation?

A. Yes, and that's really interesting that you bring that up.

The PFC does not, but the paper that both Dr. McCullough and Dr. Kauffman attached to their -- or I think Dr. Kauffman attached it to his declaration points out a really great method to assess fish habitat, and that's shade. They actually recommend looking at stream shade, canopy, as an assessment for fish habitat.

So you can look at the aerial photos, look at all the data up to that point and see that shade is pretty much all covered on that stream and so therefore it's a good assessment still of fish habitat.

Q. Doesn't the PFC assessment manual, though, also state that typically fish and wildlife habitat assessments need to be done separately from the PFC monitoring?

A. Yes. And you can do it separately, you can do it at the same time. The information in the PFC assessment can help you inform those decisions. So it can help you inform that determination.

And so looking -- if you want to look at the PFC assessments, you can see that stream cover from willows is well-documented in that system. And so if we use stream shade as a surrogate measure for stream habitat quality for fish, which your own experts pointed out as a good -- as a paper to look at, I think it's a good indicator that fish habitat is good in that system in those allotments.

Q. But does the PFC assessment actually assess fish

habitat?

A. The PFC assessments assess the function of the stream, the physical function of the stream, and if you have those functions in place, if you're at PFC, you're going to allow for the attributes and processes to occur that's going to create good fish habitat.

It does specify that -- if you want biological data for your fish, no, it's not going to tell you that. It's not going to tell you the depth of pools. It's not going to tell you how many -- if there's good spawning gravel, et cetera. But it's a good assessment to help us, who are managing grazing, to know the impacts of grazing on fish.

Q. And so let's see. Okay. I'd like to pull up this PFC assessment for Big Fir Creek which Mr. Odell previously showed. And just flipping through this a little bit, where does this talk about redband trout?

A. It doesn't specifically talk about redband trout. But if you want me to point out the parts that redband trout habitat would be effective, I certainly can.

Q. No, that will be okay. Thank you.

And in addition, none of those PFC assessments considered the condition of intermittent or headwater streams like the ones that Dr. Kauffman photographed last week, did they?

A. Well, Little Bridge Creek, we talked about the

assessment there. It is an intermittent stream. So, yes, we have looked at intermittent streams in the Hardie Summer.

Q. Okay. But only that one; correct?

A. The only one we have formal monitoring on.

Q. Okay. So isn't it true, then, that BLM has collected no quantitative data regarding redband trout or redband trout habitat condition on the Hardie Summer allotment?

A. Correct.

Q. Okay. And also you said that you're -- you've reviewed the rangeland health assessments. Is there any -- where is the discussion of redband trout in those rangeland health assessments?

A. I believe there was not a specific discussion on redband trout, but, again, it talks about the habitat, PFC assessments, water quality.

Q. But no discussion of population status or trends or anything like that?

A. It did not include that, no.

Q. Okay. Let's see. And has BLM conducted temperature monitoring on the headwater streams in the Hardie Summer allotment?

A. No. No, we haven't.

Q. And so does BLM actually know whether these streams are temperature limited?

A. Well, again, we're looking at surrogate values.

Again, vegetation is going to be one of the most direct effects you're going to see from livestock grazing. And so looking at the assessment that we have on riparian vegetation, we're using that to make a determination or assumption that grazing is not going to be affecting temperatures.

Q. But it's only an assessment; right? Or an assumption; right?

A. Well, there's been -- there's been other papers. I believe even one of the -- I'm trying to remember if it's Exhibit 3 from Kauffman that talks about -- or maybe it was the Cade and Zoellick paper that talks about how riparian vegetation is a good surrogate measure for temperature.

Q. So looking again at the PFC assessment manual, and we're going to look here at page 10 -- sorry. I think I have the page number from the file version. Oh, here it is.

Could you just read this highlighted portion here.

A. Sure.

"Fish or wildlife habitat and water quality assessments are examples of additional resource assessments that may be needed to characterize overall riparian condition in preparation for subsequent activities."

Q. And attaining -- this also provides elsewhere, I believe, that attaining PFC does not -- does not mean that chemical or biological processes are unaffected. And doesn't it also state that sediment, thermal, or nutrient impairments could

be transmitted downstream?

A. Could you -- does it mean what? What was your question?

Q. Sorry about that.

So attaining PFC doesn't actually -- doesn't mean that biological processes are unaffected, correct, by management?

A. No, it wouldn't. It wouldn't necessarily mean that.

Q. Okay. And if there are effects to those qualities, to biological or chemical qualities upstream that haven't been documented through the PFC, couldn't those things be transmitted downstream?

A. The -- could you repeat that one more time? Sorry.

Q. So if there are biological or chemical effects to a river system, couldn't those be transmitted downstream?

A. If there are biological -- I just want to make sure -- or chemical effects that are occurring in that allotment, could they be --

Q. Yes.

A. Yes, you would -- if there were, they could be moving downstream.

Q. Okay. And isn't Mud Creek, downstream of Big Fir Creek and Little Fir Creek, 303(d) temperature limited?

A. It is.

Q. And don't increases in water temperatures upstream tend to cause increases downstream, as Dr. Kauffman testified?

A. Yeah. Yes. So temperatures generally always warm as you move downstream, or oftentimes they warm as you go downstream away from the headwaters.

Q. Ms. Davies, are you familiar with the Mud Creek allotment?

A. Slightly. Yes, I'm familiar with it.

Q. And isn't it true that under the settlement proposal BLM provided to this court on Friday, that Hammond Ranches would be allowed to trail 590 cattle through the Mud Creek allotment?

THE COURT: To be precise, it wasn't -- I didn't perceive it as a settlement proposal, but as a proposed stipulation to avoid the need for a preliminary injunction. The case would still continue.

MS. BROOKS: Yes, I accept that.

THE WITNESS: Yes, I understood that.

MS. BROOKS: Okay. And let's see. I think that that might be no further questions.

THE COURT: Redirect?

MR. ODELL: Thank you, Your Honor.

REDIRECT EXAMINATION

BY MR. ODELL:

Q. With respect to the questions about the PFC assessments that were done for Big Fir and Little Fir Creek, could you just clarify for the Court, were those ratings that

were given at the time those assessments were done at the bare minimum of proper functioning condition? Or where did they stand in relation to the thermometer you were talking about?

A. They were rated at the very top. They were almost at potential.

Q. So does that mean, you would say, that they're at the bare minimum of what proper functioning condition is?

A. No.

Q. Thank you.

And I know it's also been a while since those proper functioning condition assessments were done, as Ms. Brooks pointed out in the questioning, she proffered to you. But did you see anything inconsistent in your most recent visits of Big Fir or Little Fir Creeks with what is written in those PFC assessments for Big Fir, Litter Fir?

A. No, I did not.

Q. Okay. Thank you.

And could you also just briefly describe the different scales at which you evaluated these -- the streams, primarily Big Fir, Little Fir Creeks? You did mention the aerial photos that you looked at, which would obviously be a high scale resolution. But were there other bases or factors or data that you relied upon that were more site-specific, or observations?

A. Yes. So my own personal observations in the field, as well as the observations and notes in the PFC assessments.

Those photographs were very, very useful to look at as well, and then also the notes and the descriptions of ODF&W's plan itself describing the condition of the headwater streams.

Q. So is it fair to say there was a multiscale evaluation that you -- that you conducted?

A. Yes.

Q. And was there anything inconsistent in any of those scales that you looked at?

A. No.

Q. And is that significant in helping you to form your opinion that each of those different scales were in sync?

A. Yes. It helps me feel very confident in my opinion.

MR. ODELL: Thank you. No further questions.

THE COURT: Anything further, Ms. Brooks, within the scope?

MS. BROOKS: Just one question.

RECROSS-EXAMINATION

BY MS. BROOKS:

Q. But these further assessments that you're talking about, these were not PFC assessments, were they?

A. No, they weren't part of the PFC assessments.

Q. And the last PFC assessment was for Big Fir Creek in 2006?

A. Correct.

MS. BROOKS: Thank you. No further questions.

THE COURT: Thank you, Ms. Davies. Appreciate you being here.

THE WITNESS: Thank you.

THE COURT: Government may call the next witness.

MR. ODELL: Thank you, Your Honor.

We would now call Dr. Tamzen Stringham to the stand for defendants.

Thank you.

TAMZEN STRINGHAM, PhD,

having been first duly sworn or affirmed, was examined and testified as follows:

THE CLERK: Will you please state your name for the record spelling your last.

THE WITNESS: My name is Dr. Tamzen Stringham, S-t-r-i-n-g-h-a-m.

DIRECT EXAMINATION

BY MR. ODELL:

Q. Good afternoon, Dr. Stringham. And I wanted you -- if you could just start by providing the Court with your current position and a succinct summary of your professional and educational qualifications as it relates in particular to the

topics on which you expect to testify today.

A. I am currently the department chair of the agriculture, veterinary, and rangeland sciences department at the University of Nevada Reno. I also hold the Donna Anderson endowed professorship in rangeland management and grazing.

I received my PhD in rangeland resources from Oregon State University in 1996, and I've been a certified professional in range management by the Society of Range Management since 2000.

Q. Okay. And in your career, have you had occasion to evaluate the impacts of livestock grazing on riparian systems? And briefly describe what that would entail, please, or has entailed.

A. I began doing riparian work for my PhD dissertation. The whole dissertation was on riparian. And then following that, I started doing research on Steens Mountain in 1998. I continue that research to date on many of the channels on Steens Mountain.

I also do research on other riparian systems across Oregon and in Nevada, and currently engaged in two large riparian projects in Nevada.

Q. Could you just give an approximation of how many creeks you have evaluated in the Steens Mountain area as a part of your work.

A. Six for sure. Maybe more.

Q. Thank you.

And that work has spanned how many years, would you say, approximately?

A. 21.

Q. Thank you.

And then what about examining the condition and the implications of livestock grazing on the sagebrush ecosystem in the semiarid west and the great basin? What's your experience in that regard?

A. So my other job, besides riparian, is upland sagebrush ecology. I've done multiple research projects in that area. I have -- since 2007 have modeled the ecological dynamics of the sagebrush ecosystem in Nevada and southeast Oregon, over 42 million acres. I have extensive data on those projects in my lab at this point in time, over 14,000 vegetation transects, and I continue to do that type of work today.

Q. Great. I think that should suffice.

So I want to start, if we can, with your assessment and opinions with respect to some general propositions that the expert witnesses of the plaintiffs propounded to the Court in their declarations and/or live testimony, the first of which is that cheatgrass tends to increase -- and by cheatgrass, I am referring to the invasive species -- tends to increase with at least certain types of grazing, and I wanted to get your perspective on that particular proposition in general.

Do you agree that all forms of livestock grazing necessarily result in an increase in the spread of cheatgrass?

A. No, I don't.

The historical legacy grazing that occurred across the Western United States from settlement time until the formation of BLM, and then further restrictions with the passage of FLPMA certainly degraded some of the bunch grass communities, primarily below the 10-inch precip zone, and facilitated the increase in cheatgrass in those areas.

Q. Can I just stop you right there?

When you say the 10-inch precip zone, can you specify what you mean by that.

A. Yes. The Wyoming sagebrush community, which would be Mud Creek allotment, is a 10 -- 8- to 10-inch precip zone. The Hardie Summer, which is a mountain big sagebrush allotment, is a 14- to 25-inch precip zone. They have completely different ecological potentials.

Q. And when you talk about a precip zone with respect to particular inches, does that relate to how many -- what's the average amount of precipitation in a given year average?

A. Yes. That's -- it's the 30-year average.

Q. 30-year average. Thank you.

And so if you need to continue, I'm sorry. I just wanted to make sure that the Court was familiar with the term as you were discussing the kinds of grazing that can lead to the

expansion of cheatgrass.

A. Yes. Certainly abusive grazing where you remove the deep-rooted perennial bunch grasses from the inner spaces around shrubs has facilitated that increase. The type of grazing that I have witnessed on Steens Mountain since I began work there 20-some years ago is not that type of grazing.

Q. Okay. And so can you just briefly describe what the presence of cheatgrass means and what that portends for a healthy sagebrush ecosystem in general or other implications, like fire.

A. So we need to speak specifically to whether we're talking about presence, or are we talking about dominance by cheatgrass in the ecosystem that we're evaluating.

In post-fire conditions such as in Mud Creek, the dominant cover type could be cheatgrass. If you get to a point where you have approximately 200 pounds per acre, which is not a lot, of cheatgrass as your fine-fuel component, the fire -- if a fire starts, and this has been documented in the literature -- will be catastrophic or has potential to be catastrophic. And catastrophic means BLM cannot fight it from the ground, they have to fight it from the air. And the potential for stopping that fire is greatly reduced when you have that type of cheatgrass production occurring in the rangelands.

Did you want me to answer something else? I forgot.

Q. Well, yeah. Did you -- is there -- within either Mud Creek or Hardie Summer allotment -- first of all, have you visited either of those allotments?

A. I have been to the Hardie Summer. I have stood on a bridge and looked over at Mud Creek, at the burning scar, and I've evaluated photos that were provided to me by BLM of the vegetation cover type that were actually taken when they were out with the litigants on that area.

Q. Right. And what are the ecological effects on other grasses and vegetation within an area that's invaded by cheatgrass?

A. Cheatgrass is a winter annual species. It's invasive. By winter annual, we mean that it germinates typically in the fall and then it overwinters during the nongrowing period. So during the fall, it gets its roots down into the soil. Our perennial grasses don't typically do that.

And then in February, late February or so, early March, when it starts to warm up, cheatgrass has its roots in the soil and it starts to grow. It grows earlier than our deep-rooted bunch grasses that we normally have in these rangeland ecosystems, and it can out-compete other grasses for the moisture which facilitates its expansion. That's why it is -- it will become dominant at times in that 10-inch-or-less precip zone.

Q. Is it your understanding that that's the case in the

Mud Creek allotment?

A. Yes, it is my understanding, that cheatgrass is the dominant cover type.

Q. Right. And what would then be at least one effective management tool, in your judgment, to address the presence of that cheatgrass and keep it under control?

A. Well, the recent scientific work on reducing fire, reducing fine fuels, reducing the presence of cheatgrass in our 8- to 10-inch Wyoming sagebrush type such as the Mud Creek allotment, shows that we can graze in a careful manner those areas to reduce cheatgrass.

There has been research that was just published in 2014 on a similar location in Nevada where they actually reduced grazed and un-grazed pastures, they reduced the cheatgrass production from 675 kilograms per hectare to 98 kilograms per hectare, which is about that 200-pounds-per-acre range.

At the same time that they did that, they increased the bunch grass production from 69 pounds per kilogram to 531 pounds per kilogram. The ungrazed pasture, nothing changed on. It remained the same.

So they were very effective at reducing that cheatgrass production.

I also have long-term research plots that were put in in 2001 on the Catlow basin, which is southeast Steens, that I revisit every six to seven years. I was just there before I

came here remeasuring the plots.

And those plots indicated that inside of those long-term exclosures, we have four to six times more production of cheatgrass than we do outside.

Q. So based on the study that you referenced in Nevada, would you say that it's -- is it fair to say that livestock will consume cheatgrass?

A. Yes, they will.

Q. Okay. And would it be a proper, in your judgment given the potential for fire above the 200 threshold that you mentioned, appropriate prescription for Mud Creek to rest it for many years?

A. That concerns me greatly. Cheatgrass will continue to expand production.

So the way cheatgrass ecology works is the plant puts down a lot of litter. So it grows, it puts down a lot of litter, because it's an annual plant, and it has the ability -- and it puts out a lot of seed and it has the ability to germinate in its own little layer without ever touching mineral soil. And the litter layer that is created by cheatgrass smothers out sagebrush seedlings that we would like to have growing, smothers out other bunch grasses that we would like to have growing, and it is an effective method that cheatgrass itself has developed in maintaining dominance and control of sites that it is now quite present in.

So not grazing it just facilitates this continued cycle of reproduction of the cheatgrass on that system. Grazing is one of the tools we have, if it's done correctly, to lick that litter up, get rid of it, get rid of the seed bed for cheatgrass, and promote the native plants that we like to have present.

Q. And is that consistent with the results of this recent study in Nevada that you referenced?

A. Yes.

Q. Okay. And then can we -- just turning to Hardie Summer allotment, you said you were out there recently on a visit.

Did you happen to see any cheatgrass in that allotment during your visit?

A. I did not.

So we were stopped on the uplands. We walked the riparian and then we stopped on the uplands in a similar location that Dr. Braun was referencing as being good sage-grouse habitat. I did not see any cheatgrass present at that point, which means I probably would have to go digging for it to find it.

The Hardie Summer allotment's lowest elevation is about 5800 feet, and then it goes up in elevation from there. And as I stated earlier, the -- it's a 14-inch, maybe 12-inch on the very low end, but likely 14-inch precip and above. And the

soils that are mapped across the Hardie Summer allotment are cryic temperature, very cold. Cheatgrass does not do well in those cryic soils. So the opportunity for cheatgrass to become dominant there would be very, very, very slim.

Q. And when you make that assessment, does that allow for or incorporate the likely or the authorized grazing for 2019 on Hardie Summer or the grazing that's occurred on that allotment certainly since the early '90s through 2013?

A. Yes. So when I was looking at the sagebrush part, the mountain sagebrush communities on Hardie Summer, I was assessing the bunch grass presence density that was occurring in that community.

When we see areas that are overgrazed, where they have been abusively grazed, the bunch grasses are up underneath the sagebrush and hiding from being nibbled. And in the Hardie Summer allotment, bunch grasses were growing out in the inner spaces, they were growing under the shrubs, there were a high density of bunch grasses. The production was really quite impressive of the various different species of native plants we would expect to find there.

In addition to that, the ecological potential of the Hardie Summer allotment, in an average rain year, is to produce somewhere between 1100 and 1500 pounds of plant biomass. So I calculated what the carrying capacity of that allotment would be with that type of biomass. I reduced it by 50 percent, so give

50 percent to plants that cattle would not eat. Right?

So I reduced that and I ran a calculation on that as to how many days you could graze cattle out there to 50 percent -- before you would hit a 50 percent utilization, and it is in excess of 190 days at the current stocking rate that is proposed, number of head.

Q. Which is more than six months?

A. Right.

Q. Okay. Just for clarification.

A. Right.

Q. And then to just put -- maybe put a bow on that, in conclusion, your assessment of the likelihood of the grazing that's authorized for 2019 on Hardie Summer leading to an invasion of cheatgrass on that allotment, how would you characterize the likelihood of that, in your opinion?

A. Slim to none.

Q. Slim to none. Thank you.

Now, in light of what you just testified to with respect to cheatgrass both on Mud Creek and Hardie Summer, which obviously are different animals because of their different conditions, how does the potential for the grazing authorized in 2019 on the Hardie Summer allotment relate to the risk of fire? We also heard some generalized propositions from the plaintiffs' experts that livestock grazing increases the risk of fire. How does -- how do you view that and what's your opinion on that

subject?

A. I have yet to be able to wrap my mind around that statement, that livestock grazing increases the risk of fire other than the abusive grazing that we no longer do.

THE COURT: Didn't the BLM make a finding that livestock grazing increases an economic incentive to deliberately set fire? Wasn't that one of the BLM findings in 2014?

THE WITNESS: I can't speak to that.

THE COURT: Okay. If it was, would you agree or disagree that livestock grazing can increase an incentive to unlawfully set a fire?

THE WITNESS: Well, it would be an unusual event, but I suppose it could happen as it did -- was alleged to have happened on this particular situation.

THE COURT: And I do think it's in the record that that was one of the findings of BLM in 2014.

MR. ODELL: And thank you, Your Honor.

BY MR. ODELL:

Q. I mean I guess just to clarify, I'm asking about ecologically and not involving an incident that is anthropogenic in that direct way.

A. I think that's what my comments are referring to is that I don't anticipate that happening.

Q. Okay. Can you explain why, as an ecological matter,

absent that type of event occurring that the judge asked you about, that fire is not likely to be increased as a risk on Hardie Summer as a result of the grazing authorized in 2019?

A. So you're asking me -- I'm going to repeat this back to you. I want to make sure I got it correctly.

Q. Please.

A. You're asking me if grazing will reduce the risk of fire on Hardie Summer?

Q. I was asking you for the basis of your opinion that -- I understood your testimony to be you thought it was a very low likelihood that fire risk would increase on Hardie Summer --

A. That's right.

Q. -- based on grazing. I just wanted -- if you could explain that.

A. Sure.

Livestock eat grass and they prefer grass and they're going to reduce the fine-fuel load between the shrub community on Hardie Summer. 30 to 50 percent utilization I think BLM is proposing on that, somewhere between there.

Q. Okay. And one other, I think, general proposition came out is that grazing increases the risk of the spread of juniper, so I wanted to get your thoughts on that.

Do you agree with that as a general proposition, again, talking about the kind of grazing that's authorized for

2019 or that has occurred within the last several decades on the Hammond allotments?

A. So current grazing practices do not increase the risk of juniper expansion. What has increased in the past 20 or 30 years, increased juniper expansion, is fire suppression.

So the number one mechanism for keeping trees up on rocky ridges is fire, and when we suppress fire, the trees are quite aggressive in their competition with shrubs and grasses. And the birds eat the berries, the birds fly downslope -- and this is well-documented in the literature by Miller, in particular, Richard Miller -- they sit on sagebrush plants in particular and they poop out the berry and plant. And you give it 15 years, and that tree will overtop the shrub and it will kill the shrub. Doesn't matter if the shrub is in good shape, doesn't matter if there's grasses underneath the shrub. The tree is kind of like Arnold Schwarzenegger on rangelands. It wins.

Q. Okay. I have a question about -- yeah. If grazing is resumed on Hardie Summer, what is your assessment of the risk of harm to the availability of grasses and forms for sage-grouse to be able to utilize in that regard?

A. Well, from what I understand, the area is primarily -- and I'm not a sage-grouse biologist, I'm going to make that very clear -- that the area is utilized for brood rearing.

When I listened to the testimony of both Dr. Braun and Matt -- I can't say his last name --

Q. Obradovich.

A. -- thank you -- the other day, the -- there is adequate cover, particularly of sagebrush, somewhere between 25 and 40 percent cover, and that the sage-grouse chicks need insects and forms and they will likely be moving off into meadow systems outside of the sagebrush at higher elevations to access those. So do I think there will be a negative impact? I do not.

Q. Okay. Let's turn to a question about making distinctions among stream systems.

I've asked Mr. Ramsey to pull up, and it should be on the screen in front of you, a document in the record as 64-13. Do you recognize what this technical supplement is?

A. I do.

Q. And can you describe what that is generally?

MR. ODELL: And then can we turn to page 7 in that while she's describing it.

THE WITNESS: So this is the Rosgen stream classification technique as a technical supplement that actually the Natural Resource Conservation Service produced for their working staff to know how to use the technique.

BY MR. ODELL:

Q. And can you generally describe what the Rosgen stream

classification technique is and what it's used for.

A. Sure.

So the Rosgen -- excuse me a second. The Rosgen channel type or stream classification is a methodology that is utilized for land managers to be able to understand the morphology of -- the potential morphology of the system given the landform that the system is moving through, what type of vegetation can be extracted from this by -- this photo that -- or this diagram you have up here doesn't have the substrates on it, but by the substrates that are associated with these various systems, and is a methodology for understanding when or if the system is departing from potential, say, through a widening of the channel or a downcutting of the channel.

Q. And what are the key factors that you look to in evaluating which category a particular stream falls into?

A. So you -- it's -- you start with an office exercise, actually, where you look at topographic maps and imagery, aerial imagery, and you determine the valley type that the channel that you are going to assess is running through. Once you've determined that based on the geomorphology of the valley bottoms, then you can predict what type of channel -- before you ever go to the field -- what type of channel you would expect to find within that valley type.

Once you're in the field, you can refine your assessment of the channel through ocular or through

cross-sectional and longitudinal profile work, which I've done a lot of, and we do Wolman pebble counts in addition in order to classify the substrate materials.

Q. Okay. And when you were on the ground, on the site of the Big Fir Creek recently, did you have occasion to make a determination as to which category you felt the Big Fir Creek falls into on this chart?

A. I did. It's a predominantly B-type channel. There are some short reaches of A on the system. The average gradient, according to the topography map, is above 5 percent, but I think the channel is running at about 4. There are stretches of the channel that are in the 2 percent range, but they all fall within that B type, which is not shown on here. It has either a gravel or boulder substrate, which makes it either a B3 or B4 channel.

Q. Can you go to page 14.

And what's the significance of that particular classification with respect to the possibility of livestock grazing impacting the stream?

A. So the B-type channel that is a gravel or cobble, the cobble system -- we'll speak to the cobble first.

It was a B3-channel cobble system. The response to livestock grazing, hoof impact on banks, et cetera, like that, is extremely low, because it is armored by big rock.

The gravel system, if it's strictly a gravel system,

livestock can impact gravel bars when they're crossing the system or if they were trailing up and down the system.

This creek in particular, in the areas that I looked at, seemed to be somewhere between B3 and B4, and without running a Wolman pebble count, I couldn't give you an exact classification.

Q. And is this chart now, what I -- just for the record, we are looking at page 14 of docket No. 64-13.

This table, what does it show?

A. So it shows -- if you follow the classification scheme down through the B line, on the left-hand side, as I'm looking at it, you'll see bedrock, boulders, cobble, gravel, sand, it further refines your classification as you're collecting data in the field.

So we collect all of the information we need when we're doing channel surveying of entrenchment ratios, width/depth ratios, sinuosity, and then we collect the bed material in order to classify a channel into these very specific classifications.

THE COURT: I can't remember right now what sinuosity is. Could you remind me, please.

THE WITNESS: Sure.

Sinuosity is like a snake, how curvy is the creek.

THE COURT: Okay. Got it.

THE WITNESS: Yeah. It is constrained by landform.

THE COURT: So if I use a Mnemonic device like a sine curve or something, then it's moderately close to being helpful?

THE WITNESS: Kind of, yes.

THE COURT: Okay. Thanks.

THE WITNESS: So B channels tend to have fairly low sinuosity because they're confined by landform.

THE COURT: Got it. Thank you.

MR. ODELL: Okay. And then, Mr. Ramsey, can you pull up for me docket 59 at page 12. Thank you.

BY MR. ODELL:

Q. Okay. And this is, for the record, document 59, page 12, which is the second declaration of Dr. Kauffman, and I asked him about this on Friday.

But this is an example of a creek at Hart Mountain National Antelope Refuge. And he's taken two pictures here. The picture on the top, according to his description, was taken in 1990; and the one underneath was taken 20 years later.

I just wanted to ask you, based on looking at this, if this particular stream system looks like the same type of Rosgen classification stream as Big Fir.

A. No.

Q. And can you describe why or why you hold that view.

A. So the landform surrounding this channel is flat, unlike the landforms around Big Fir. And the -- you can look at that top picture that's a fairly degraded system and you can see

that the channel wants to be very sinuous, very snaky, because it is not constrained by landform.

This is also a small system, wants to be sedge lined, brush lined. And then the willows. So it's going to -- as it repaired from this abusive grazing that was taking place, I can guarantee you if there was photos in between these timelines, you would see sagebrush has become the dominant species first for the -- to hold this creek together, and then you would see the willows increase through time on the system. This is a very different system than what Big Fir is.

Q. And so can you make any -- draw any real conclusions about what the likely effects to Big Fir Creek from the grazing authorized in 2019 are by looking at these photos in Dr. Kauffman's declaration?

A. No.

Q. And again, why is that?

A. They're totally different systems with totally different ecological potential, totally different response to grazing. This would be a Rosgen E system and it is -- as you can see, it's a very different place.

Q. Okay. So could you just, for the Court, characterize how critically important you think it is to adequately distinguish between and among different stream systems in trying to project potential impacts from livestock grazing?

A. Well, Dr. Kauffman did that himself in his 1983 paper

with Krueger and Vavra where he specifically stated that you have to have -- you have to consider the ecological potential of the site, you have to consider current condition, you have to consider the landform and the geology, geomorphology of the system. And so these are very different. In order to prescribe any grazing system that will work, you have to know what you're looking at and what you're working with.

Q. So it sounds -- based on that, may I just ask -- is it a well-accepted canon, if you will, in the literature, that it's really important to distinguish between the kinds of stream systems you're talking about when you're trying to evaluate these kinds of questions?

A. Yes.

Q. Okay. Thank you.

I also would like to ask you to respond to several assertions that Dr. Kauffman made in his testimony last Friday.

In particular, my recollection of his testimony -- and the record will reflect if this is accurate or not, but just for purposes of this question, please just accept my characterization of the question, is when I asked Mr. Kauffman if, in Hardie Summer allotment, there would be a 20 percent utilization overall on the allotment, what he expected the utilization would be in the riparian area, and as I recall, his answer was 70 to 90 percent. And so I wanted to ask you if you agreed with that assessment or projection and why or why not.

A. No, I don't agree with that, and the reason for this is what I told -- what I explained earlier in my testimony here, is that there's lots of production of bunch grasses available for livestock to eat away from the channel. The system, as I saw it when I was there, had mature willows, it has mature aspen. It had multiple age classes of both those woody plants along that channel. If it had been grazed inappropriately, even though it's been through five years of rest, we wouldn't have willows that are five to eight meters tall, nor would we have multiple age classes of willows on that system.

Dr. Kauffman, in his testimony, alluded to willows being an ice cream plant and that the cattle go there and eat them down to their roots, and he referenced a paper of his that -- again, the one I spoke to a moment ago, the 1983 paper by Kauffman, Krueger, and Vavra, where they looked at exclosures on Catherine Creek in northeast Oregon, which is a C-type channel, and they evaluated the impacts of grazing on that system, they had multiple exclosures set up. I have blocked those exclosures. They had multiple exclosures set up and they grazed the livestock in those exclosures in late summer/fall, and they grazed this -- and those exclosures were small.

They grazed the cattle on those pastures, grazed the pastures so tightly, they removed all of the herbaceous vegetation, and yet they left them in there to see when the livestock would turn on the willows.

And Kauffman says in that paper that the livestock did not turn on the willows until they had eaten the herbaceous vegetation to a one- to two-inch stubble height. A 20 percent utilization rate on Hardie Summer is going to not be a one- to two-inch stubble height.

So when we talk about utilization, we talk about a plant this tall, put a bunch of wheat grass, we're going to take 20 percent of it off, the plant is still going to be this tall (indicating).

Q. Right.

A. So, no. I disagree with that.

Q. Would your conclusion be any different if you were assuming a 50 percent utilization rate or a 30 percent utilization rate across the allotment?

A. No.

Q. And why is that?

A. There is enough production there to handle a 50 percent utilization rate, and the history of grazing on that allotment, with a 50 percent prescribed -- I don't know if they hit 50 percent. But with a 50 percent utilization rate prescribed for that allotment, the creeks are in really good shape.

Q. Now, in that testimony he gave last Friday, I asked him to cite a paper that he thought best represented his position on that, and he cited to Roath and Krueger, 1982, which

is now on the screen in front of you, which is at -- in the record at document 64-18.

Are you familiar with that paper?

A. I am.

Q. And were there any particular specific factors at play in the design of this particular study leading to this paper that makes it unique and distinct from the situation in the Hardie Summer allotment, and, if so, what are they?

A. One, it's on the forested system. But secondly, the way that this -- and as stated by the authors in their conclusions on this paper, they saw -- and he repeated this number -- 81 percent of the forage utilized by livestock came from the riparian zone. He repeated that on the stand. And that is a finding in this paper.

But they did document the reasons for that finding, in that this particular riparian area was a long narrow river corridor with small meadows next to it. And the cattle -- and it had really steep slopes on both sides, up to 70 percent, and they dumped the cows in through a gate off the road directly onto the riparian area and left them there.

Cows are lazy, just like humans. If you don't put them someplace else to start with, that could be where they decide to hang out. And when you've got a 90- to 70-percent slope, I'm not going to go hike it. I'm sorry. I'm not going to do it. And if I were a cow, I wouldn't do it either.

And they left them on that riparian zone, the same way they did in the 1983 study, until they had consumed all the meadow grasses, grazed the grasses down to a two-inch to three-inch stubble height, and only then did they see the livestock go to the willows. And they actually said in the study that that was a management problem.

So what they were looking at was trying to figure out how to manage livestock in a mountainous riparian system, and their recommendations were not rest. Their recommendations were, one, don't stick them through the gate right onto the riparian zone and then expect them to behave differently, and to have offsite water, which this pasture did not have and which the Hardie Summer has significant offsite water developed in it across that allotment. So this is apples and oranges.

Q. And is there a difference between the utilization as talked about in this paper and the utilization standard that I was asking about earlier? I just want to make sure the Court understands if there is a distinction and what it is because here it's my understanding that the utilization that was discussed is the amount of utilization on the pasture as a whole, 80 percent of it or so, was consumed within the riparian zone, not necessarily that they measured utilization and the vegetation experienced an 80 percent utilization on that grazed portion. Is that correct? Or within the willows in particular. Does that make sense?

A. There's a table in here that shows the utilization if we want to get down to the real nuts and bolts on it.

Q. That's okay.

A. But -- and I'm trying to remember the exact numbers. They said that 81 percent of the forage consumed by livestock -- so that's not utilization -- came off of this, off the riparian zone. So they were measuring the production of the amount of forage being produced in these different zones, and then they said 81 percent of it came from the riparian zone.

Q. And are there any specific factors related to the stream type that would make you believe that this -- even this result would not occur in the Hardie Summer allotment that you would like to point out?

A. Well, in this paper they don't really describe what the stream channel looks like or anything about it in particular other than they gave us the length of the stream, how long it was, and what the elevation drop was. And it's less than a 2 percent grading stream. It's more like a 1 percent grading stream, which is likely going to put it into an E/C, probably E/C-type channel.

Q. Okay. And what are the attributes of Big Fir in particular that you observed? How do they -- how are they going to affect, you think -- well, first, let me back up.

You talked about how the cattle were brought into this particular pasture, basically funneled down into the riparian

zone at the get-go or the outset of the grazing that occurred and then effectively loafed and stayed there. Is it your understanding that's how cattle enter the Hardie Summer allotment, and, if not, what's the meaning of the difference?

A. So there's five pastures in the Hardie Summer allotment, and depending on how they bring the livestock into the Hardie Summer allotment, they rotate through those five pastures.

I specifically asked BLM where they enter into. I think it's called the cabin pasture where Big Fir Creek is located, and, no, they do not get dumped right onto the riparian zone when they're brought into that pasture.

There is also five water developments in the cabin pasture where Big Fir Creek is located that are well distributed across that pasture that give livestock the opportunity to be other places to get a drink.

Q. And would it be consistent with your understanding if I were to ask you whether or not in this situation that's discussed in this paper that we're talking about, the Roath and Krueger study from 1982, that there perhaps were some water developments but they were erratically or sporadically or not conveniently located? Would that --

A. That would be the language they used.

Q. Okay. I just wanted to make clear on that as well.

And are there anything -- are there any factors or

attributes with respect to the stream itself that you think make it unlikely or likely that cattle would -- if they do -- when they do find their way to the Big Fir Creek, to want to stay there? Or any indications you saw from your visit that indicates they do usually stay there for long periods of time?

A. So I was looking for those type of indications when I was down there. So the things that we look at to see if cattle are hanging out, or loafing, in the riparian area for an extensive period of time is soil damage, we call it pugging, on, like, the flat areas where they might loaf. There's not a lot of flat area down there. There's some.

The flat areas where they might loaf, we look for trailing linearly up and down the channel, next to it. That's how you get caved-in banks like in the photos that Dr. Kauffman showed of Barnhardie meadow. So I looked for those type of indications.

I looked for multiple age classes, what kind of age classes I'd seen in the woody plants, both aspen and willow. And then I also looked to see if the willows that were present showed indication of high-lining, so that ice-cream-cone appearance that willows get when they are heavily used by livestock. That appearance lasts a long time, and there was none of those present in the areas that I visited on Big Fir Creek.

Q. Okay. So what is your opinion as to the likelihood

that there will be severe deleterious effects in the riparian area on Big Fir Creek in particular, or anything approaching the 70 to 90 percent range of utilization this year as a result of the authorized grazing by the BLM?

A. I don't believe that will happen.

Q. Could you give it a likelihood assessment? Where would you put it on a scale, say 1 to 100?

A. That it would be irreparably damaged?

Q. Or just even severe degradation.

A. Zero.

Q. Okay. Did you see any evidence that -- of such utilization in the past during the years when this allotment has been grazed that would lead you to conclude it has been heavily damaged in the past? I know you talked about a few of those things. But anything you observed when you were on Big Fir Creek that would lead you to conclude it has ever been grazed that way, or at least in the recent past, say, until -- from the early '90s on?

A. No. Saw nothing.

Q. I just wanted to -- can you pull up Exhibit 45.

All right. Can you see this map?

A. Yes.

Q. I know it's not a great scale of resolution.

But on this map, it does show the Hardie Summer allotment and the water developments on that allotment. And so

I just wanted to get your assessment of where those are located and if you think livestock are likely to be able to utilize those effectively and reduce pressure on creeks and stream systems in the allotment.

A. Yes, you're right. This is very hard to read.

So let's see. I can't read the pasture names. But the northern pasture appears to have five water developments in it.

Oh. Wow. That was magic.

THE COURT: Technology.

Same thing, by the way.

THE WITNESS: Yes, sometimes I think so.

The cabin creek or cabin pasture -- can I scroll this down?

THE COURT: No, but they can.

THE WITNESS: Okay. One, two, three -- I think there is four. I think I said earlier there was five. So I'm going to -- no, there is five. One, two, three, four -- five water developments in the cabin pasture. There's plenty of water spread out across these pastures.

BY MR. ODELL:

Q. Can you turn to docket 59.

There was also some testimony from Dr. Kauffman about potential heavy use of willows -- you've talked about this a little bit -- and evidence that he indicated that he had seen of

a high-line that has occurred as a result of past use of willows. Can you briefly describe your understanding of what that means for the Court.

A. What high-lining is?

Q. High-lining is, yes, and what that leads to.

A. So high-lining is where livestock loaf in the willow area, underneath the willows in particular, and they'll graze off the lower limbs and -- of the willow. And typically they can get -- you will get a non-vegetative part of the willow from the soil to about -- we'll say five feet up. That's about the browse line of a cow, of how high she can reach. And we get this mushroom shaped -- from severe high-lining, you'll get a mushroom-shaped willow.

I didn't observe that on Big Fir Creek.

Q. Okay. And then I believe during his testimony on Friday, in my characterization, I asked Mr. Kauffman to show in this photo that he took whether or not there was an indication of high-lining, and I believe he circled near the top on the left and the top on the right.

But just let me ask you, in general, do you see evidence in this picture of high-lining of willows?

A. No. What I see is willows that are growing in the shade, and when willows grow in the shade, they're being overtopped by aspen. They tend to get tall and skinny.

Q. For the record, yes, I just want to be clear, that's

document 59 at page 9.

And turning now quickly to some photographs that were taken in 2006 in connection with the Big Fir Creek PFC assessment, do you -- and I believe Ms. Davies testified that these were taken at that time and were in connection with that assessment and authenticated them in that regard.

I want to just quickly ask you do you see any evidence of that kind of willow use in any of these pictures?

A. I do not, and I actually see leader lanes, which is this year's growth on these willows that are in excess of -- particularly this one in the foreground, 6 to 12 inches in length.

Q. Okay. Can you turn back to -- okay. Yeah. Again, that's document No. 64-1 in the photograph, on page 1 of that particular exhibit.

And is it your understanding that when this picture was taken in 2006, that there was still active grazing going on in the allotment?

A. I believe that's true, yes.

Q. Okay. Thank you.

In Dr. Kauffman's second declaration, in paragraphs 16 and 17, he made some assertions that any grazing at all authorized in 2019 on the Hardie Summer allotment would result in substantial trampling damage. I wanted to ask you for your opinion on that issue and whether or not you agree there will be

substantial trampling damage on the creeks within -- and in particular, Big Fir Creek, within the Hardie Summer allotment based on the authorization grazing of 2019?

A. I didn't see -- excuse me. As I stated earlier, I did not see evidence of trailing up and down the channel, and I did not --

Q. Why is that significant? Can you explain that.

A. Sure.

So if livestock are hanging out in an area and they -- in a riparian zone where it's nice and flat and soft on their feet, and they want to stay cool, they will trail up and down the edges of the creek. We're not seeing that here. We're not seeing any type of trailing activity. We're not seeing hoof action, pugging in the soil, which doesn't go away quickly from long-term abusive livestock use on the system.

Q. May I just interject here a question.

Would you expect that pugging if it had occurred in the past from substantial trampling damage as you just testified, would that still exist even after five years of rest?

A. Yes.

Q. How long would that usually last? I mean do you have a range?

A. Once you have severe pugging -- and there's been research done on this, Paul Nieman (phonetic) has done quite a bit of it -- once you have severe pugging in riparian soils, it

can last for 30, 40 years, maybe longer. We really don't know because it's still present.

Q. Thank you.

And any other reasons for your opinion about the lack of likelihood, I think, that you testified to of this creek experiencing substantial trampling damage in 2019?

A. So I know that there's concerns by Dr. Kauffman that the cattle would come down here because this is where they would find shade and they would be cool. But there are extensive aspen stands across this allotment that have quite a bit of forage underneath them, and the -- there's no reason that the cattle would have to come to the creek. It's not the only place they can find shade and find food.

And in addition, we didn't see any cow pies. I think there was one that Jamie saw, but I didn't see it.

Q. What is the implication of the fact, I think you testified earlier, this very rocky and cobble heavy stream system, does that have any impact on whether or not trampling damage is likely to occur?

A. Sure.

Any system that is gravel, cobble, boulder, encourages the livestock to not be in it because they don't like it on their feet. And so they tend not to hang out where they have pokey rocks sticking them in the feet, and that's what this system is.

Q. And there are some areas where the livestock cross; is that fair to say?

A. Yes.

Q. And there would be some trampling damage or not?

A. I saw one -- I saw two crossings when we were in the Big Fir Creek area. There is some bank slumping where they entered the channel, and that's to be expected.

And so what we look for in those areas is whether or not the activity of livestock crossing there is promoting channel degradation in the sense of are we seeing a knickpoint where the channel bed is lowering, are we seeing head cuts working up through the channel that have arisen from the point where cattle are crossing?

We also look to see if the cattle crossing is expanding in size, so if the cattle are turning it into a swimming pool by hanging out in there and wallowing around, and we saw none of that in the areas where they are crossing. They are minimal in size. Cows appear to be going in, getting a drink, and leaving.

Q. Are you concerned that the desire of livestock on this allotment to use the riparian zones might increase at the end of the season or toward the end of their time in the allotment once the uplands begin to dry out and the temperatures get hotter? Is that a concern that you have?

A. Well, all animals want to be cool, so if it's really

hot outside, they're going to go find shade. But as I just said, there's extensive aspen stands, there's juniper trees, there's water distributed across the allotment that gives them other places to go besides just in the creek to be able to cool themselves.

And the condition of these channels indicate to me that they have been in good condition for a lot of the years. The 2006 photos, when the area was being grazed, indicate good willow cover. So I'm comfortable with the grazing prescription that is being prescribed.

It's also important to note that this allotment has five pastures in it and the livestock are being rotated through those pastures and they're not in any one pasture for more than three and a half weeks, maybe four weeks max. And so the length of time that cows are present is really short. So I'm not concerned about this at all.

Q. I wanted to draw your attention to a statement on page 11 of your declaration, which is at docket No. 61 in the record, and in particular, subparagraph 13(e) there.

The last sentence in that, I'll just read it, says, "Herbaceous species such as sedges are not important to streambank stability." And Mr. Ramsey has highlighted there for you that last sentence.

I just wanted to clarify because there was some interpretation of that as indicating in the very general sense

that you were saying or suggesting that herbaceous species are not important to streambank stability in general. Is that what this means? And, if not, can you clarify?

A. No, that's not what this means.

And these bullets that are in here, if you go up further, were specifically put in to say this is what I observed on Big Fir Creek, and that is stated in this declaration, and the sentence before that statement says, "The high gradient channel and substrate of boulders, cobbles, and gravels indicate the creek requires woody species such as willows and aspen for stability." The next statement says, "Herbaceous species such as sedges are not important to streambank stability." That is in direct reference to the B channel of Big Fir Creek.

Q. Okay. And while we're in paragraph 13, can you go back to -- or yeah -- the page as a whole.

You have here in your declaration subparagraphs (a) through (p) on pages 11 to 13 of docket No. 61. And these, again, I think you just characterized it, were your observations that you made and jotted down, perhaps, when you were in Big Fir Creek, is that correct, recently?

A. That is correct.

Q. Okay. And are there any of these that you think that you have not highlighted that you think you would like to explain a little bit further to the Court that are important to support your opinion about the potential impacts of livestock

grazing in 2019 on this allotment?

And give yourself a little chance to review them. I just want to make sure that the Court is aware of what they may be.

A. Let's see. We've been through channel classification, sinuosity, entrenchments, et cetera. Valley type. The stream is controlled by the valley.

The most important part here from a livestock standpoint is -- which I was trying to highlight -- is that woody vegetation, aspen and willows, are important for the stability of this channel, along with the cobble/gravel substrate. That's what keeps this creek in good condition.

So if livestock are going to have an impact, it would be on the woody vegetation that you would need to be concerned about, and what I observed when I was present was that there were trees that were less than five years old -- so that would be recruitment since livestock were not present -- to trees that were much older than that, five to 10-year range and older indicating that recruitment has been occurring during the period of grazing.

So we've talked about high-lining. Didn't see it.

Q. So obviously, I think it's fair to say, and you tell me if you disagree because I want you to characterize your testimony and not me, but that you have some fairly different views from Dr. Kauffman, with all respect, as to what the

potential impact of grazing in 2019 would be. To what would you attribute that? Are there any primary factors that you could attribute that to based on your evaluation of the particular allotment and what his opinions are as you've reviewed them?

A. Well, I believe that Dr. Kauffman is relying on research from the early '80s where livestock were shown to eat willows, but that research is also under conditions of really grazing hard the surrounding areas, and I don't believe that -- so once the grass is gone, the cows are going to go find something else to eat, and I don't believe that a 20 or 30 percent utilization, 50, even 50 percent utilization, which has been the historical permitted use here since the late '90s, has led to that type of willow use in this allotment.

And I documented that through observation. Certainly, I didn't take any measurements, but through observation of what I saw both the day I was there and looking back at the photos that BLM had of the 2007, 2006, and earlier PFC photos, and also of the aerial imagery that we looked at on expansion of the woody component.

If I thought that cows were going to hurt this creek, I would say I thought cows were going to hurt this creek.

Q. And could some of the distinction in your views also relate to your understanding as to the kind of stream system this is and --

A. Certainly. It's -- you know, you have to take each

creek system in its -- what its potential is, and how resilient they are given the structure as a system to livestock impact. And Rosgen B-type channels with cobble and gravel substrates have low to moderate -- with a high resilience, low to moderate responses and -- disturbance responses. Somewhere there is a chart on that in the document that we looked at earlier.

Q. Okay. Thank you.

I want to turn quickly to just a few --

THE COURT: By the way, you do know that for both your previous witness and now this witness, you're about double your estimated time for direct examination. You know that; right? Or do you?

MR. ODELL: Yes, I do, Your Honor, and I apologize for that.

THE COURT: And so when do you plan on giving the plaintiff an opportunity to cross-examine Dr. Stringham? Will that be today or tomorrow?

MR. ODELL: It will be today. I will finish in the next three minutes, with your permission, Your Honor. I do want to provide them with an opportunity, and I -- do we have a hard and fast closing time of 5:00 today, or no?

THE COURT: We'll see.

MR. ODELL: We'll see. Thank you. Okay. I appreciate your --

THE COURT: By the way, you doing okay, Ryan?

THE COURT REPORTER: I could use a couple-minute break, a quick break.

THE COURT: Okay. Why don't we do it right after -- can you wait until after the direct? And then we'll take a five-minute recess.

THE COURT REPORTER: Yes, Judge. Thank you.

MR. ODELL: And I will be quick with these, Your Honor.

BY MR. ODELL:

Q. Quickly, then, Dr. Stringham. I do believe -- I wanted to ask you just a couple of questions about the sagebrush ecosystem in this area.

In Dr. Braun's declaration, his third declaration, he has a statement to the effect of high stocking rates and a prolonged season of use would lead to a decreased survival of sage-grouse. I'm not asking about that latter part because I know you're not a sage-grouse biologist.

But in your expert opinion, is the grazing authorized in 2019 in the Hardie Summer allotment, does that reflect a high stocking rate or a prolonged season of use, in your opinion?

A. No. The -- as prescribed and stated earlier, the maximum amount of time livestock would be in any one pasture is four weeks. Some weeks -- some pastures it's two weeks. That's a very short period of use. And with the number of livestock that are prescribed to be in that total allotment and the acres

of that allotment, it works out to about 8, 7.8 acres per cow. That's not high use.

Q. And what was your general impression, if you can characterize it, of the sagebrush habitat in the Hardie Summer allotment based on your visit?

A. There was a lot of sagebrush. It was 25 to 35, Dr. Braun said up to 40, maybe, 40 -- they can't walk through, but I could still walk through it -- percent sagebrush cover.

And I want to correct one statement I said. I said per cow. It's per AUM.

Q. Okay. Thank you.

And so just to bring us to a close, based on everything you've observed and what you've reviewed and the opinions you stated, do you have an overall opinion as to the likelihood of any severe -- severely adverse impact to either the riparian systems in this allotment on Hardie Summer or to the sagebrush ecosystem on Hardie allotment from the grazing that's authorized in 2019?

A. I have no concerns.

Q. Can you give it a likelihood of that occurring?

A. Zero.

MR. ODELL: Thank you. That's the end of my direct.

Thank you, Your Honor.

THE COURT: All right. Take a five-minute recess.

And I will say, though, that when I ask counsel for

estimates of direct examination, it's not an academic exercise, with all due respect to academics, because I do respect academics. It's not an academic exercise. It's for planning and scheduling purposes. Please be more accurate in the future.

MR. ODELL: I appreciate that, Your Honor. I will.

(Recess taken from 4:44 to 4:53.)

THE COURT: Cross-examination.

CROSS-EXAMINATION

BY MR. BECKER:

Q. Good afternoon, Dr. Stringham.

I wanted to ask you first about the Kauffman photographs of Barnhardie meadows in Hart Mountain.

Is it your understanding he was trying to show how recovery in Big Fir Creek could occur?

A. I think he was trying to show how livestock exclusion on severely damaged channels can repair after a significant period of time. But in his declaration, he made some assumptions about channels that were near Big Fir Creek, and he would assume that they would be similar. He also stated that the Hart Mountain ecosystem was similar to the Steens Mountain ecosystem.

Q. So if you take a look at the caption to the photo showing the good recovery on Barnhardie, isn't it pretty clear that he's referring to intermittent streams and the potential to

restore intermittent streams like Dry Creek and not referring to Big Fir Creek on Hardie Summer?

A. What is the date of this?

Q. This is the photograph that was taken 20 years after the original photograph. But this is from his declaration. You were testifying about this a moment ago.

A. Okay. So as we know that Dry Creek doesn't have this potential, Dry Creek drains out of a reservoir.

Q. And again, as I say, the issue is that you thought that he was talking about Big Fir Creek on Hardie Summer. He wasn't making that point.

A. Well, he does say "and all the intermittent and perennial streams of the allotment." So I do think he was making that point.

Q. I wanted to ask you about the -- well, first of all, you haven't submitted any of your own research for this Court's review, have you?

A. The problem I had with submitting papers -- the volume of papers that was attached to Kauffman's was impressive -- was that I was doing research out on the Catlow Basin when I was asked to be an expert witness on the stand, and I had no access to internet or other materials to be able to do that.

So, no, I didn't attach them. I attached a resumé I had so that you could see the extent of publications that I have published on.

Q. You testified about a study that you didn't give a name of about recent cheatgrass studies in Nevada. What is that study called?

A. So the study -- the 2014, is that the one you're referring to?

Q. I don't know. It was the one you testified about on direct.

A. So the author's name is Schmelzer, et al, 2014, in the Journal of Applied Animal Science.

Q. Do you have a -- do you know what the title of the paper is?

A. Fall grazing of cheatgrass for fuels reduction, or something along those lines, similar to that.

Q. And have you submitted a copy of that to the Court for review?

A. I have not.

Q. Did the federal defendants submit that to plaintiffs for their review before this proceeding?

A. Not to my knowledge.

MR. BECKER: Your Honor, the plaintiffs served discovery with respect to documents on federal defendants on June 5th. It was a continuing request for all of the materials that the declarants at that time and any future declarants would rely on in their testimony. This Schmelzer article has never been produced to plaintiffs, so there's no way for us to examine

it. I'd like to move to strike the testimony of Dr. Stringham with respect to that study.

THE COURT: Why don't you just file a rebuttal response to it in the next few days or a week.

MR. BECKER: Could we ask Mr. -- could we ask that it be sent to us? We don't -- I don't have a copy of it.

THE COURT: Do you have a copy, Mr. Odell?

MR. ODELL: I do not, but I will get one as soon as I can.

THE COURT: And should you have provided it in discovery?

MR. ODELL: No, Your Honor. I did want to address that. I think that we did have grounds for not producing it.

As I read the discovery request that was served on us, and then we did a reciprocal request back to plaintiffs, it was with respect to any of the documents on which the declarants relied in preparing their declarations. This was --

THE COURT: Okay. I don't want to get into that detail.

So when will you be able to get a copy of that paper? Will you be able to get it to them tomorrow?

MR. ODELL: I will get it to them tomorrow. Yes, Your Honor. We can commit to that.

THE COURT: All right. You'll get it tomorrow. And then you're going to have an opportunity to file not only

supplemental briefs tomorrow, but responses due July 10th. So that's a week from tomorrow. So you can get -- you can include that in your response. And if you need an extension of the page limit, you can have it.

MR. BECKER: Thank you, Your Honor.

MR. ODELL: Thank you, Your Honor.

BY MS. BROOKS:

Q. You testified that livestock eat cheatgrass; correct?

A. That's correct.

Q. What time of the year is cheatgrass palatable to livestock?

A. Well, the study that you just asked me to send you, that was fall.

Q. And where was that?

A. Nevada.

Q. Whereabouts?

A. On a Wyoming sagebrush site south of -- or north of Eureka, Nevada, 8- to 10-inch precip zone.

Q. And so --

A. But they will also eat it in the spring when it's green. I've done research on that too.

Q. And livestock, therefore, will spread cheatgrass seeds in their feces; right?

A. No.

Q. And in -- and along their hides?

A. They may catch it in their hides just like any other animals will. If they lay down in a big patch of cheatgrass, it could be spread that way.

But in order for the seed that is in their fur to drop off somewhere and grow as cheatgrass, you would have to have a seed bed that was appropriate for cheatgrass. So if you're referring to the Hardie Summer allotment, there is plenty of bunch grasses present on that allotment to out-compete cheatgrass. There is no available space for cheatgrass to grow except for maybe in minor disturbed areas along roadways, et cetera.

And it is, like I said earlier, cryic soil. Cryic soil is not soil that -- which is very cold -- is not soil that cheatgrass grows in.

So in regards to the feces question -- do you want to discuss that paper? We can discuss it because that was really poor science. That was submitted by Braun, I believe, in his materials that he submitted to the Court on how cows poop out cheatgrass.

Q. I actually want to ask you about how many times you've testified in court.

A. This is my second.

Q. Have you testified other times by declaration?

A. Yes.

Q. How many times about?

A. Second. This is my second.
Q. So you've not filed declarations in other cases?
A. I have not.
Q. Have you filed trip reports in other cases?
A. What is a trip report?
Q. I don't know. I guess -- so this is only -- let me see if I can clarify this.
This is only the second case you've been involved in?
A. That's correct.
Q. In those --
THE COURT: Depending on how this goes, you'll either want to do more or not want to do another.
THE WITNESS: This is so much fun.
BY MR. BECKER:
Q. And in those two cases, was your testimony on behalf of federal agencies?
A. The case I was involved in before was US Forest Service. So yes.
Q. And it was just one case you said?
A. Yes.
Q. Okay. And it's true that you've received over $6.5 million in grants from Department of Interior and Department of Agriculture over the last 18 years?
A. Yes, it's true.
Q. Is it true that of the six studies you cite in

paragraph 4 of your declaration, those were commissioned by Department of Agriculture or Oregon Beef Council or the Oregon Agricultural Research Station?

A. When I was at Oregon State, that's -- what was the last one?

Q. Oregon Agricultural Research Station.

A. So the Oregon Agricultural Research Station is a federal entity. University of Nevada Reno also has one. It's called the Nevada Ag Experiment Station. All land grant universities have such entities. They are funded by the federal government for the purposes of doing agriculture and natural resource research. The money comes from Washington DC. It's funneled through the university for that purpose.

Q. Are you an expert in fire ecology?

A. I wouldn't say that "expert" would be the word I would use. I have done a lot of fire rehab on burned landscapes. So more restoration ecology.

Q. The visit you made to the Hardie Summer allotment, you said you first -- you testified you didn't visit the Mud Creek allotment?

A. No, I did not.

Q. On the Hardie Summer allotment, you made just one visit on June 19th; correct?

A. That's correct.

Q. Which streams did you visit?

A. Big Fir.
Q. About how many miles did you look at?
A. About the same amount that your -- that Boone Kauffman walked.
Q. How many miles would that be?
A. Somewhere around a third of a mile to a half a mile.
Q. Okay.
A. From the fence line down.
Q. Did you accompany Dr. Kauffman on his walk?
A. No, I did not.
Q. So how do you know how far he walked?
A. Because I asked BLM. We walked the same section of channel.
Q. Okay. Thanks.
And Big Fir was the only stream you visited?
A. That's correct.
Q. Did you visit -- did you visit any other areas on the Hardie Summer allotment while you were out there?
A. Well, yes. We went to the -- there was an area of sagebrush, mountain sagebrush type, where we could stand and look across the landscape that we went to, and I believe that Dr. Braun was also there.
Q. And you didn't visit any of the private land on Hardie Summer?
A. No.

Q. Did you take any quantitative measurements on Big Fir Creek while you were there?

A. No, I did not.

Q. No temperature monitoring?

A. No.

Q. No measurement of sedimentation in the stream?

A. No.

Q. I noticed you didn't include any photographs in your declaration.

A. So the photographs of the -- I'm taking it that you are referring to Big Fir Creek.

Q. I'm referring to the declaration you submitted. You didn't include any photographs from Oregon; is that right?

A. From where?

Q. From Oregon, certainly, and from Big Fir.

A. I did not include any from Oregon because I did not have access to my files when I wrote my declaration.

The Big Fir Creek in particular, BLM provided the photographs for this hearing, and those are the ones we chose to use. I didn't take any of my own.

Q. Did BLM show any of the photographs from the 2019 field visit to the Court yet?

A. 2018?

Q. 2019.

A. '19? This year?

Q. Yeah.

A. I don't remember if they showed any in Friday's testimony, honestly. The photographs we looked at today were 2006. So as of today, no. But I can't speak to Friday. Don't remember.

Q. You did make the statement in your declaration, which you've clarified, that herbaceous species such as sedges are not important to streambanks for stability. You said that related to Big Fir Creek; is that right?

A. That's correct.

Q. So taking a look back at Dr. Kauffman's figure No. 2, the reach of Big Fir Creek --

A. Uh-huh.

Q. -- he testified that herbaceous species are, in fact, along these streambanks, very important to --

A. Yes, he did.

Q. -- streambank stability. And so in the limited case that -- here, you agree with that?

A. No.

So what you're looking at in this photo are forbs primarily, not sedges and rushes, and they don't have the root masses that you need to bind fine sediments. So what's binding this channel is -- when you work with willows in the stream system, you're down in that stream, willows growing along here, their roots are very extensive, and they create this basket

weave that goes underneath the channel because that's where they're getting water.

So the roots go underneath the system, underneath the channel, this has been documented by Wayne Elmore, and that is what holds these systems together. It isn't -- because this is not a high sediment system that needs the sedges and rushes to hold fine sediments. And the reason you have forbs growing so predominantly in this photo versus sedges and rushes, is sedges and rushes require sunlight and there's not enough sunlight here for those species to be dominant on this system. This is overtopped by aspen.

And so with that amount of shade -- and I've done a lot of miles of multiple indicator monitoring on these types of systems -- you don't get a sedge/rush community on these type of creeks.

Q. Where are you seeing the aspen in the foreground here?

A. You can't see it. The way this photo is taken, you cannot see aspen in this system. That's the problem with this photograph.

But this was -- the entire area of the channel that we walked had an aspen gallery forest overtop of the willow community that was underneath.

Q. Did you visit any of the intermittent streams on Hardie Summer allotment?

A. No.

Q. Would it be fair to say that the -- that the location on the small tributary that Dr. Kauffman visited and photographed depends on herbaceous species for stability?

MR. ODELL: Your Honor, may I object to this question?

THE COURT: Basis?

MR. ODELL: Basis is that the foundation for it is inaccurate, I guess I would say. When plaintiffs' counsel and I were discussing the exhibits that would be submitted to the Court as of yesterday, Mr. Becker asked if Dr. Kauffman could provide a photo that I asked if he had that showed the impacts to willow species, and I said, yes, I think that's fair because I asked Dr. Kauffman if he had any other photos other than the one that was already in the second declaration.

This photo has nothing to do with willows. In addition, there's a fairly lengthy additional supplementation of his declaration here, and that -- we're also beyond the time frame that you established for submitting declarations.

So my major objections are it isn't what I had agreed with Mr. Becker that I would not object to because it has nothing to do with willows. Secondly, it appears to be a supplemental declaration because it goes on for this page and then a little bit on the following page. And we're not entirely sure exactly where the photo was taken as well.

So those are the bases of my objection.

THE COURT: Brief response?

MR. BECKER: Your Honor, I asked Dr. Kauffman what he thought Mr. Odell was referring to, what photograph he thought Mr. Odell was referring to, and this is what he sent me, and he understood the question to be about the headwater meadows, not about willows; so --

THE COURT: All right. The objection is overruled and I'll consider this for weight and not admissibility, the issues you raise.

MR. ODELL: Thank you, Your Honor.

BY MR. BECKER:

Q. So I mean is this the sort of channel where there -- where herbaceous species are -- would be important for streambank stability?

A. Yes. This is the type of system where herbaceous species would be important for holding it together. I don't know where this photo was taken.

I have walked many of the upper elevations of the Steens Mountains over the course of my career, and I have seen a number of these type of channels that you're showing up here. They are primarily associated with meadows, little meadow systems, and they do show the signs of historical abusive grazing. They are at the top of the watershed, which means that there isn't a sediment source to add to the system in order to aggrade the bottom of that channel and bring it back up.

And in addition, the primary plants that you find at

this elevation -- I'm assuming this elevation is somewhere around 8,000 feet. Is that correct? Since I don't know where it was taken.

Q. I don't know. It was taken a quarter mile from the Steens Mountain Loop Road on the Hardie Summer allotment. And I think that Hardie Summer doesn't get any higher than about 7,800 feet.

A. Okay. So that's close to 8,000.

So when you start to reach that elevation in the Steens, one, you don't have -- as you see here, you're not seeing trees in the background. So you lose your juniper trees. They're not present. That's why I made that assumption.

You begin to lose a lot of the sagebrush community as you move up higher in elevation and you get into more of these meadow systems that are -- have about a 40-day growing period. And so they don't grow the big deep rushes and sedges that Dr. Kauffman alludes to, but they do need herbaceous vegetation to hold them together.

And this system shows some use. I'm not going to tell you it doesn't. But we don't know if this is historical use or the use that was occurring five years ago.

When I look at this, what I do see is a system that isn't going to change a whole lot. And by the -- this has been a very wet year, and we need to put that on record. 2019 has been extremely wet. Most years, this would be dry by now.

And I doubt that this flows to Mud Creek, if this is intermittent. In fact, it's ephemeral.

Q. And the -- but you don't know that?

A. No, and neither does Boone Kauffman.

Q. Your declaration and your testimony doesn't address the condition of any of the roughly 20 miles of intermittent streams on Hardie Summer, does it?

A. Where did you get the number 20 miles?

Q. That was from the testimony on Friday.

A. Of Boone Kauffman?

Q. I believe so.

And your declaration doesn't address the value of riparian areas in these intermittent streams as habitat for sage-grouse; correct?

A. No. I wasn't focused on that.

Q. The photographs that you did look at for Big Fir Creek from 2006, you're aware those were taken before the Grandad fire burned that area?

A. I am aware.

Q. I wanted to call your attention to docket No. 64-19, which are the field inspection notes from Lindsay Davies and Jamie McCormack, which have additional photographs of Big Fir Creek.

A. Okay.

Q. This is a photograph that purports to be an upper

section of Big Fir Creek. Would you agree that herbaceous species are important to streambank stability in this case?

A. So this photo says, "The stream in the foreground is a side channel." So this is an overflow channel. It's not the primary channel of Big Fir Creek.

And I would say that herbaceous species would play a role in this particular section that you're showing here, but it would also be important to have the woody species present.

Q. And in photo No. 2, there aren't any willows in view, are there?

A. No, I can't see them in there. But I can see aspen.

Q. So, again, herbaceous species would be --

A. No. Do you see all the rock in that channel? Can you see the aspen back there? Their roots do the same thing willows do in holding streambanks together.

So the -- I'm not going to say herbaceous species are a hundred percent not important. I don't want to see dirt. I don't want to see that. But this is not a sediment-driven system when we have fine sediments, much like the Barnhardie Meadow system that Dr. Kauffman has in his declaration, where we have to have the big sedges to hold the system together.

Q. This is a photograph that was taken on the lower section of Big Fir Creek. You didn't -- you didn't access this section, did you?

A. I did not.

Q. In the lower photo, again, would you say that herbaceous species are important in stabilizing the streambanks there to the extent they are stabilized?

A. So that is a cow crossing. And when we take pictures of cow crossings, we need to identify them as cow crossings.

Q. These photos were taken by the Bureau of Land Management.

A. I'm well aware of that.

So this is a livestock crossing, and I see the trailing going through. And when we have concentrated use -- and that's probably the reason it's a livestock crossing, is there's an opening in the canopy here. When you have concentrated use, you're going to get bank sloughing like that, and I'm not going to tell you you're not.

But the length of this -- so what we were looking at when I was there was how big are these areas that are being impacted by livestock crossing, and this picture shows about the extent of the distance that the cows -- it goes a little bit further upstream, but the extent of the distance that the cows were impacting that bank coming in.

But this is what cows do if they loaf along the channel like they did in big Hardie -- in that Barnhardie Meadow. And we're not seeing this up and down Big Creek, Big Fir Creek. We're only seeing it in these isolated locations where the livestock are crossing.

Q. In the third of the mile that you actually walked?

A. That's true. And in the third of the mile that Boone Kauffman walked.

And from what I talked to BLM, and these are professional people, they informed me that that's about the density we see on Big Fir. It's very hard to access.

Q. You testified before that the utilization rate of 50 percent that BLM includes in its permit is an allotment-wide vegetation utilization rate; correct?

A. That's true.

Q. And you referenced the Roath and Krueger paper from 1982 titled Cattle Grazing and Behavior on a Forested Landscape. You explained that -- let me ask the question a different way.

That paper describes grazing on the Camp Creek pasture on Oregon's Malheur National Forest; correct?

A. Yes.

Q. That's in northeastern Oregon.

So I just want to look at the map that is at page 4 of Exhibit 36. This is Document 64-18 in the record.

You stated that there was no offsite water on this?

A. I stated that it was erratic is what is stated in the paper.

Q. I believe you originally said there was no offsite water.

A. I correct myself.

Q. Can you tell me how many offsite -- can you, first of all, tell me what the dark black line going -- sinuous line going across this map shows?

A. It says bluegrass bottoms.

Q. And does that indicate the location of the riparian area?

A. Yes.

Q. So how many water developments are there offsite on this?

A. Well, let's see. It appears there's one, two, three, four -- five.

Q. And how many salting locations are there?

A. Four.

Q. And what's the reason for putting salt out for cows?

A. You're trying to pull them away from the creek. But if you don't have water -- and what the paper said was the water was erratic, which means you can have a water development, but it doesn't mean there's water present.

Q. Have you visited any of the water developments on Hardie Summer allotment?

A. I have not, but I've asked BLM about them.

Q. So you have no basis for -- you have no personal knowledge?

A. I have no personal knowledge.

Q. And it's true in this case that the -- flipping to the

table on the next page -- that the riparian zone accounted for 81 percent of the forage utilized even though it accounted for only a small fraction of the area grazed; correct?

A. Yes, I would agree with that. I already stated that.

Q. So you would agree, then, that when you have an allotment-wide utilization rate, there's going to be a disproportionate amount of grazing in the riparian zone?

A. Not necessarily.

Would you please scroll back up to your map.

If you look at how narrow that riparian zone is and the slopes around that riparian zone are up to 70 percent, and they dumped the cows right in on the riparian zone, I am not at all surprised that they had high utilization in that particular riparian area.

The cows had no reason to walk upslope to go find water or salt elsewhere in this particular pasture because they were given the riparian zone initially when they unloaded from the trucks or however they got them there and put into this pasture. And when you are -- manage livestock like that, which is not the way they are managed on the Hardie Summer allotment, you would expect to see that type of use in the riparian zone. That doesn't surprise me.

Q. Have you observed livestock management on the Hardie Summer allotment?

A. I observed the impacts of livestock management on the

Hardie Summer allotment.

Q. On this map can you indicate where there are steep slopes?

A. It says in the paper that they are on the south side, they go from 20 to 50 percent; and on the north side, they go from 30 to 70 percent.

Q. But where are they exactly here?

A. They say in -- the paper says it borders through -- this is not a topographic map. I can't do that. But in the paper, it says they border the creek for the entire length of the creek.

Q. Do you know -- do you know Matthew Obradovich?

A. I met him last week.

Q. So you're aware he has been working for BLM for 20 years managing the allotments on -- the Hammond allotments?

A. I don't know the specific length of time that he has been working for BLM, so, no, I would have to say I don't know how long Matt has been managing the allotments.

Q. But you would agree he's knowledgeable about the allotments?

A. I would agree that he is knowledgeable about sage-grouse and sage-grouse habitat.

Q. Do you believe, then, that he's not knowledgeable about the grazing management on the allotments?

A. I believe he's aware of what the grazing management is

and that his determination was that it was not going to do harm to the sage-grouse habitat.

Q. And he -- he testified that livestock on the Hardie Summer allotment during the hot summer months won't graze dried-up forage and forbs in the uplands but they will drift to riparian areas?

A. That is what he said. I'm not going to say -- I'm not going to contradict what he said. What I'm going to say is he's not a range scientist.

Q. But he has on-the-ground experience?

A. He does.

Q. And the Roath and Krueger study did show that livestock are going to preferentially graze the green vegetation in the riparian area compared to the uplands?

A. Yes. They let them graze the riparian area -- they let them graze the meadows to a one-inch stubble height. We don't do that anymore. That's not okay.

Q. What is the stubble height standard in the permit for the --

A. I have no idea. But in BLM --

Q. Would it surprise you that there is no stubble height standard for the Hardie -- for the Hammond allotments?

A. For which allotment?

Q. For the -- for the four Hammond allotments at issue in this case.

A. The Hardie Summer?

Q. Hardie Summer, Mud Creek.

A. Well, Mud Creek, I understand, is not accessible, so that wouldn't surprise me, by livestock. There's only a water gap on it.

And then on the Hardie Summer allotments, as far as having a stubble height, I don't think it's relevant since that's not the species that you need to be concerned about when you're managing there. You need to be concerned about willows and aspen.

Q. Do sage-grouse eat willows and aspen?

A. No.

Q. So it would seem that managing for forbs and grasses is relevant if you're trying to protect sage-grouse?

A. Okay. So if we're talking about the uplands and not the creek -- so now we've changed subjects.

Q. We're talking about the creek because Mr. Obradovich testified that the -- that sage-grouse will -- are likely to be in the riparian areas and are likely to be eating forbs in the creeks.

A. I believe that what he said -- and without going back to his testimony, I don't think either one of us are going to have it correct -- that they will move off the Hardie -- the chicks and hens will move off the Hardie Summer allotment to riparian meadows at higher elevations so that they can get to

forbs and grasses as the grass senesces on the Hardie Summer allotment. And that's the comment that you're referring to. All of the creeks -- the Big Fir Creek, Little Fir Creek, on Hardie Summer, have trees on them. Sage-grouse don't go near trees.

Q. Are you familiar with the SageCon mapping that Mr. Obradovich indicated was reliable?

A. I saw the imagery that you put up.

Q. And that showed, didn't it, that sage-grouse likely use Big Fir and Little Fir and Fence Creek on the Hardie Summer allotment during the summer?

A. Which is why I would question the reliability of that map. Which if you go to the footnote on that website for that map, it says specifically that these are imagery taken from satellites and are therefore not reliable, and that in order to use the SageCon map, you must be on the ground and you must do onsite assessment to determine if this mapping is correct.

Q. Did you do any onsite assessment of sage-grouse there?

A. No. I did onsite assessment of the channels and the sagebrush habitat that the birds would use. And we know that birds don't go, through the literature that's been proven, that they don't go near trees. And that system is aspen-lined, Big Fir Creek.

Q. And Mr. Obradovich has testified the opposite and he has 20 years of experience on the ground.

A. I don't think what's what he meant, but you will have to debate that with him.

THE COURT: Speaking of which, how much longer do you have for cross-examination?

MR. BECKER: Ten minutes, Your Honor.

THE COURT: All right.

MR. BECKER: Thank you.

THE COURT: I encourage you to be efficient and effective.

MR. BECKER: I shall.

BY MR. BECKER:

Q. You did mention that the only PFC assessments on this allotment are the ones that Ms. Davies -- I don't know if you said this, but is it your understanding the only PFC assessments on the Hardie Summer allotment are the 1999 and 2006 assessments?

A. I believe that's correct.

Q. And those were both -- those were all before the Grandad fire in 2006?

A. Yes.

Q. And you'd also agree that the PFC evaluation doesn't assess a condition -- the condition of fish habitat directly, nor how riparian functions work for sage-grouse?

A. I think that's been established.

Q. In your declaration, you included a couple of

photographs of Dalton Meadows in Nevada.

First of all, where is that?

A. It's in the Desatoya mountain range approximately 20 miles or so west of Austin.

Q. Okay. And is it true that the photograph on the left shows graze -- shows conditions at the end of grazing season?

A. So the way this allotment is grazed is the livestock either trail through it in the spring or they trail out of it in the fall.

But the wild horses are present 12 months out of the year. And at the time that the 2010 photo was taken, the wild horse population was over 500 head over the amount that was supposed to be on this mountain they have since gathered.

I honestly couldn't tell you without going back to my notes whether or not livestock had been through here. But let's just for the sake of argument say, yes, livestock had been through there that year.

Q. I guess why didn't you include the months and day that these photos were taken?

A. That was because I was in a remote location trying to write this. But I will give them to you since you want them. It's October 1 or October 10th, one of the two, for the 2010 photo, and it was July 27th for the 2016 photo.

Q. So it's fair to say, then, based on your statement that livestock grazed the meadows every September to November

that there was grazing on the one -- on the left and the one on the right reflects conditions pre-grazing?

A. Yeah. I'm -- that wasn't the purpose of the photo. The purpose of the photo was to show the extensive amount of sedge cover that has come in in the bottom of the channel right there.

Q. But isn't it deceptive to show a pre-grazed photograph and then make any conclusions about the effects of grazing?

A. No, not at all, because what you're seeing on the 2010 photo is really severe overgrazing of a site and you're seeing rapid repair of the site with appropriate grazing after the meadow was fenced to keep the horses out.

Q. But you can't see the repair because there's the grass on it.

A. Do you want me to mow it?

THE COURT: Let's not do that. Let's just answer the question seriously and --

THE WITNESS: Well --

THE COURT: -- not sarcastically.

THE WITNESS: I'm trying to, but that's a --

THE COURT: No, you can -- let's get questions and answers.

THE WITNESS: How do I clear this?

THE COURT: You press -- in the upper right-hand corner, there's an arrow. Press that arrow.

THE WITNESS: Upper right-hand corner.

THE COURT: Upper right-hand corner of the screen.

THE WITNESS: Oh. It's clear. Thank you.

All right. So not to be sarcastic, what I was trying to demonstrate here wasn't an annual grazing effect. It was the fact that this system has had -- was fenced and has had controlled grazing applied to it for the last -- in this case -- and it was actually five years.

And what you're seeing is improvement in the sagebrush community in that channel. That's what I'm trying to show. If it was continued to be grazed as it was in 2010, year after year, so grazed that way in 2015, you would not see the sagebrush community here.

BY MR. BECKER:

Q. Steens Mountain is located in the great basin; correct?

A. Yes.

Q. And what would you -- how would you describe the climate and habitat on Steens Mountain?

A. Where do you want me to describe it from?

Q. I guess would it -- is it correct that the ecosystem could be classified as great basin xeric, mixed sagebrush?

A. Parts of it, yes. You can get above the sagebrush line on Steens Mountain.

Q. But none of these allotments are above the sagebrush

line, the Hardie Summer and --

A. That's correct. Well, that photo that Kauffman took was above the sagebrush line, or at least it appeared to be, on that intermittent channel where we don't know where the picture was taken at.

Q. You cited an article by Joseph Smith called The Effects of Rotational Grazing Management on Nesting Sage-Grouse; right?

A. I did.

Q. And that study was done in the northern great plains in central Montana; correct?

A. That's true.

Q. That is a wetter environment than the southeast Oregon desert; isn't it?

A. I believe -- if you want to scroll up to where they describe the environment, that might be the best way to answer that question.

So study area, right there, so 975 millimeters to 1250 millimeters is about a ten-inch precip zone.

But is it a different place? Yes, it is a different place, and the authors in here bring that to the point, that the extrapolation of the data on this project needs to be carefully considered.

But they also indicate that the nest success they were seeing with sage-grouse mimicked the range-wide nest success for

the years they were doing the study. And range-wide means across the distribution of sage-grouse.

Q. So the precipitation average was 359 millimeters?

A. Where are you seeing that? Oh, I'm sorry. I read the elevation. Okay. 359 millimeters. Does somebody want to convert that?

Q. It's about 2.2 centimeters to an inch. Am I correct?

A. 2.54 centimeters to an inch.

Q. So that would be roughly 18, roughly 11 --

A. Roughly 11.

Q. The math is wrong. Roughly 15. Okay.

A. Okay. So that would be similar to the Hardie Summer allotment.

Q. So the conclusion that they -- that they state here is that because the study area is characterized by a different precipitation regime than most of the range of sage-grouse, the findings should be extrapolated with caution.

A. Yes.

Q. And they say that other areas, such as the great basin, may not have the same results; correct?

A. Due to the history of grazing.

Q. And so why is it that you didn't include that qualification in your declaration?

A. I have no answer for that.

Q. Okay. I've actually been involved in a couple of

other cases that you've testified in, so I think it's three that you've been involved in. I'm wondering specifically --

A. No. It's been two.

THE COURT: All right. I'll call you as the next witness, Mr. Becker.

By the way, you've also hit about your ten-minute mark and really gone past it.

MR. BECKER: One more -- two more series of -- two more quick questions in the same series.

BY MR. BECKER:

Q. Did you submit a trip report regarding grazing allotments on the Malheur National Forest in 2004?

A. So that would be the other case I was involved in.

THE COURT: By the way, didn't you say a few minutes ago, "What's a trip report?"

THE WITNESS: Well, apparently that's what it was called, but I honestly don't remember that.

THE COURT: Okay.

BY MR. BECKER:

Q. This was a case that was case No. 03-213. There's a report of it at --

THE COURT: Do you have the name of the case?

MR. BECKER: It's *Oregon Natural Desert Association v. US Forest Service*. There's a report of it at 2004 Westlaw 1293909 at pages *6 to *7, and it describes a document entitled

Trip Report, Malheur National Forest, produced by Borman, Krueger, and Stringham of Oregon State University.

BY MR. BECKER:

Q. Would that be you?

A. That would be me.

Q. And it says in the report the author selectively criticized findings of plaintiff's expert and examined certain allotments using the proper functioning condition methodology.

Isn't it true that this court found your testimony there to be unreliable?

A. I didn't testify.

Q. You just said that you --

A. This is --

Q. -- submitted a declaration.

A. So this was submitted -- this was a long time ago. Now you're making me call up the bugs here.

So this was submitted as a trip report, apparently. Borman would have been the author on it. I would have been present when we were out in the field. And I never testified in this case.

Q. So you didn't file a declaration? You didn't file this as a declaration then?

A. Not me, no.

Q. Okay. Does the Court conclude, though, that the proper functioning and condition methodology is unreliable

because it's considered highly subjective?

A. I have no idea. Where would you -- maybe they did. I don't know.

Q. The last sentence, there are numerous sources -- the judge says that -- he questions the weight it should be afforded and then says that there are numerous sources which question usefulness of proper functioning condition methodology because it is considered highly subjective.

MR. ODELL: Your Honor, may I object?

THE COURT: Basis?

MR. ODELL: This document speaks for itself. It's a legal opinion, and I think asking Dr. Stringham to testify as to what it means is not relevant. I think we can argue about what this Court meant.

THE COURT: Overruled.

MR. ODELL: Thank you.

THE COURT: It's taking more time to hear the objection than -- let's move on to your last question.

MR. BECKER: I have no further questions. Thank you, Your Honor.

THE COURT: Very good.

All right. Mr. Odell, you may redirect. And as I said to Ms. Brooks, please be efficient and effective.

MR. ODELL: I will. I believe I have just two questions in this same grain.

REDIRECT EXAMINATION

BY MR. ODELL:

Q. The first one, Dr. Stringham is --

MR. ODELL: Can you pull up No. 9?

BY MR. ODELL:

Q. While he's doing that, to be efficient, let's ask you about you were shown several photographs from the BLM that were taken in their field inspection of Big Fir Creek; is that correct?

A. Yes.

Q. Okay. And several of those showed lower gradient reaches or areas of the stream where there was not as much woody vegetation present along the riparian area; is that correct?

A. It appears that way.

Q. Yes. And I just wanted to ask, based on that evaluation of the extent of the walk you took along the stream, what percentage of the stream would you say was characterized by that type of reach as opposed to the woody materials that apparently reflect the majority of the area of the stream?

A. So the walk that I took along the stream, you're asking me what percentage would be those lower gradient areas?

Q. Right.

A. Somewhere around 2 to 5 percent.

Q. 2 to 5 percent. Okay.

Did you also have occasion in evaluating the condition

of Big Fir and Little Fir Creek to look at the aerial photos that I went over with Ms. Davies earlier?

A. So what are you asking?

Q. I'm asking if those photos that I went over with Ms. Davies earlier, the aerial photos over time, would also be something that you could rely upon in determining that the majority of this area is dominated by the woody component and not these lower gradient open areas?

A. Yes. Time-change analysis using aerial imagery is a well-accepted scientific method for documenting the expansion of woody plants. So, yes, you could do that.

Q. And I'm now pulling up the first declaration of Dr. Kauffman, and I am now on page 8, which is docket 9 in the record.

I just wondered, could you see what dates he took the various photos to show the distinctions in which he's relying in Barnhardie meadow --

THE COURT: It's in the record. 1990, 2013, 1989, 2013.

MR. ODELL: And I'm talking talk about the month in particular. I just wanted to point that out.

THE COURT: Yeah. I see. I see it in there.

MR. ODELL: That's fine. That's all I have, Your Honor.

THE COURT: Okay. Anything further, Mr. Becker,

within the scope of the redirect?

MR. BECKER: Just one question, Your Honor.

RECROSS-EXAMINATION

BY MS. BROOKS:

Q. I'm displaying document No. 40, the second declaration of Jamie McCormack.

Is it correct that there are about 3.1 miles of Big Fir Creek in the Hardie Summer allotment?

A. Well, there's 1.8 on BLM, but yes.

Q. But about three miles. So you walked something less than -- something between 10 and 15 percent of the creek?

A. I walked the same amount as Dr. Kauffman walked.

Q. You walked --

A. And, yes, that would be correct. And then I looked at topographic --

MR. BECKER: That's all I have.

THE WITNESS: Okay.

MR. BECKER: Thanks.

THE COURT: All right. Thank you, Dr. Stringham. You may step down.

I assume the government has no further witness. Am I right?

MR. ODELL: You are correct, Your Honor.

THE COURT: Any rebuttal from the plaintiffs?

MR. BECKER: No, Your Honor.

THE COURT: All right. So let's talk about what's going to happen next.

I understand that there'll be supplemental briefs from both sides tomorrow, July 3rd; responses July 10th, as expanded a little bit as I've discussed on the record; the TRO has been extended until July 17th at 5:00 p.m.

And I must tell you both, I still -- I mean I'm keeping an open mind. I haven't made a decision. I'm waiting to see your supplemental briefs and responses.

But I'm thinking that -- and I'm going to do this in both directions. If the motion is granted in whole or in part, then that would create some pressures on the Hammonds, pressures on Harney County -- I've read their amicus brief -- and I don't want that to last any longer than need be.

If, however, I were to deny the motion for preliminary injunction on the grounds that the defendants argue, namely that there's no current irreparable harm and you're not really fighting very much on likelihood of success, I would be very concerned about not letting another season go past before we get the merits resolved.

And so I've looked at the three claims. It looks to me like they are basically various iterations of the same claim, namely that either the secretary's decision to renew or the BLM's decision to reissue a permit violated the Federal Land

Policy and Management Act, the National Environmental Policy Act, and the Administrative Procedure Act, with just various focuses, foci, for claim 1, 2, and 3. But it's essentially the same claim, essentially an administrative claim, I think on the record.

So what I think we should do, whichever way I go, whether it be -- whether it be to grant the preliminary injunction in whole or in part or to deny preliminary injunction, we need to move rapidly and efficiently to a final decision on the merits.

So what I think makes sense to me, and I'll let both sides be heard on this, I think we should have a deadline for the filing of the administrative record of approximately 60 days from today, September 3rd, 2019; plaintiff's opening brief, 30 days thereafter, or October 3rd, 2019.

Mary, I'll give these to you later once we pin them down.

Defendants' response brief, 21 days thereafter, which would be October 24th; plaintiffs' reply brief 14 days thereafter, which would be November 7th.

So in other words, 60 days to file the administrative record, 30 days for plaintiff to file an opening brief, three weeks for defendants to file a response brief, two weeks for plaintiff to reply.

I'll give myself about two weeks to review all the

briefing, and then we'll hold an oral argument on Monday, November 25th, start at 10:00 a.m. and give you as much time as you want, but for that one day. And then that gives me 30 days to get an opinion out before the end of the year before we have to deal with next season issues.

So is that a schedule the both sides can live with?

Mr. Odell?

MR. ODELL: Your Honor, I think the first date certainly is, and I've been working with interior department and Bureau of Land Management to get them working on the administrative record. So I certainly think that date should work. I would like to confirm that with them.

My only real concern is that the ordinary process for resolving these claims on administrative record that I'm familiar with in this court is to have cross-motions for summary judgment.

THE COURT: Okay.

MR. ODELL: And that -- so what I guess I would propose -- because I also agree with you that -- to get to the merits sooner rather than later so we don't have to worry and be in the situation next year, obviously, and you have to answer any potential impacts from grazing in 2020 in your PI ruling, I'm thinking I might be able to get the administrative record filed earlier than September 3rd, which would then hopefully buy an additional, say, three weeks, by which we could also have a

reply brief, which is, again, the normal course that we follow in this court.

THE COURT: Or the other option would be the administrative record is filed; 30 days thereafter, each side files opening motions for summary judgment, maybe 30 days thereafter each side files responsive briefs, period, done with briefing; approximately two something weeks after that we'll have a hearing.

So I take it that's something that defendants can live with.

MR. ODELL: I can live with that. The only thing I would say, Your Honor, with respect, is that sometimes does result in the ships passing in the night problem. So we've usually done the staggered approach where the plaintiffs will file their opening summary judgment motion, then we file a cross-motion, then they file a reply and we file a reply. I think that's usually a little more helpful to the court because then we're actually responding to each other's arguments. But I can live with that if you --

THE COURT: So what you're suggesting is plaintiffs' opening brief in support of summary judgment followed by defendants' responsive brief and cross-motion for summary judgment --

MR. ODELL: Right.

THE COURT: -- followed by plaintiffs' reply brief,

followed by defendants' reply brief.

MR. ODELL: Correct. And then if I could submit -- sorry.

THE COURT: Mr. Becker, can you live with that? Or Ms. Brooks? Or both of you?

MR. BECKER: Your Honor, I think -- I think the -- without our calendars in front of us, it's a little difficult only because I think Monday, November 25th, is during the week of Thanksgiving.

THE COURT: Right.

MR. BECKER: And I -- I believe -- and I'm personally planning to be with my partner in a different part of the country.

But I'm wondering if -- you know, I guess conceptually --

THE COURT: Well, why don't we do this. Why don't I get -- let you and Mr. Odell confer about these issues. If Mr. Odell is right and he can lodge the administrative record sooner than 60 days, everything can start sooner. And then you can all let me know what's the deadline for the lodging of the administrative record, then how much time does plaintiffs need to file an opening brief in support of a motion for summary judgment. Defendant will then file its response and cross-motion. Tell me what deadline you want for that. Then plaintiff replies. Tell me what deadline you want for that.

Defendant replies. Tell me what deadline you want for that.

Then give me at least two weeks, and then thereafter we'll talk about, you know, a date for a hearing after I have at least two weeks from the last brief. And as long as that hearing is no later than sometime in November -- and if you want to make it earlier, that's fine with me -- then I can get you a decision 30 days thereafter. We'll have a decision by December. If you want to bump that even earlier, you can now assume that all I really need is about two weeks after the final reply brief from the defendants and then assume approximately 30 days from oral argument to get the final decision.

MR. BECKER: Your Honor, just one question as we confer.

The grazing is scheduled to resume April 4th of -- excuse me -- April 1st of 2020. So we -- I'm wondering if we would have flexibility to try to get a December hearing date after the holidays. I mean after the Thanksgiving holiday well in advance of the --

THE COURT: And then you want me to use the December holidays for writing the opinion?

MR. BECKER: Well, no. No. Suggesting -- suggesting that an opinion by the end of January would still be plenty of time for the -- you know, for --

THE COURT: We have a lot of trials starting in January, and for reasons that probably won't surprise anybody,

most lawyers didn't want to have trials in December. So I'd just as soon get this done by the end of the year. And I think with Mr. Odell's offer to try to get the administrative record filed sooner -- and then you can frankly even condense your briefing.

MR. BECKER: And that might work out very well.

THE COURT: So will both sides consult with each other? And perhaps can you let me know by tomorrow by email or something if you've reached an agreement. Will that work?

MR. ODELL: I don't believe -- I'm trying to be very candid, Your Honor, due to what else is on my plate and I also have that supplemental brief I need to file by the end of the day tomorrow. So I don't know if I can do that by tomorrow.

THE COURT: How about by next Monday or so?

MR. BECKER: I'm going -- I also have the brief due tomorrow and then I'm out of town on the 4th and 5th. Could we try by the end of the day Tuesday?

THE COURT: Sure. Fine. Just let me know Tuesday what schedule you all can agree upon.

MR. ODELL: Thank you, Your Honor.

MR. BECKER: Thank you, Your Honor.

MS. BROOKS: And, Your Honor, there was just one thing I wanted to clarify as well about your understanding of how these types of briefing typically proceeds.

Normally the plaintiff's brief is not only -- our

second brief is not only a reply brief, but it's also a response brief so --

THE COURT: Correct.

MS. BROOKS: So normally page limits are commensurate with that.

THE COURT: I'm of the opinion that most people file briefs that are way too long.

MR. BECKER: Your Honor, Ms. Brooks, if I may, she's from Boise, Idaho, where they have -- where they have what you might consider more sensible limits of 25 and 15 pages. So I think we're -- I think I agree with you. We're generous in this district.

THE COURT: And feel free to build into your stipulation on deadlines what you both would agree upon on page limits, and I'll let you know whether I can live with it. And as long as it's not really excessive, I'll live with it. But build that into your deadlines so each side knows what to work with.

MR. BECKER: Thank you, Your Honor.

THE COURT: All right. And anything further that we should talk about now before -- we'll just wait to see what you file on the merits on the 3rd and the 10th, and your scheduling, which would be due on Tuesday, the 9th.

Anything else anybody wants to talk about this evening?

MR. BECKER: Not from plaintiffs, Your Honor.

MR. ODELL: Just one thing from federal defendants, Your Honor.

You had mentioned concern with respect to Mr. Obradovich's testimony at the end of the last hearing.

I just wanted to say on behalf of the Justice Department, the United States Attorneys Office, we take that very seriously. And in that regard, we intend to, and if we need to seek leave of court, to file a corrected and/or slightly amended declaration to --

THE COURT: Well, I think what -- I get that and I understand that, and I think the time to do that would be tomorrow, the 3rd, so that Mr. Becker can include that in his response --

MR. ODELL: That's what I intend to do.

THE COURT: -- on the 10th. And right now I will lift page limits from you all.

But don't go crazy over this. I don't think, you know, 30 or 40 pages is at all helpful given how much has already been briefed. So do what you need to do, but don't go crazy over it.

MR. BECKER: And if I may just clarify, Your Honor, our understanding of what the supplemental briefing tomorrow and next Wednesday was, was that it would be -- that it would be referencing these newly filed exhibits.

THE COURT: Newly filed exhibits, plus, if Mr. Odell wants to clarify that what Mr. Obradovich really was doing was just intending to quote from, what was it, a 2015 or 2016 report, I'll let him clarify that, and then you tell me a week later whether it makes any difference at all.

MR. ODELL: And I also just want to confirm for the record that I will intend to get Mr. Becker the Schmelzer report tomorrow that Dr. Stringham referenced.

Thank you. That's it, Your Honor.

THE COURT: All right. And can I take it from the discussion that you raised about the proposed stipulation to avoid a preliminary injunction at the beginning of the hearing last week, if you want to keep discussing it, you go right ahead. Just let me know if you work something out.

MR. ODELL: We will be most delighted to do that, Your Honor.

THE COURT: All right. Very good. Thank you.

(The proceedings concluded at 5:59 p.m.)

C E R T I F I C A T E

I certify, by signing below, that the foregoing is a true and correct transcript of the record, taken by stenographic means, of the proceedings in the above-titled cause. A transcript without an original signature, conformed signature, or digitally signed signature is not certified.

DATED this 8th day of July, 2019.

// Ryan White

RYAN WHITE
Registered Merit Reporter
Certified Realtime Reporter
Expires 9/30/2019
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