

## SELL Tara L \* ODF

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**From:** SELL Tara L \* ODF  
**Sent:** Tuesday, September 15, 2015 11:52 AM  
**To:** SELL Tara L \* ODF  
**Subject:** FW: Public Comment | Candace Bonner | FW: Riparian Rules Subcommittee  
**Attachments:** Subcommittee on riparian rules BOF comments.docx; commentary for July 23, 2015 BOF meeting, riparian rules.docx; commentary BOF June, 2015 riparian rules.docx

Candace Bonner  
Member (Public) – Northwest Regional Forest Practice Committee  
RE: Board of Forestry Riparian Rules Subcommittee

August 30, 2015

Board of Forestry Chairman Tom Imeson, and subcommittee members Sybil Ackerman-Munson, Nils Christoffersen, and Gary Springer:

Thank you for inviting ongoing public input on riparian rules. I submitted written, and gave verbal testimony, at the last two Board of Forestry meetings. I have attached those comments below.

I write again because I believe the Board's action on riparian rules will be the most important action of this Board, and will have a major effect on Oregon for decades to come. I also believe the Board's decision will be the major determinant of the Board's credibility with the Oregon public.

I should note that the opinions expressed here are entirely my own, and do not represent the opinion of anyone else on the NWRFP.

This year's drought and heat wave, and salmon die-offs in record high water temperatures, should bring home the urgency of protecting our streams from warming due to harvest. Richard Whitman presented information on how many of our streams are already 303d listed for temperature, and presented fairly dire predictions of what our stream temperatures will be over the next decades. The BLM Draft Environmental Impact Statement (DEIS) for their proposed changes in management practices, Chapter 3 on climate change, includes discussion of Oregon's decreasing total annual streamflow, now down to the levels of 1930, one of the driest periods on record, as well as the increasing temperatures of Oregon streams. We cannot afford to add additional warming caused by our harvest practices.

We have good science to tell us what we need to do. I do not agree that the science is "all over the place." The systematic review taken with the Ripstream data give us clear direction. The PCW number of 0.3 degrees C has been abused and confused, when it is actually an excellent and well-documented marker for increase in stream temperature caused by harvest, not due to chance or limits of measurement.

I have much sympathy for your position. There is no decision, no proposal, you can possibly make that will not leave many stakeholders unhappy and even angry. However, I urge you to draft a proposal that is based on the best available science, that fully protects our streams, and not look for compromise. The stakes for Oregon are just too high.

First, I urge you to put into effect temporary rules, hopefully at your September meeting, to prohibit cutting within 100 ft of small and medium F streams until final rules come into effect. Much more riparian habitat will

be subject to inadequate protection with the fall harvests if you do not do this. The effect of these harvests will be magnified by the warm, low snow pack winter predicted this year.

I urge you to draft a proposal with a no-cut riparian buffer of at least 90 feet, and to avoid “on average” and “active management” and variable retention based on basal area, when defining buffers. If you end up including “on average,” I urge you to carefully define this as allowing changes in buffer width only as mandated by terrain, and not by choice, i.e. operators not allowed to harvest in closer to the stream to cut more desirable trees, and go out farther in compensation to leave less desirable trees. That is often the current practice of “on average,” and it is not conducive to producing the most effective buffer or to producing future high quality LWD. If you do end up permitting cutting within the buffer, I urge you to emulate the California rules, which require such thinning to result in an increase in average tree diameter, to leave the 13 largest trees per acre, and to leave 70-80% canopy. My experience in viewing the harvest areas bordering me, is that basal area-based active management results in a poor quality buffer, leaving the smallest dbh trees permitted, often cutting down to the 20 foot no cut line, and having many of the remaining now freestanding buffer trees go down the first windy night. Windy nights are not an “unpredictable act of nature,” but reliably happen every year, bringing down trees which are no longer protected as part of a deep stand, and should be taken into account when crafting buffer widths.

I urge you to include all georegions to which the available data can reasonably apply, as determined by your staff and discussed by Jeremy Groom. We cannot afford to wait another 10 years for studies in each georegion.

I urge you to include all fish bearing streams, not just SSBT streams. I urge you to include all reaches of all streams navigable by fish. I’ve walked with the ODFW guys doing salmon surveys on the large F stream which crosses my property. I’ve seen how hard it is to see the juveniles, to count them, to be sure of species ID. As far as I can tell, if the stream is navigable by salmon, they either have been there, are there now (see them or not,) or could be in the future.

The only argument against protecting our streams with adequate buffers is economic loss to landowners. Oregon Small Woodlands Association (OSWA) has recruited many small woodland owners to testify at BOF meetings. OSWA, however, represents only a small percent of landowners. As you are probably aware, many rural Oregonians are just not joiners, and I actually don’t know any local woodland owners who belong to OSWA. But they do follow the news, they know salmon are dying due to warm water, and they know what the streams up here look like after big harvests. As I testified previously, small landowners around me are upset about the treatment of the streams on industrial lands upstream and downstream of their properties. The phrases I hear are “it’s criminal what they are doing,” “I thought there were laws to protect the streams,” “why isn’t the Department of Forestry doing anything about this,” ETC. Most small landowners do not actively manage inside the RMA, most treat it as a “no-cut” buffer, even Jim James of OSWA admitted that to me. He says even so, many landowners don’t want to “give up the option.” I am sure I could also phrase the question in such a way to get that answer, but the spontaneous response from most people near me is that they want better protection of the streams on timber company land, and will choose to protect their own stream reaches when they harvest. Some small landowners will indeed suffer economic loss, but we can follow the example of Washington’s small landowner exemptions to mitigate this.

(Please do not construe the above as critical of OSWA overall, which is an outstanding and effective organization. I am just making the point that OSWA does not represent all small landowners’ views on riparian protection.)

The biggest real economic impact of wider buffers will be to industrial timber companies. We do need our industrial timber companies to thrive, but most can absorb the small percent loss in profits with better riparian protection. Moreover, the economic costs of stream restoration are always much greater than the economic losses due to stream protection with adequate buffers. And where I live, I suspect that it will not be possible to

restore what has already been lost by inadequate protection. I have watched the ongoing efforts to restore a fish stream, and watched the ongoing new degradation of riparian habitat in other streams. tributary to that stream. In the balance between degradation and restoration, degradation is winning. The condition of our streams, as stated before, is not static, and they will continue to warm, even without harvest.

I believe in the future we will look back on this Board's riparian rules decision as pivotal in determining what happened to our streams, our fish, much of what we value as Oregonians. It will be the legacy of this Board of Forestry. Again, I have much sympathy for the difficulty of your position. I urge you to listen to the stakeholders' opposing opinions, but to make your decision based on what is best for Oregon in the long term, 10 years, 50 years, 100 years, down the road.

Thank you again for all that you do.

Sincerely,  
Candace Bonner  
Small woodlands owner  
Public member, NWRFPC  
44095 SE Trout Creek Rd,  
Corbett, OR 97019

Richard Whitman referred to BLM's proposed new RMPs for Western Oregon. I pasted below some excerpts from the BLM DEIS chapter on climate change, which are related to stream warming, as they include citations to relevant studies. As one of the fish biologists quoted in the staff report pointed out, the higher the baseline temperature of a stream, the more likely changes due to harvest will have biological consequences. Also, as several speakers pointed out at your meetings, there is a temperature above which almost all salmon will die, but changes in health, reproduction, and survival are seen at much lower temperatures, and progressively worsen as temperature increases.

Link: <http://www.blm.gov/or/plans/rmpswesternoregon/deis.php> Chapter 3, Climate Change, p 132-159

The Pacific Northwest (Oregon, Washington, Idaho, and western Montana) has experienced many of the changes noted globally and nationally. The Pacific Northwest has warmed by 1.3 oF since 1895, with statistically-significant warming in all seasons except spring, lengthening the frost-free period by 35 days (Snover *et al.* 2013). The frequency of extreme high nighttime temperatures has increased, with a statistically-significant increase west of the Cascade Mountains; however, no clear change in other temperature extremes has emerged (Dalton *et al.* 2013, Snover *et al.* 2013). Annual precipitation has no clear trend either upward or downward with high interannual variability (Snover *et al.* 2013). Although annual snowpack also fluctuates widely, generally snow accumulation is declining, and spring snowmelt is occurring earlier, leading to an earlier peak in streamflow in snowmelt-influenced streams (Snover *et al.* 2013). p142

Given the small increases in precipitation and the more statistically-significant increases in temperature, the entire planning area is becoming warmer and drier, particularly in winter and at night. p 143

In western Oregon, streams arising in the Coast Range are surface water-sourced from rain, whereas streams arising in the Cascades are groundwater-sourced from a mix of rain and snow, with predominately rain below 1,300 feet elevation, predominately snow above 4,900 feet, and a mix of rain and snow between 1,300 and 4,900 feet (Tague and Grant 2004, Safeeq *et al.* 2013, Klos *et al.* 2014). **Total annual streamflow has been declining in the Pacific Northwest and current flows are similar to those in the 1930s, one of the driest periods on record (Luce *et al.* 2013).** While scientists do not understand the exact causes, some combination of warming temperatures, decreasing snow,

and decreasing mountain precipitation due to weakening of the westerly winds in winter appear to play a role (Dalton *et al.* 2013, Luce *et al.* 2013, Berghuijs *et al.* 2014).

Stream temperatures in the United States as a whole and in the Northwest have been increasing (Bartholow 2005, Kaushal *et al.* 2010, Dalton *et al.* 2013).

Northwest streams typically have cooling trends in spring, consistent with increasing precipitation, but warming temperatures in summer, fall, and winter. The cooling in spring is not enough to fully offset warming in the other seasons, leading to an overall warming trend in stream temperatures (Isaak *et al.* 2012). The rates of warming are highest in summer, with greater summer warming occurring in streams with the greatest decrease in discharge instead of the streams with the lowest discharge (Isaak *et al.* 2012). Overall, stream temperatures track with air temperatures, although there is often a slight lag (Isaak *et al.* 2012, Arismendi *et al.* 2013).

By 2014-2070, the number of frost-free days is projected to increase by 35 days ( $\pm 6$  days) relative to 1971-2000. Climate modeling indicated the number of growing degree-days using a base of 50 oF would increase by 51 percent ( $\pm 14$  percent). The number of hot days (i.e., days with maximum temperatures greater than 90 oF, 95 oF and 100 oF, as well as the number of consecutive days above 95 oF and 100 oF) would increase, while the cold days (with minimum temperatures of less than 32 oF, 10 oF, and 0 oF) would decline. The number of very wet days (with precipitation above 1 inch, 2 inches, 3 inches, and 4 inches) would increase, as would the dry spells (maximum run of days with less than 0.1 inch).

A characteristic of all these drought types is a low winter snowpack combined with high evapotranspiration demand during the growing season. The warm-dry drought; hot-dry drought; and very hot drought are also associated with more severe fire seasons in western Oregon.

Mean summer streamflow is expected to continually decrease, becoming approximately 30 percent less by the end of the century (Wu *et al.* 2012)

Non-climate factors, such as degree of stream shading, amount of groundwater input, and how streams and reservoirs are managed are also important drivers of stream temperatures, and can result in stream cooling at the same time that air temperatures are warming (Arismendi *et al.* 2012). Regardless, in the Northwest, warming air temperatures and declining summer base flows are strongly associated with

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warming stream temperatures (Kaushal *et al.* 2010, Isaak *et al.* 2012), with additional warming expected through the 21<sup>st</sup> century. If past trends continue, then some streams would be 1.6 to 2.0 oF warmer by mid-century than the 1980-2009 baseline (Isaak *et al.* 2012, Wu *et al.* 2012).

Fish and wildlife species considered most vulnerable to climate change include several terrestrial and many aquatic invertebrates; amphibians and cold-water fish, especially those with restricted ranges or narrow temperature requirements; and shorebirds, long-distance migratory birds that winter or stop over in western Oregon, and forest birds, especially those associated with either early seral habitat or old-growth habitat (Hixon *et al.* 2010 and references therein, NABCI 2014).



Candace Bonner  
Member (Public) – Northwest Regional Forest Practice Committee  
RE: Public Comment, June 3, 2015 Board of Forestry Meeting. Agenda Item 7,  
Riparian rule analysis  
*Contact information available through Private Forests staff*

June 3, 2015

State Forester Decker, Chairman Imeson, and Members of the Board of Forestry:

I have the privilege of serving on the Northwest Regional Forest Practices Committee. I have been part of the process as the Southwest and Northwest committees have worked hard to construct proposals for riparian rules changes to improve protection of Oregon's small and medium salmon, steelhead and bull-trout (SSBT) bearing streams, while having the least possible negative economic impact on industrial timber companies and other private forest landowners. With great respect for the committees' hard work and sincere commitment to riparian health, I feel that as a public member, I need to present a dissenting opinion to you.

I have introduced myself to you before as a small woodlands owner, living on property bordered by industrial timberlands, Bureau of Land Management forest land, and other small woodland owners like myself. My property and surrounding lands include a large type F stream, a medium type F stream, and several small type n streams. As I have observed changes to the streams with harvesting over the years, I have been convinced that the current FPA riparian rules do not adequately protect stream habitat. My fellow committee members, in contrast, all have extensive backgrounds in forestry, working for timber companies or managing and harvesting their own properties, and for the most part they perceive the current riparian rules to be working well. Again, for the most part, they do not perceive that the Ripstream study data is adequate to prove harm to fish, while I believe it is enough that the data clearly show that human activity- harvesting timber - is having an impact on water quality.

My differences of opinion from my fellow committee members stem from this, and are as follows:

- 1) Part of the Board of Forestry's (Board) assignment to the Regional Forest Practice Committees (September 2014) was to develop prescriptions for a new Riparian Protection Rule designed to meet the Protecting Cold Water (PCW) criterion to the Maximum Extent Practicable (MEP). The Oregon Department of Forestry

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(Department) spent ten years gathering scientific evidence in Oregon through the RipStream study, and invested in a thorough systematic review to take advantage of other studies done. I believe the Protecting Cold Water (PCW) criterium is shown to be an accurate marker for human activity (harvesting) induced warming of small and medium streams, and therefore exceedance is an accurate marker for inadequate stream protection. Now that we have the science, we need to limit our choices to rules which are supported by this science. Our committees worked hard to craft prescriptions to improve riparian protection, but the department analysis shows that our proposals would not meet the PCW criterium. The BOF loses all credibility if new rules are not supported by the scientific evidence we have gathered.

2) Another dimension of the Board's direction was for the RFPCs to consider both variable retention, and no-cut buffer rule alternatives. I have long believed we need to simplify our riparian rules, ideally to a no-cut buffer. The RFPCs did not consider a no-cut RMA for understandable reasons, as this would require the greatest number of trees to be left behind, and have the greatest economic impact. What are the advantages of a no-cut riparian buffer?

A no-cut RMA is easier to understand, implement and enforce.

A no-cut RMA has the strongest scientific evidence for effectiveness as shown in the systematic review.

A no-cut RMA also offers the opportunity to address large wood recruitment, a facet the Board directed the department to consider in its analysis of proposed prescriptions. As long as basal area and metrics measured "on average" allow it, it makes sense for the harvester to select the biggest and best trees for harvest. This has a marked effect on the composition of the RMA, and its ability to naturally produce large wood for stream structure over the long term.

Blow down is inevitable. A thinned RMA, or an RMA with enough basal area to be cut down to the 20 ft no cut line, is more vulnerable to blow down. Basal area measured three years after a harvest may be quite different from the basal area left at the completion of the harvest, with a marked increase in sun exposure. This is what I observe in the area where I live.

A simple no cut buffer would help correct the mistrust of ODF by many small landowners and the public at large, fostered by our current complex rules based on basal area. Those who have heard the 100-70-50 ft RMA numbers, look at the stream crossing the big clearcut, and question how the 0-2 tree RMA can be legal. I can explain about basal area and active management to no effect. Others have heard the Oregon Forest Resources Institute ad on the radio, which refers to protection of water

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quality and habitat under the Oregon Forest Practices Act. This supports their belief that there are regulations protecting streams. The previously shady stream in the clearcut does not look protected to them. This can lead to the suspicion that timber companies are violating these regulations, and ODF is looking the other way. I get calls and emails from landowners who believe timber companies are breaking the law.

3) The Board's direction included a desire for the Northwest and Southwest Regional Forest Practice Committees to assist in the Department's analysis of which stream reaches should be in scope. The Committees opted to include only those segments with current SSBT use. As we are still far below the historic populations of SSBT fish, it makes more sense to continue to treat a stream as a SSBT stream until a barrier to fish migration is reached.

4) The Regional Committees were also asked to work with the Department in their analysis of the scope of georegions to be included. The Committees took a position that their riparian prescriptions be considered only for the Coast Range georegion since the bulk of the RipStream sites were located there. I believe we should allow our ODF staff who have the appropriate scientific knowledge base to tell us when data can be extrapolated from the region in which it has been collected to other georegions, based on the similarity of vegetation and other conditions. New rules should include all georegions in which the data can reasonably be expected to apply.

5) Finally, the Board asked the Committees to consider regulatory and voluntary riparian protection options, or combinations thereof. The Committees opted to only put forth a voluntary option. I believe this would be problematic, and that regulations are necessary. Voluntary measures can be carried out in whole, in part, or not at all. Moreover, voluntary measures will be incredibly difficult and expensive to monitor for effectiveness. A regulatory no cut RMA of specific width can be monitored in a few representative areas, and elsewhere compliance to this RMA can be a reasonable and inexpensive proxy for effectiveness. The members of my committee, and the operators we visited as we considered operator of the year, all would be likely to fully comply with voluntary measures. The large scale operator who trespassed onto my own property, would never leave a tree behind unless regulations required it, and sometimes not even then. It is unlikely he is the only operator who takes this path. He does not believe there is any good achieved by leaving trees. The harvester needs to feel a voluntary effort is accomplishing a worthy goal in order to be motivated to leave trees and give up income when the law does not require it.

6) The economic impact on landowners of increased riparian protection, and especially the impact on non-industrial, small landowners, has been a topic in public comment and in our Committee discussions. The impact is considerable, as seen in the Department analysis. The Committees have directed great effort to come up with prescriptions

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which minimize this impact. I have found, however, that many small landowners around me support better protection of streams, including type n. Most do not enter the RMA when they harvest. My neighbors left generous no entry RMAs even around n streams when they harvested. What I hear from them as small landowners in terms of economic impact of harvest rules and lack thereof, are complaints about the lack of a buffer requirement when large clear cuts extend to their borders. The recent industrial harvest bordering on one neighbor resulted in 25 large fir of theirs going down within their border on the first windy night after the industrial harvest. That represented a big economic loss for them. In contrast, they felt the benefits of leaving a wide buffer around their own n stream when they harvested a section of their forest several years ago, far outweighed the loss of dollars from the trees left behind. My committee's perception is that small landowners are overwhelmingly opposed to increased stream protection, and my experience is that many would welcome better protection of stream and habitat in their areas. This is probably the main reason I feel that as a public member I need to express some dissent to the Committees' final recommendations.

#### Discussion:

The Regional Forest Practice Committees have worked hard to craft riparian prescriptions to improve protection of water quality while minimizing economic impact on the industrial timber industry and other private landowners. I am expressing dissent only because our own analysis indicates that our Committee prescriptions are inadequate to prevent timber harvests from impacting water quality, and inadequate to meet the PCW criterium.

Keeping our working forests working and our timber industry economically viable is in the interest of all Oregonians, from timber landowners to environmentalists. As Peter Daugherty has eloquently and repeatedly stated, from an environmental point of view, we are much better off having land in working forest than in subdivisions or agriculture. Why is there not greater recognition of this in the environmental community? There is a lack of trust that the FPA is adequate to prevent degradation of our waters and habitat. I believe we will only come together when the FPA rules are unquestionably based on scientific evidence of effectiveness in protecting our natural resources as they are intended to do. We won't come together until we can say to the timber harvester that evidence clearly shows that this is the least amount of trees which can be left and still protect water quality. And we can say to the environmental community, evidence clearly shows that we do not need to leave more trees than this to protect this stream.

Our current riparian rules have been definitively shown to fail the criterium of avoiding human impact on water quality. Correcting this puts short term for-profit economics, and water quality protection, at odds - protecting water quality requires more trees to be

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left behind, every tree left behind is dollars left behind. The long term economics are less clear cut. Good quality water is becoming the most valuable commodity on earth. Stream restoration is many times more expensive than stream protection.

It would be ideal if ODF could work with the legislature and the governor to mitigate the short term economic effects of improved riparian protection, with such measures as tax credits, subsidies, and conservation easement purchases. Regardless, we cannot avoid the risks we run if we do not act quickly to improve riparian protection. We have a low snow pack this year, and low snow pack years are predicted to be more frequent. We already have many streams 303d listed for temperature. The long term economic effects of human activity impacting water quality, on top of other factors which our rules cannot control, such as climate change, are likely to be much more devastating than the short term effects of losing income by leaving trees.

Thank you for taking the time to read and consider this in your deliberations.

Respectfully submitted,

Candace Bonner  
NWRFPFC, public member  
Small woodland owner, Corbett, OR

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Board of Forestry September 9, 2015 Meeting Minutes

Candace Bonner

RE: Public Comment, July 23, 2015 Board of Forestry Meeting. Agenda Item 2,  
Developing riparian rules prescriptions

July 23, 2015

State Forester Decker, Chairman Imeson, and Members of the Board of Forestry:

I submitted written commentary on the riparian rules process at the last Board meeting (attached below) and appreciate the opportunity to add a few additional comments.

First, we should all take note that this is the warmest year in Oregon in 100 years, with record breaking temperatures in the Columbia. Rivers and streams are low due to our warm winter and low snowpack, with another warm winter predicted. Salmon die-offs due to warm water are in the news, in the Deshutes, the Columbia, and the Willamette Rivers. Even the large salmon and steelhead spawning stream crossing my own property appears to have exceeded the biologic marker of 18 degrees centigrade this year. Unusually hot years are predicted to become increasingly frequent.

This makes the point that the biologic danger levels are easy to exceed in hot years, and that we need to protect our riparian areas adequately for the hottest years as well as average years. The other point is that the Oregon public is currently acutely aware that our streams and rivers are too warm and salmon are dying.

Second, the Forestry Department staff report outlines three categories of prescriptions for riparian protection, but only the first, with a no-cut riparian buffer, fully protects cold water. Peter Daugherty discusses the possible “unintended consequences” of a no cut buffer in the Staff Report. He references OAR 629-640-0000, Desired Future Condition (DFC) of mature streamside stands:

The desired future condition for streamside areas along fish use streams is to grow and retain vegetation so that, over time, average conditions across the landscape become similar to those of mature streamside stands. Oregon has a tremendous diversity of forest tree species growing along waters of the state and the age of mature streamside stands varies by species. Mature streamside stands are often dominated by conifer trees. For many conifer stands, mature stands occur between 80 and 200 years of stand age. Hardwood stands and some conifer stands may become mature at an earlier age. Mature stands provide ample shade over the channel, an abundance of large woody debris in the channel, channel-influencing root masses along the edge of the high water level, snags, and regular inputs of nutrients through litter fall (OAR 629-640-0000).

I stated previously why I believe we need a no-cut riparian buffer. I see the “unintended consequences” of active management in the RMA being the elimination of the likelihood

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of ever achieving the DFC. When I moved on to my forest land 13 years ago, many of the streamside areas in this watershed were in the desired state of shady mature stands, dominated by conifers 60-80 years old, with no or few invasives. Over the years, many of the streams have had clear cut harvests, often appearing to be actively managed down to the 20 ft no cut line, and many of the remaining buffer trees have gone down in the first three years. None of these RMAs will achieve the desired future condition in my lifetime. With the current short rotations, I doubt they will ever be in the DFC state again. The unintended consequences of active management can be transforming shady, mature, conifer-dominated streamsid es, to mainly shrub and hardwood with a few smaller diameter conifers remaining.

I continue to believe that a no-cut buffer is the best way to have any chance of achieving the DFC, and retaining most of the larger conifers within the RMA. If the Board does choose to continue active management in the RMA, I believe it is essential to add more limitations than merely basal area requirements, such as borrowing a page from the California rules, which require thinning in the RMA to increase tree diameter, require leaving the 13 largest trees per acre, and require 70-80% remaining canopy. Hardwoods do make a valuable contribution to shade, but as long as they are counted in basal area, the actual result is to permit more harvest of the larger conifers within the RMA, again leaving us further from the DFC.

Third, we are all concerned about economic impacts to landowners with increased protection of our riparian areas, and disproportionate impact to small woodland owners. As I have stated previously, the small landowners I have spoken to in my area have chosen not to enter the RMA when they harvested, so would not suffer a negative impact. All are upset by what they perceive as damage to the streams, including small n streams as well as fish streams, by the industrial timber harvests in our area. The small woodland owners I have spoken to are in favor of 100 ft no cut RMAs on all streams, including n streams. My woodland neighbors are of course a small sample. For those small landowners who would be hurt by losing money from trees which they would harvest under the old rules, I suggest we borrow a page from the Washington riparian rules, which give exemptions to small landowners. (See Summary of Riparian Rules for Neighboring States, page 5.)

I agree with Peter Daugherty that the best way to protect Oregon's environment is to keep our private forest land in working forest, and that Oregon benefits environmentally as well as economically from a thriving forestry industry. However, I believe forestry cannot continue to thrive unless the Oregon public, including environmentalists, believe in and support the environmental benefits of a thriving timber industry. This will not happen until we can all trust that our shared natural resources of water and wildlife habitat are adequately protected, and not threatened by forest practices. This is the moment to win the public's trust, by enacting rules that fully protect cold water and riparian habitat. Any halfway measures, any compromises that compromise riparian health, will continue to foster public mistrust. I urge you to look at the big picture and the long term consequences as you struggle to make the best choices for Oregon. And I urge you to put a

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temporary set of rules in place now, so we will not have further compromise of our streams while waiting for our new rules to go into effect.

Thank you for taking the time to read and consider this in your deliberations.

Respectfully submitted,

Candace Bonner  
NWRFPC, public member  
Small woodland owner, Corbett, OR

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Board of Forestry September 9, 2015 Meeting Minutes

Candace Bonner  
Member (Public) – Northwest Regional Forest Practice Committee  
RE: Board of Forestry Riparian Rules Subcommittee

August 30, 2015

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I should note that the opinions expressed here are entirely my own, and do not represent the opinion of anyone else on the NWRFP.

This year's drought and heat wave, and salmon die-offs in record high water temperatures, should bring home the urgency of protecting our streams from warming due to harvest. Richard Whitman presented information on how many of our streams are already 303d listed for temperature, and presented fairly dire predictions of what our stream temperatures will be over the next decades. The BLM Draft Environmental Impact Statement (DEIS) for their proposed changes in management practices, Chapter 3 on climate change, includes discussion of Oregon's decreasing total annual streamflow, now down to the levels of 1930, one of the driest periods on record, as well as the increasing temperatures of Oregon streams. We cannot afford to add additional warming caused by our harvest practices.

We have good science to tell us what we need to do. I do not agree that the science is "all over the place." The systematic review taken with the Ripstream data give us clear direction. The PCW number of 0.3 degrees C has been abused and confused, when it is actually an excellent and well-documented marker for increase in stream temperature caused by harvest, not due to chance or limits of measurement.

I have much sympathy for your position. There is no decision, no proposal, you can possibly make that will not leave many stakeholders unhappy and even angry. However, I urge you to draft a proposal that is based on the best available science, that fully protects our streams, and not look for compromise. The stakes for Oregon are just too high.

First, I urge you to put into effect temporary rules, hopefully at your September meeting, to prohibit cutting within 100 ft of small and medium F streams until final rules come into

effect. Much more riparian habitat will be subject to inadequate protection with the fall harvests if you do not do this. The effect of these harvests will be magnified by the warm, low snow pack winter predicted this year.

I urge you to draft a proposal with a no-cut riparian buffer of at least 90 feet, and to avoid “on average” and “active management” and variable retention based on basal area, when defining buffers. If you end up including “on average,” I urge you to carefully define this as allowing changes in buffer width only as mandated by terrain, and not by choice, i.e. operators not allowed to harvest in closer to the stream to cut more desirable trees, and go out farther in compensation to leave less desirable trees. That is often the current practice of “on average,” and it is not conducive to producing the most effective buffer or to producing future high quality LWD. If you do end up permitting cutting within the buffer, I urge you to emulate the California rules, which require such thinning to result in an increase in average tree diameter, to leave the 13 largest trees per acre, and to leave 70-80% canopy. My experience in viewing the harvest areas bordering me, is that basal area-based active management results in a poor quality buffer, leaving the smallest dbh trees permitted, often cutting down to the 20 foot no cut line, and having many of the remaining now freestanding buffer trees go down the first windy night. Windy nights are not an “unpredictable act of nature,” but reliably happen every year, bringing down trees which are no longer protected as part of a deep stand, and should be taken into account when crafting buffer widths.

I urge you to include all georegions to which the available data can reasonably apply, as determined by your staff and discussed by Jeremy Groom. We cannot afford to wait another 10 years for studies in each georegion.

I urge you to include all fish bearing streams, not just SSBT streams. I urge you to include all reaches of all streams navigable by fish. I’ve walked with the ODFW guys doing salmon surveys on the large F stream which crosses my property. I’ve seen how hard it is to see the juveniles, to count them, to be sure of species ID. As far as I can tell, if the stream is navigable by salmon, they either have been there, are there now (see them or not,) or could be in the future.

The only argument against protecting our streams with adequate buffers is economic loss to landowners. Oregon Small Woodlands Association (OSWA) has recruited many small woodland owners to testify at BOF meetings. OSWA, however, represents only a small percent of landowners. As you are probably aware, many rural Oregonians are just not joiners, and I actually don’t know any local woodland owners who belong to OSWA. But they do follow the news, they know salmon are dying due to warm water, and they know what the streams up here look like after big harvests. As I testified previously, small landowners around me are upset about the treatment of the streams on industrial lands upstream and downstream of their properties. The phrases I hear are “it’s criminal what they are doing,” “I thought there were laws to protect the streams,” “why isn’t the Department of Forestry doing anything about this,” ETC. Most small landowners do not actively manage inside the RMA, most treat it as a “no-cut” buffer, even Jim James of OSWA admitted that to me. He says even so, many landowners

don't want to "give up the option." I am sure I could also phrase the question in such a way to get that answer, but the spontaneous response from most people near me is that they want better protection of the streams on timber company land, and will choose to protect their own stream reaches when they harvest. Some small landowners will indeed suffer economic loss, but we can follow the example of Washington's small landowner exemptions to mitigate this.

(Please do not construe the above as critical of OSWA overall, which is an outstanding and effective organization. I am just making the point that OSWA does not represent all small landowners' views on riparian protection.)

The biggest real economic impact of wider buffers will be to industrial timber companies. We do need our industrial timber companies to thrive, but most can absorb the small percent loss in profits with better riparian protection. Moreover, the economic costs of stream restoration are always much greater than the economic losses due to stream protection with adequate buffers. And where I live, I suspect that it will not be possible to restore what has already been lost by inadequate protection. I have watched the ongoing efforts to restore a fish stream, and watched the ongoing new degradation of riparian habitat in other streams tributary to that stream. In the balance between degradation and restoration, degradation is winning. The condition of our streams, as stated before, is not static, and they will continue to warm, even without harvest.

I believe in the future we will look back on this Board's riparian rules decision as pivotal in determining what happened to our streams, our fish, much of what we value as Oregonians. It will be the legacy of this Board of Forestry. Again, I have much sympathy for the difficulty of your position. I urge you to listen to the stakeholders' opposing opinions, but to make your decision based on what is best for Oregon in the long term, 10 years, 50 years, 100 years, down the road.

Thank you again for all that you do.

Sincerely,  
Candace Bonner  
Small woodlands owner  
Public member, NWRFP  
44095 SE Trout Creek Rd,  
Corbett, OR 97019

Richard Whitman referred to BLM's proposed new RMPs for Western Oregon. I pasted below some excerpts from the BLM DEIS chapter on climate change, which are related to stream warming, as they include citations to relevant studies. As one of the fish biologists quoted in the staff report pointed out, the higher the baseline temperature of a stream, the more likely changes due to harvest will have biological consequences. Also, as several speakers pointed out at your meetings, there is a temperature above

which almost all salmon will die, but changes in health, reproduction, and survival are seen at much lower temperatures, and progressively worsen as temperature increases.

Link: <http://www.blm.gov/or/plans/rmpswesternoregon/deis.php> Chapter 3, Climate Change, p 132-159

The Pacific Northwest (Oregon, Washington, Idaho, and western Montana) has experienced many of the changes noted globally and nationally. The Pacific Northwest has warmed by 1.3 oF since 1895, with statistically-significant warming in all seasons except spring, lengthening the frost-free period by 35 days (Snover *et al.* 2013). The frequency of extreme high nighttime temperatures has increased, with a statistically-significant increase west of the Cascade Mountains; however, no clear change in other temperature extremes has emerged (Dalton *et al.* 2013, Snover *et al.* 2013). Annual precipitation has no clear trend either upward or downward with high interannual variability (Snover *et al.* 2013). Although annual snowpack also fluctuates widely, generally snow accumulation is declining, and spring snowmelt is occurring earlier, leading to an earlier peak in streamflow in snowmelt-influenced streams (Snover *et al.* 2013). p142

Given the small increases in precipitation and the more statistically-significant increases in temperature, the entire planning area is becoming warmer and drier, particularly in winter and at night. p 143

In western Oregon, streams arising in the Coast Range are surface water-sourced from rain, whereas streams arising in the Cascades are groundwater-sourced from a mix of rain and snow, with predominately rain below 1,300 feet elevation, predominately snow above 4,900 feet, and a mix of rain and snow between 1,300 and 4,900 feet (Tague and Grant 2004, Safeeq *et al.* 2013, Klos *et al.* 2014). **Total annual streamflow has been declining in the Pacific Northwest and current flows are similar to those in the 1930s, one of the driest periods on record (Luce *et al.* 2013).** While scientists do not understand the exact causes, some combination of warming temperatures, decreasing snow, and decreasing mountain precipitation due to weakening of the westerly winds in winter appear to play a role (Dalton *et al.* 2013, Luce *et al.* 2013, Berghuijs *et al.* 2014).

Stream temperatures in the United States as a whole and in the Northwest have been increasing (Bartholow 2005, Kaushal *et al.* 2010, Dalton *et al.* 2013).

Northwest streams typically have cooling trends in spring, consistent with increasing precipitation, but warming temperatures in summer, fall, and winter. The cooling in spring is not enough to fully offset warming in the other seasons, leading to an overall warming trend in stream temperatures (Isaak *et al.* 2012). The rates of warming are highest in summer, with greater summer warming occurring in streams with the greatest decrease in discharge instead of the streams with the lowest discharge (Isaak *et al.* 2012). Overall, stream temperatures track with air temperatures, although there is often a slight lag (Isaak *et al.* 2012, Arismendi *et al.* 2013).

By 2014-2070, the number of frost-free days is projected to increase by 35 days ( $\pm 6$  days) relative to 1971-2000. Climate modeling indicated the number of growing degree-days using a base of 50 oF would increase by 51 percent ( $\pm 14$  percent). The number of hot days (i.e., days with maximum temperatures greater than 90 oF, 95 oF and 100 oF, as well as the number of consecutive days above 95 oF and 100 oF) would increase, while the cold days (with minimum temperatures of less than 32 oF, 10 oF, and 0 oF) would decline. The number of very wet days (with precipitation above 1 inch, 2 inches, 3 inches, and 4 inches) would increase, as would the dry spells (maximum run of days with less than 0.1 inch).

A characteristic of all these drought types is a low winter snowpack combined with high evapotranspiration demand during the growing season. The warm-dry drought; hot-dry drought; and very hot drought are also associated with more severe fire seasons in western Oregon.

Mean summer streamflow is expected to continually decrease, becoming approximately 30 percent less by the end of the century (Wu *et al.* 2012)

Non-climate factors, such as degree of stream shading, amount of groundwater input, and how streams and reservoirs are managed are also important drivers of stream temperatures, and can result in stream cooling at the same time that air temperatures are warming (Arismendi *et al.* 2012).

Regardless, in the Northwest, warming air temperatures and declining summer base flows are strongly associated with

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warming stream temperatures (Kaushal *et al.* 2010, Isaak *et al.* 2012), with additional warming expected through the 21<sup>st</sup> century. **If past trends continue, then some streams would be 1.6 to 2.0 oF warmer by mid-century than the 1980-2009 baseline (Isaak *et al.* 2012, Wu *et al.* 2012).**

Fish and wildlife species considered most vulnerable to climate change include several terrestrial and many aquatic invertebrates; amphibians and cold-water fish, especially those with restricted ranges or narrow temperature requirements; and shorebirds, long-distance migratory birds that winter or stop over in western Oregon, and forest birds, especially those associated with either early seral habitat or old-growth habitat (Hixon *et al.* 2010 and references therein, NABCI 2014).