UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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WATER DIVISION

September 2, 2021

Mr. Gary Hess
Regulatory and Stewardship Program Manager
Forestry and Fire Division
Idaho Department of Lands
3284 W Industrial Loop
Coeur d'Alene, Idaho 83815
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RE: IDAPA 20.02.01 – Proposed Rulemaking

Dear Mr. Hess:

The Idaho Department of Lands (IDL) proposed changes to IDAPA 20.02.01 to provide for a simplified "Shade Rule" to promote rule understanding and make compliance easier and less costly. On its rulemaking webpage, IDL states its objective is to retain management options for landowners while still affording appropriate protections to stream shade and large organic debris recruitment.

Maintaining appropriate protection of stream shade is critical to improving Idaho's water quality and preventing temperature impairments. The Shade Rule is an approved best management practice for nonpoint source activities (IDADA 58.01.02.350.03), and is designed, implemented, and maintained to provide full protection or maintenance of water quality beneficial uses (IDAPA 58.01.02.350.01).

EPA commends IDL and the Forest Practices Advisory Committee (FPAC) for proposing rule language that simplifies the understanding and implementation of the Shade Rule. During the negotiated rulemaking, EPA expressed its concern that some rule changes would reduce shade protections below that afforded by the existing rule. In addition, EPA provided written comments intended to help IDL and FPAC ensure the negotiated rule changes would meet the objective of affording appropriate protections to stream shade and large organic debris recruitment.

EPA reviewed IDLs Negotiated Rulemaking Summary and disagrees with some of its conclusions pertaining to stream shade. Enclosed are detailed comments explaining our disagreements and rationale for revising the proposed rule to maintain adequate protections. We support simplification of the existing rule and encourage IDL to revise the proposed rule to maintain the protections to stream shade and large wood recruitment achieved by the existing rule while addressing the weaknesses highlighted by the 2020 Shade Effectiveness Study.

Thank you for the opportunity to provide comment and participate in the proposed rulemaking. Please contact Dan Brown, Forest Sector Advisor, at brown.dan@epa.gov if you need any additional information.

Sincerely,

Grandinetti, Carmela

Digitally signed by Grandinetti, Carmela
Date: 2021.09.02 09:44:02 -07'00'

Cami Grandinetti, Branch Manager
Standards, Assessment, and Watershed Management Branch

Enclosure

cc: Mr. Jason Pappani, IDEQ

Mr. Paul Buckland, Chair FPAC

1. **To ensure adequate shade for protection of temperature water quality standards, IDL must maintain minimum stocking of RS60 in the innermost (0-25-ft from stream) Stream Protection Zone (SPZ)**

During development of the 2013-2014 shade rule revisions, FPAC and IDL reviewed extensive riparian management modeling scenarios and concluded that trees immediately adjacent to the stream (0-25ft) are the most important for maintaining stream shade. They concluded that restricting thinning in the stream-adjacent zone to maintain RS60 could permit greater overall management flexibility in the outer 25-75ft zone while limiting overall shade loss to less than 10%. Applying these scientifically based conclusions, IDL and FPAC established the existing shade rule to maintain at least RS60 in the 0-25ft Stream Protection Zone (SPZ) (Teply, 2014).

During development of the current proposed rule, IDL and FPAC proposed modifications to address situations observed during the 2020 Shade Effectiveness Study where the **preharvest** inner 0-25ft SPZ is understocked (below the target RS60) and subsequent harvest in the outer 25-75ft SPZ was shown to result in unacceptable shade loss (above 10%). EPA agrees it is important to address this scenario and commends IDL and FPAC for doing so. However, the proposed modifications should not result in compromising water quality protections in the current rule.

Specifically, the proposed rule eliminates the minimum stocking level of RS60 in the 0-25ft SPZ that IDL and FPAC previously determined essential to providing shade and large woody debris recruitment. In its Negotiated Rulemaking Summary[1], IDL suggests the elimination of these important water quality protections is supported by effectiveness monitoring and "commissioned additional calculations" consistent with its adaptive management framework (See IDL Response #12). IDLs "commissioned additional calculations" do not appear in the rulemaking docket, however, EPA obtained some of this information as presented in the following two documents: 1) February 11, 2020, Memo to Gary Hess, IDL, from Mark Teply Consulting, and 2) January 23, 2020, email to Gary Hess, IDL, from Mark Teply.

In addition to recommending scaling to compensate for the proposed condensed tree-weighting scheme as noted in IDL Response #12, both the memo and email cited above emphasize the importance of maintaining minimum stocking in the inner 0-25ft SPZ. Specifically, the January 23, 2020 email states that it is *"essential to assure minimum stocking in the stream-adjacent no-harvest buffer. This was contemplated via analysis for the Idaho Forestry Program and preliminary analyses that simulated thinning to the stream. Both showed minimum stocking (55% RS) was needed to limit shade loss."*

Further, the February 11, 2020 memo from Mark Teply advises that IDL *"Ensure adequate stocking exists in the stream-adjacent no-harvest zone. Our simulations for the 2014 rule revision assumed the same pre-harvest stocking in both the no-harvest and harvest zones--that is, RS 55 or greater. Our work for the*

[1] IDL's Negotiated Rulemaking Summary, docket 20-0201-2101 dated 7/22/2021: https://www.idl.idaho.gov/wp-content/uploads/sites/2/2021/07/Negotiated-rulemaking-summary-20-0201-2101.pdf

Idaho Forestry Program (Teply and McGreer 2013) demonstrates the importance a stream-adjacent no-harvest zone for protection against shade loss in central Idaho. Preliminary analyses for the 2014 rule confirmed this elsewhere in the state. SPZ rules in neighboring [states] acknowledge its value. In my opinion, this one remedy can offset most outliers and obviate the need for further remedy."

Similarly, Teply and McGreer (2013) reported that at least 50% of the shadow cast by the entire riparian management zone is provided by the inner 0-25ft zone. Accordingly, ensuring the rule continues to retain more trees within the inner zone would result in less overall shade loss from the removal of the same volume of trees in the outer 25ft to 75ft SPZ.

In addition, in its Negotiated Rulemaking Summary, IDL suggests the Cramer Fish Sciences Report (2012) report recommended thinning throughout the 75-ft SPZ and that while stream adjacent stocking was an important contributor to the overall shade, thinning the inner zone to levels greater than RS55 limits the benefit of treatment (see IDL Response #7). EPA would like to note that the 2012 Cramer Fish Science Report assumed that relative stocking greater than 55 reflects the zone of competition-induced mortality, and the authors note the importance of competition-induced mortality for the recruitment of LWD. It is not clear how IDL is accounting for LWD recruitment in the proposed rule and there is no information in the docket evaluating whether the proposed rule provides for adequate LWD wood recruitment. IDL noted its preference for intensive management to avoid significant mortality, however, the proposed management preference of removing the inner zone RS 60 target seems inconsistent with the 2012 Cramer Fish Sciences Report and LWD recruitment. EPA recommends IDL and FPAC conduct further assessment to ensure its goals for LWD recruitment can be met with the proposed rule.

As noted above, the recently commissioned calculations by IDL[2] corroborate the scientific underpinnings utilized during the 2013-14 shade rule development; specifically, the need to maintain a minimum stocking level of RS60 in the 0-25ft SPZ. While IDL and FPAC indicated "practical reasons" make it unlikely for the 0-25ft SPZ to be harvested below RS60, individual land-owner values drive harvest practices within the constraints of the rules. The proposed rule has no specified minimum tree retention constraint for the inner 0-25ft SPZ and, therefore, the opportunity to harvest below RS60 is real. To provide shade that is protective of Idaho's temperature water quality standards the rule should maintain the minimum tree retention of RS60 in the 0-25ft SPZ.

In conclusion, it appears IDL and FPAC are proposing rulemaking changes contrary to recently commissioned work by Mark Teply and all prior supporting science and expert advice. EPA has not reviewed any scientific support for IDL's elimination of the current minimum tree retention for the 0-25ft SPZ and it appears IDL and FPAC have no scientific basis for this proposal. If IDL has additional information to support its elimination of tree retention in the inner 0-25ft SPZ, this information should be added to the rulemaking docket and the public comment period extended to allow stakeholder ample time to consider the new information.

[2] Memo to Garry Hess, IDL, from Mark Teply Consulting dated February 11, 2020, with attached email dated January 23, 2020

2. **IDL should engage the FPAC to develop a simplified approach to maintaining RS60 in innermost SPZ (0-25-ft from stream)**

In its comments on the negotiated rulemaking, EPA suggested simplified language that could maintain RS60 in the inner 0-25ft SPZ. The suggested language was intended to inspire additional dialog among the FPAC and enable them to advise IDL during the negotiated rulemaking. The FPAC broadly represents the interests of Idaho and the objectives of sustainable forestry and we anticipated that our suggested language on this topic would be used by FPAC as a starting point for potential revisions. However, it appears no FPAC meetings were scheduled during the negotiated rulemaking, denying FPAC any opportunity to discuss improvements with IDL.

In its Negotiated Rulemaking Summary, IDL indicated that EPA's suggested language would add complexity and result in greater than RS60 (see IDL Response #8). We agree the language originally suggested by EPA could result in greater than RS60 within the inner zone. However, we disagree that maintaining minimum stocking levels in the 0-25ft SPZ adds additional complexity, when compared to the existing rule. EPA believes the full FPAC could better advise IDL on the practicalities of a simplified approach and should be consulted during the formal rulemaking.

3. **IDL should establish minimum threshold values for the inner 0-50ft SPZ that are adequate to mitigate shade loss.**

As noted in comment one above, during development of the proposed rule, IDL and FPAC proposed modifications to address situations where the **preharvest** inner SPZ is understocked (below RS60) and subsequent harvest in the outer SPZ was shown to result in unacceptable shade loss (above 10%). EPA conducted modeling to support IDEQ's assessment of applying a weighted average relative stocking across the entire 0-75ft SPZ to mitigate shade loss under situations where the **preharvest** inner zone is understocked (below RS60). Specifically, a November 23, 2020 Draft Memorandum from EPA to IDEQ, assessed the application of a weighted average RS43 across the entire 0-75ft SPZ factor based on the 60/60/10 harvest option ((RS60+RS60+RS10)/3=RS43). Under the weighted average approach, additional vegetation is left in the outer SPZ when preharvest RS is below the RS60 target for the inner SPZ, thus maintaining an equivalent weighted average RS43 across the entire riparian zone SPZ.

The assessment showed that the weighted average could provide some mitigation of excessive shade loss, but only when the inner 0-50ft SPZ is maintained above RS40[3]. The proposed rule establishes a minimum threshold for the inner 0-50ft SPZ as specified in Paragraph 030.07.e.iii:

> iii. Prior to and during harvest, cutting in any part of a given one hundred foot SPZ segment is only allowed if the weighted tree count in the inner fifty feet (50') of that segment is above: thirty-three (33) north of the Clearwater/Lochsa Rivers, twenty-eight (28) between the Clearwater/Lochsa and Salmon Rivers, twenty-three (23) South of the Salmon River, and twenty-

[3]Draft Memorandum From: P. Leinenbach, R10 USEPA, To: H. Stone, Idaho DEQ, and D. Brown, R10 USEPA; Estimated shade loss associated with a RS 60/10 harvest when the preharvest inner riparian zone RS is below the target (i.e., RS60) and outer riparian zone (i.e., 50' to 75') is harvested to maintain a weighted average RS value of 43.3 for the entire riparian zone (i.e., 0 to 75'). November 23, 2020.

> one (21) in drier forests with Stream Protection Zones dominated by Douglas-fir and ponderosa pine. Note that the combination of minimum values for the inner fifty feet (50') and outer twenty-five feet (25') do not meet the minimum for the SPZ segment; additional trees need to be left in one or both areas to meet the rule.

However, it appears the minimum threshold WTC in the proposed rule was calculated based on a minimum stocking of approximately RS37. To provide shade roughly equivalent to the existing rule, the minimum WTC threshold in the proposed rule must be based on RS40 as noted in the November 23, 2020 memo.

In its Negotiated Rulemaking Summary, IDL provides a link to an EPA memo dated July 1, 2020 and indicates they and FPAC reviewed the calculations in the EPA memo. IDL offers several interpretations of the information in the memo and concludes that the information, combined with shade effectiveness study, is supportive of the approach taken in the proposed rule (see IDL Responses #9 and 10)

EPA believes IDL is misinterpreting its modeling analyses and disagrees with the conclusion IDL is drawing. As noted above, at the request of IDEQ, EPA conducted modeling of forest practice scenarios to support IDEQ's participation in the FPAC. Results from these efforts were provided to IDEQ in a Memorandum dated July 1, 2020 and a Draft Memorandum dated November 23, 2020. Both modeling efforts were intended to aid IDEQ in understanding additional tree retention requirements necessary to make up for lost shade when the when pre-harvest inner SPZ was below the current rule minimum. (The July memo presented modeled shade loss levels associated with weighted average relative stocking levels of 40 and 50 in the 0-75ft SPZ when RS levels in the inner 0-25ft fell below RS60. The November memo presented modeled shade loss levels associated with a weighted average relative stocking of 43 in the 0-75ft SPZ when RS levels in the inner 0-50ft fell below RS 60.)

IDL is applying EPA's modeling results inappropriately. The modeling was conducted solely to compare shade loss from the current rule with shade loss from specific alternative scenarios. As such, the only conclusion that can be drawn from the modeling effort is that when the **preharvest** conditions in the inner zone are below RS60, maintaining a weighted average RS43 across the entire 0-75ft SPZ in combination with maintaining a minimum weighted average RS40 across the inner 0-50ft SPZ, should produce shade equivalent to the current rule. If IDL and FPAC want the proposed rule to produce shade similar to the existing rule, an appropriate use of the modeling results would be to establish the 0-50ft SPZ WTC thresholds in paragraph (7)(e)(iii) based on a weighted average of RS40. By establishing the 0-50ft SPZ WTC thresholds based on a weighted average of RS37, the proposed rule will likely produce less shade than the current rule, which would increase water temperatures.

4. **IDL and FPAC should carefully review the Shade Effectiveness Study[4] prior to using it in an adaptive management framework.**

[4] The Effectiveness of Idaho's Class I Stream Shade Rule: Analysis of Before - After, Control - Impact Effective Shade Data; Timothy E. Link, Timothy R. Johnson, Robert Keefe, and Ryer Becker. Final Report: January 24, 2020

The Shade Effectiveness Study was conducted as part of Idaho's responsibility to evaluate if the Shade Rule, which is an approved best management practice for nonpoint source activities (IDADA 58.01.02.350.03), is designed, implemented, and maintained to provide full protection or maintenance of beneficial uses (IDAPA 58.01.02.350.01). IDEQ has established temperature Total Maximum Daily Loads to meet water quality standards for approximately 700 waterbody assessment units based on achieving system potential riparian shade conditions along impaired waters and their tributaries. Under these TMDLs, there is no margin for further removal of shade from the stream by any activity without exceeding its load capacity. In addition, because Potential Natural Vegetation temperature TMDLs are dependent upon upstream conditions for achieving water quality standards, all tributaries to the temperature impaired waters need to be at natural shade levels to prevent excess heat loads to the waters examined.

The State of Idaho relies on riparian shade targets associated with system potential to meet its temperature TMDL obligations under the Clean Water Act. This underscores the importance of incorporating best management practices into the Shade Rule that minimize riparian shade loss for the maintenance and protection of beneficial uses throughout Idaho. Contrary to the importance of maintaining system potential shade, IDL refers to the Shade Effectiveness Study's average shade reduction of less than five percent as justification for proposing a rule that allows for more shade loss than the current rule. However, using "average" shade loss across all sites does not portray the fact that some sites had shade loss above the 10 percent target, and the overarching goal of best management practices in Idaho (as cited above) is to fully protect beneficial uses, not to protect them on average.

It's also important to note that the Shade Effectiveness Study is limited in its applicability by the representativeness of the sites included. The shade study sites were primarily narrow streams with one-sided harvests which is not representative of how shade loss was modeled for the original rule (harvest to rule on both sides of the stream with a clear-cut outside of 75ft SPZ). Therefore, it is not surprising the shade study results are different than the model results. In addition, there were anomalies in the Shade Study field data, such as sites having post-harvest RS levels higher than pre-harvest RS levels, suggesting the harvest resulted in additional trees on the landscape. Similarly, many sites showed post-harvest increases in shade. EPA recommends IDL and FPAC carefully review the Shade Study biases to ensure it provides an adequate basis for lower tree retention requirements as proposed.

5. <u>IDL should reinstate Class II stream protections in the proposed rule.</u>

EPA believes tree retention requirements in Class II SPZs are an important part of protecting water quality in Idaho and ensuring that the Forest Practices Act continues to meet the goals of an approved Best Management Practice as outlined in IDEQ's water quality standard rules governing nonpoint source activities. The 2013-2014 rule revisions removed important protections for Class II streams. The elimination of tree retention requirements for Class II SPZs appears inconsistent with meeting shade targets established in IDEQ's Potential Natural Vegetation (PNV) TMDLs. As referenced in comment 4 above, Idaho's PNV temperature TMDLs are dependent in part upon upstream conditions for achieving water quality standards and require all associated tributaries to be at natural heat loads. EPA is not aware of a scientific rationale supporting IDL's removal of the Class II tree retention requirements in 2013 and recommends reinstating them.

In its Negotiated Rulemaking Summary, IDL indicated they and FPAC have received comments for the past few years regarding best management practices related to streams on forest land in Idaho and that IDL, DEQ and landowners have participated in research associated with Class I and Class II streams, deliberating the results extensively in FPAC and FPAC task force meetings. Despite this work, IDL indicated they and FPAC decided to postpone additional work on Class II issues due to the complexity and workload related to Class I stream rules. Postponing of Class II stream protections is inconsistent with the 2020 Forest Practices Water Quality Audit, which recommends FPAC work on establishing a minimum tree retention requirement for Class II streams. If IDL and FPAC need to postpone work on Class II stream protections, at a minimum, they should reinstate the tree retention requirements for Class II streams that were eliminated without justification in in 2013.

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TEPLY, M., AND D. MCGREER. 2013. Simulating the effects of forest management on stream shade in Central Idaho. *West. J. Appl. For.* 28: 37–45.

TEPLY, M., D. MCGREER, AND K. CEDER. 2014. Using Simulation Models to Develop Riparian Buffer Strip Prescriptions. *J. For.* 112(3): 302-311