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**From:** Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>  
**Sent:** Monday, June 17, 2019 2:04 PM  
**To:** Brian Ellrott - NOAA Federal  
**Cc:** Evan Sawyer - NOAA Federal  
**Subject:** Re: WR TDM Consistency

While I have both of you.....

any idea what mount et al. 2017 is here?

Regardless of the driver of the May increase, keeping flows at Keswick Dam artificially low restricts the river's "natural" physical, biochemical, and ecosystem functions (Yarnell<sup>[NH1]</sup> et al. 2015, Mount et al. 2017<sup>[CM2]</sup>).

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On Mon, Jun 17, 2019 at 1:58 PM Brian Ellrott - NOAA Federal <[brian.ellrott@noaa.gov](mailto:brian.ellrott@noaa.gov)> wrote:  
Yes, use V10 on the server. Thanks Evan!

On Mon, Jun 17, 2019 at 3:50 PM Evan Sawyer - NOAA Federal <[evan.sawyer@noaa.gov](mailto:evan.sawyer@noaa.gov)> wrote:  
Yeah,

I spoke to Cathy and I'm going to calculate the SDs for the Anderson model and then I can make the bolded changes in the I&S. Cathy said that you had sent a version (THE version?) of the I&S to Maria so I'll make the changes to the MASTER on the shared drive but you are still in charge of version control when it comes to adding/merging Maria's comments changes?

Does that work for you Brian?

Evan

On Mon, Jun 17, 2019 at 1:38 PM Brian Ellrott - NOAA Federal <[brian.ellrott@noaa.gov](mailto:brian.ellrott@noaa.gov)> wrote:  
I'm good if you two are.

Can one of you make the changes in the I&S? I'm pretty sure I follow the change, but cutting me out would be safer.

On Mon, Jun 17, 2019 at 3:31 PM Cathy Marcinkevage - NOAA Federal <[cathy.marcinkevage@noaa.gov](mailto:cathy.marcinkevage@noaa.gov)> wrote:

Agreed. I think we go with st dev b/c that's what's in the metrics...which we didn't have time to vet statistically, so they are what they are!

And yes, if you can get those numbers for each tier, that would be really helpful.

Assuming the other green monster is on board.

On Mon, Jun 17, 2019 at 1:27 PM Evan Sawyer - NOAA Federal <[evan.sawyer@noaa.gov](mailto:evan.sawyer@noaa.gov)> wrote:  
Hi Cathy,

I'm fine with the proposed changes. If I had my time machine working I'd suggest we focus on the median, rather than the mean, and then we could use the first and third quartiles rather than the standard deviation.

Do you need me to calculate the standard deviation for the Anderson modeling results?

Evan

On Mon, Jun 17, 2019 at 1:06 PM Cathy Marcinkevage - NOAA Federal <[cathy.marcinkevage@noaa.gov](mailto:cathy.marcinkevage@noaa.gov)> wrote:

### **Background**

Recs Performance Metrics for TDM:

- Tier 1 – Maximum (39%); Average (6%); Median (2%); Minimum (0.4%); Std. Dev (+/-9%)
- Tier 2 - Maximum (46%); Average (15%); Median (9%); Minimum (1%); Std. Dev (+/-16%)
- Tier 3 - Maximum (77%); Average (34%); Median (24%); Minimum (6%); Std. Dev (+/-31%)
- Tier 4 – Appropriate performance metrics will be addressed under “Drought and Dry Year Actions” consistent with the “Governance” section of this Proposed Action

Our Effects Analysis (example for Tier 1):

- Reduced survival probability (mean temperature dependent mortality of 5 percent (Anderson) and 6 percent (Martin); widest range of 25 and 75 percentiles for 2 different models is 0 to 6 percent).

I&S (example for Tier 1, showing the mean):

5% - 6% temperature dependent mortality

ITS (example for Tier 1):

Temperatures higher than 53.5°F would result in reduced survival (mean temperature- dependent mortality of 5 percent [Anderson] and 6 percent [Martin]; widest range of 25 and 75 percentiles for 2 different models is 0 to 6 percent).

Shasta operations remain consistent with performance metrics described in in Section 2.5.2...  
(Performance Metrics)

So you see the mix of things. I propose the following to address this (changes in **bold**):

Recs Performance Metrics for TDM (**nothing to change here**):

- Tier 1 – Maximum (39%); Average (6%); Median (2%); Minimum (0.4%); Std. Dev (+/-9%)
- Tier 2 - Maximum (46%); Average (15%); Median (9%); Minimum (1%); Std. Dev (+/-16%)
- Tier 3 - Maximum (77%); Average (34%); Median (24%); Minimum (6%); Std. Dev (+/-31%)
- Tier 4 – Appropriate performance metrics will be addressed under “Drought and Dry Year Actions” consistent with the “Governance” section of this Proposed Action

Our Effects Analysis (example for Tier 1):

- Reduced survival probability (mean temperature dependent mortality of 5 percent (Anderson) and 6 percent (Martin); **the standard deviations are +/-Y and +/-Z**).

I&S (example for Tier 1, showing the mean):

5% - 6% temperature dependent mortality **with the standard deviations are +/-Y and +/-Z.**

ITS (example for Tier 1):

Temperatures higher than 53.5°F would result in reduced survival (mean temperature- dependent mortality of 5 percent [Anderson] and 6 percent [Martin]; **the standard deviations are +/-Y and +/-Z).**

Shasta operations remain consistent with performance metrics described in **BA Section 4.10.1.3.3 (Upper Sacramento Performance Metrics).**

Whaddya think?

I can make many of these changes if you agree.

Slightly related....I guess we need to make new rows for SR, STH, and GS that reflect the PA revisions, as I did for WR, right?

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**Evan Bing Sawyer,**  
Natural Resource Management Specialist  
NOAA Fisheries West Coast Region  
U.S. Department of Commerce  
Office: (916) 930-3656  
[Evan.Sawyer@noaa.gov](mailto:Evan.Sawyer@noaa.gov)  
[www.westcoast.fisheries.noaa.gov](http://www.westcoast.fisheries.noaa.gov)



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**Brian Ellrott**  
Central Valley Salmonid Recovery Coordinator  
NOAA Fisheries West Coast Region  
U.S. Department of Commerce  
Mobile: 916-955-7628  
Office: 916-930-3612  
[brian.ellrott@noaa.gov](mailto:brian.ellrott@noaa.gov)

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**Evan Bing Sawyer,**  
Natural Resource Management Specialist  
NOAA Fisheries West Coast Region  
U.S. Department of Commerce  
Office: (916) 930-3656  
[Evan.Sawyer@noaa.gov](mailto:Evan.Sawyer@noaa.gov)  
[www.westcoast.fisheries.noaa.gov](http://www.westcoast.fisheries.noaa.gov)



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**Brian Ellrott**

*Central Valley Salmonid Recovery Coordinator*

*NOAA Fisheries West Coast Region*

*U.S. Department of Commerce*

Mobile: 916-955-7628

Office: 916-930-3612

[brian.ellrott@noaa.gov](mailto:brian.ellrott@noaa.gov)