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**From:** Garwin Yip - NOAA Federal <garwin.yip@noaa.gov>  
**Sent:** Friday, December 7, 2018 2:24 PM  
**To:** Eric Danner  
**Cc:** Miles Daniels - NOAA Affiliate; Sarah Gallagher  
**Subject:** Re: Temp-dependent egg survival for 2018

We had a Shasta ROC on LTO meeting on Tuesday, and we were going to use recent data on egg-to-fry (ETF) survival from the 2016-2018 pilot years of operating to cooler water temperatures at CCR as evidence of the effectiveness of changing the temperature and location. We were hoping to get an estimate of ETF before final numbers (official escapement estimate from CDFW and final season total of WR emigration past RBDD) came out.

-Garwin-

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On Tue, Dec 4, 2018 at 3:11 PM Eric Danner - NOAA Federal <[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:  
Hi all,

I am not clear on exactly what the question is. We can calculate two things (1) the temp dependent egg survival, and (2) the total survival (product of the temp dependent and the background survival). The background survival can vary slightly based on the number of female spawners, so when that is not know (forecasting for example) we just use the average background survival. We can then compare the total results when the final RBDD estimate comes in.

Does that help?

Eric

On Tue, Dec 4, 2018 at 1:10 PM Miles Daniels - NOAA Affiliate <[miles.daniels@noaa.gov](mailto:miles.daniels@noaa.gov)> wrote:  
Hi Garwin,

I have not been involved with estimating egg-to-fry survival.

Eric, do you have any thoughts on this? Do we need to know things such as trap efficiency for the year at RBDD to estimate this for 2018?

Thanks,  
Miles

On Tue, Dec 4, 2018 at 12:01 PM Garwin Yip - NOAA Federal <[garwin.yip@noaa.gov](mailto:garwin.yip@noaa.gov)> wrote:  
Thanks!

...and can you also provide total estimate of egg-to-fry survival to RBDD without the final RBDD estimate?

-Garwin-

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On Tue, Dec 4, 2018 at 11:49 AM Miles Daniels - NOAA Affiliate <[miles.daniels@noaa.gov](mailto:miles.daniels@noaa.gov)> wrote:  
Hi Garwin,

We do not have the redd distributions for 2018 yet, but Eric will email Jason Roberts for them. I'll run them once Sara John digitizes them to the RAFT grid and send results. Using the historic redd distributions from 2012-2017, the mean temperature-dependent egg mortality is ~6%, median ~3%, lower estimate ~0.25%, and upper estimate of ~36%.

Thanks,  
Miles

On Tue, Dec 4, 2018 at 11:27 AM Garwin Yip - NOAA Federal <[garwin.yip@noaa.gov](mailto:garwin.yip@noaa.gov)> wrote:  
Miles,

Can you plug in the 2018 winter-run redd distribution and temperatures to come up with an initial temperature-dependent egg survival for the season?

-Garwin-

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*Garwin Yip*

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