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Sent: Wednesday, February 20, 2019 12:54 PM
To: Howard.Brown; Garwin Yip - NOAA Federal; Cathy Marcinkevage; Evan Sawyer - NOAA Affiliate; Sarah Gallagher - NOAA Federal
Cc: Maria Rea
Subject: Anderson 2017
Attachments: Anderson 2017_variable DO needs for WR.pdf

Subject paper attached.

I think Reclamation is likely using "Model II" (beginning on p. 4). Note that on p. 5, it says "Model II only allows mortality at a single critical DOY and age, which are characterized by the lag (4). In reality, temperature-dependent mortality might occur on any day, as is assumed in model I, but studies considered in the discussion suggest mortality occurs in a limited range of days about a mean critical age or over several distinct developmental stages, e.g. egg hatch and maximum total dry mass (MTDM) (Rombough 1994, Rombough 2007)."

I think this means that the Anderson model is completely insensitive to temps outside the critical age window. In the real world, eggs can die outside the critical age window, especially if temps are high outside that window, and the Anderson model may be significantly underestimating survival.

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