From: Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>
Sent: Tuesday, February 5, 2019 5:24 PM
To: Wang, Xiaochun@DWR
Cc: Smith, Tara@DWR; Sandhu, Prabhjot(Nicky)@DWR; Reeves, Ryan@DWR; McLaughlin, William@DWR; Perry, Russell; Pope, Adam; barbara.byrne@noaa.gov
Subject: Re: DWR ePTM

Xiao, thanks so much, that's a great start to getting me up to speed! It answers my most basic question about near-term application, which is for better or worse the driving factor in our tight time line. It would be great to see some more details sometime -- I'll get back to you on that!

Cheers!
Cathy

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On Feb 5, 2019, at 4:29 PM, Wang, Xiaochun@DWR <Xiaochun.Wang@water.ca.gov> wrote:

> Hi Cathy,
>
> Nice to hear from you again! Yes, we have made really good progress on ECO-PTM!
>
> It can be a bit confusing though. ECO-PTM is different from ePTM. The ePTM group and DWR (with the help from USGS, Russ' group) used to work together to develop the same set of swimming behavioral algorithms when Doug Jackson was working on the project. But since Doug left the group, we haven't been coordinating with each other for a while; and we have made some major new development and improvement since then. The mathematical methods to calibrate the two models are also different, so the two models are actually different now. I am not sure about the status of ePTM development. But for ECO-PTM, we have developed/implemented the swimming, routing and survival modules and we compared simulation results with STARS (a statistical model independently developed by Russ' group) under a 26-year historical condition. The simulated results from the two models (ECO-PTM and STARS) agree with each other pretty well. ECO-PTM has a preliminary application to evaluate the benefit of non-physical barriers in Sacramento River (the benefit refers to the increase in juvenile salmon survival rates from Freeport to Chipps Island.)
>
> However, I would still consider this model a work-in-progress. The reasons are 1) The model is only calibrated for Sacramento River but not for SJR (our next step will be to calibrate for SJR if tag data are sufficient). Currently we only simulated the scenarios with fish released to Sac. R. not SJR; 2). The model hasn't been peer-reviewed. Adam and I did presentations about ECO-PTM calibration and application at the last year's science conference, but we haven't publish the paper yet. We are planning to do a formal

code review and test this year and then release the model; 3). The model was calibrated for late fall run salmon, not winter or spring runs.

I'd be more than happy to show you the simulation results and the study that we did for the non-physical barrier project. Just let me know if you would like to have a chat. Russ and Adam can also tell you how they developed the behavioral sub-modules and the calibration for the behavioral parameters.

Thanks.

Xiao

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From: Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>
Sent: Tuesday, February 05, 2019 2:34 PM
To: Wang, Xiaochun@DWR <Xiaochun.Wang@water.ca.gov>
Cc: Smith, Tara@DWR <Tara.Smith@water.ca.gov>
Subject: DWR ePTM

Hi Xiao --

We are getting deep into work to support the consultation for the reinitation of the CVP and SWP. There's been some questions in our shop about the enhanced PTM that you were working on. I honestly have not been keeping tabs on your progress -- could you let me know kind of "where you are" on it? Has the ePTM been used for analysis of any operational scenarios? Is the model at a point where it could be applied, with solid understanding of the results? It's totally okay and understandable if not -- we're trying to be sure we are looking into the various methods that provide the best available science.

Thanks!
Cathy