From: Barbara Byrne - NOAA Federal <barbara.byrne@noaa.gov>
Sent: Tuesday, July 31, 2018 1:21 PM
To: J. Stuart
Subject: Fwd: Science Request

---------- Forwarded message ----------
From: **Harrison, Katrina** <kharrison@usbr.gov>
Date: Tue, Jul 31, 2018 at 12:33 PM
Subject: Fwd: Science Request
To: Barbara Byrne - NOAA Federal <Barbara.byrne@noaa.gov>

Hi Barb -

Is this something you can get folks working on in Garwin's absence? We have been instructed to start working on the long-term ROC on LTO project description and have a draft in the next month or two. It appears that strong scientific support will help actions for fish be included in the project description. We would really appreciate any articles / science you can provide, and if you provide your key take-aways from the studies that is even better. We are thinking:

- Citation
- Topic
- Key Take-aways / Inference (which Reclamation will update to ours)
- Quote / page-number of key takeaway
- Qualifiers / Caveats / Limitations of the study

This is what we are currently trying to pull together for initial actions, but also need to do it for long-term actions concurrently.

Thank you,

Katrina

---------- Forwarded message ----------
From: **Harrison, Katrina** <kharrison@usbr.gov>
Date: Tue, Jul 31, 2018 at 12:17 PM
Subject: Science Request
To: Garwin Yip - NOAA Federal <garwin.yip@noaa.gov>

Hello Garwin -

Can you please send us any and all relevant science to support possible changes to operations for the long-term ROC on LTO? In the long-term ROC on LTO, we are hoping to address operational changes overall as well as build structured decision making (life-cycle) models for all the species so we can direct resources to the limiting factors. In particular, for science, I am thinking of:

- Shasta temp management - papers on temp strategies - holding water cold until you run out versus hot, cold, hot; other strategies; why is 7DADM more relevant than daily averages, do other operators operate to 7DADM in other systems;
- Trinity Requirements - what is NMFS's balance between coho / Winter-run; is more water from the Trinity system needed;
- New Melones RPO - does NMFS have any issues with this, if so please provide scientific support for why;
- American River FMS (without carryover storage targets) - does NMFS have any issues with this, if so please provide scientific support for why;
- Habitat Restoration - what habitat restoration is actually needed for each of the salmonid species at this point, where should we focus our efforts?
- Green Sturgeon: What existing modeling tools are there for the life-cycle of this species? What are their key limitations? How would we go about analyzing factors for them?

Anything else you can provide would be great too.

Thanks,

Katrina Harrison
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