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Sent: Tuesday, April 30, 2019 12:57 PM
To: Sarah Gallagher - NOAA Federal
Subject: restoration in envB

this is all I had in the "restoration" section:

1.1.1.1 Ongoing Habitat Restoration and Monitoring Actions

There have been a number of habitat restoration actions occurring in the action area, many of which continue to benefit listed fish. Ongoing restoration actions are those that require repeated annual implementation at a specific site or watershed (e.g., gravel augmentation below Keswick Dam), or may also include a “program” of specific restoration types, implemented at new sites (e.g., side channel restoration). Several ongoing programs of habitat restoration within the action area (under the Central Valley Project Improvement Act), included in Reclamation’s BA – Table 4-6 (Reclamation 2019), have previously completed ESA section 7 consultation. Therefore, any positive or negative effects associated, are considered part of the environmental baseline. Those from past section 7 consultations, included in Table 4-6, are the Lower Clear Creek Habitat Restoration (NMFS 2014), Upper Sacramento River Restoration (NMFS 2015), and Lower American River Restoration (NMFS 2015). All of these programs have increased spawning and rearing habitat for listed salmonids, and are expected to continue to benefit salmonids into the future. Table 4-6 of the BA, additionally included what Reclamation considers “conservation measures” – which are actions that minimize or mitigate effects of CVP/SWP long-term operations. Any effects from one-time or ongoing actions (conservation measures) that have been included in previous section 7 consultations or are completed, would be considered part of the environmental baseline for this Opinion.

Additionally, the NOAA Restoration Center’s Program to Facilitate Restoration Projects in the Central Valley (NMFS 2018), is expected to continue making improvements to aquatic and/or riparian habitat for listed fish.

Continued monitoring and research efforts in the action area, provide important information on listed anadromous fish. This includes monitoring environmental conditions during action implementation (e.g., turbidity or temperature), monitoring fish presence, tagging fish for tracking distribution and survival, monitoring levels of impacts to fish and/or habitat, and much more. Any monitoring and research that has been completed in the past or is a continuing action, would have been consulted on through ESA section 7, section 4(d), or section 10, and would therefore be considered as part of the environmental baseline.

[\[NAS\]](#)The approach to this whole section on restoration and monitoring is still being discussed (how we bin into EnvB vs effects, etc)

Here is the blurb on the RBDD so far:

Gate operations at the Red Bluff Diversion Dam (RBDD; rkm 391, completed in 1964) created a migration barrier during a critical time for mature adults; operations limited access to spawning habitat for migrating spawning-capable adult green sturgeon (Poytress et al. 2015). In 2013, the RBDD was decommissioned, which permanently lifted the gates and permitted volitional passage for sDPS green sturgeon during all months of river

presence (NMFS 2018). This action has had a major beneficial impact on spawning distribution for green sturgeon and possibly aided in population recovery (NMFS 2018).

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