From: Gard, Mark <mark\_gard@fws.gov>
Sent: Tuesday, April 16, 2019 10:48 AM
To: Sarah Gallagher - NOAA Federal

**Subject:** Re: [EXTERNAL] Another WUA question for you

Resending this as I got a message it didn't go through.

Mark Gard Ph.D., PE 40701
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On Mon, Apr 8, 2019 at 4:43 PM Mark Gard < mark gard@fws.gov > wrote: Mike Berry would know all of that.

Sent from my iPhone

On Apr 8, 2019, at 4:33 PM, Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov> wrote:

Thanks Mark. I am guessing the side channels were designed for the minimum base flows of 3250 cfs.

## Sarah Gallagher | Fish Biologist

NOAA Fisheries | West Coast Region U.S. Department of Commerce 650 Capitol Mall, Suite 5-100, Sacramento, CA 95814 916-930-3712 | Sarah.Gallagher@noaa.gov

On Mon, Apr 8, 2019 at 4:14 PM Mark Gard < mark gard@fws.gov > wrote:

No - could probably do it on area of gravel added times average combined suitability. I would be surprised if habitat is limiting for anything but fall-run though.

Sent from my iPhone

On Apr 8, 2019, at 4:05 PM, Sarah Gallagher - NOAA Federal <<u>sarah.gallagher@noaa.gov</u>> wrote:

Hi again Mark,

Have you ever updated the WUA curves for the upper Sacramento River since all of the Restoration and gravel additions? If not, how would restoration factor in?

Thanks again for your help.

Sarah Gallagher | Fish Biologist

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