From: Barbara Byrne - NOAA Federal <barbara.byrne@noaa.gov>

**Sent:** Thursday, May 30, 2019 5:42 AM

To: J. Stuart - NOAA Federal
Cc: Garwin Yip - NOAA Federal

**Subject:** Re: What does "population" mean?

For Delta, the entire CV annual cohort is exposed each year, but I would still say that just one of three cohorts is exposed to Delta ops in a given year. So, all cohorts (including those in the ocean) had a Delta ops exposure, but in just one of three years of their lifetime (well, suppose two if you count the returning adults).

On Thu, May 30, 2019 at 5:38 AM J. Stuart - NOAA Federal < j.stuart@noaa.gov > wrote:

That matches my recollection, also for ongoing activities like exports, the fraction of the population exposed each year, would also represent the fraction of the entire population exposed as the action is ongoing, and we expect the same exposure each year. Thoughts?

On Thu, May 30, 2019 at 5:34 AM Barbara Byrne - NOAA Federal < barbara.byrne@noaa.gov > wrote: I can make that clarification for the population context. Note that for my I&S tables, at least (and I think for everyone's, since I recall we agreed to this approach at a ROC meeting), the "population" in "proportion of pop exposed" = annual cohort in that specific watershed.

On Thu, May 30, 2019 at 3:16 AM Garwin Yip - NOAA Federal < garwin.yip@noaa.gov > wrote: I was talking to Brian this afternoon about one of Reclamation's comments on the WR I&S section. Specifically population is typically used for the entire species, so for WR, that would be the combination of 3 cohorts. So, when we say that a PA component would affect 100% of the population, it should be 100% of each cohort or life stage.

That got me thinking about the population context that we use for the course screening of loss at the pumps. We should be explicit in the context that we are using, and to clarify that the population of juveniles that we are using (e.g., Nobriga and Cadret) are indeed from a single cohort.

#### -Garwin-

Garwin Yip

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