From: Ellis, Gregg <Gregg.Ellis@icf.com>
Sent: Wednesday, April 24, 2019 9:33 AM
To: Cathy Marcinkevage - NOAA Federal; Steve Zeug
Cc: barbara.byrne@noaa.gov; Greenwood, Marin; Pinero, Janice; Benjamin Nelson (bcnelson@usbr.gov)
Subject: RE: salvage density model question

Hello Cathy and Barb, Marin (cc'd) provides the following response. Please let us know if additional questions.

Thanks, Gregg

Winter-run uses a normalization based on juvenile abundance, whereas the other runs do not. The rationale for this, which came about as a result of discussions with NMFS (Dave Swank and others) and other staff working on California WaterFix, is provided on p.5.D-3 of the Appendix 5.D of the California WaterFix BA:

5.D.1.1.2.1.2 Normalization to Population Size

Winter-run Chinook salmon salvage and loss data for analysis were normalized, by measures of annual juvenile population abundance in the year of entrainment. This step aimed to adjust the salvage and loss to account for the abundance of the population (e.g., a relatively high number of fish would be expected to be entrained in a year of relatively high abundance). Normalization was undertaken by multiplying the raw monthly salvage or loss in a given month by a factor to account for the relative size of the population in that year compared to the average population size over the years from which salvage or loss data were available. The factor was the average population size in the years from which salvage data were available (1996–2009) divided by the juvenile population size appropriate to the year of salvage. Winter-run Chinook salmon estimates were normalized by the juvenile production estimate (National Marine Fisheries Service 2009). No normalization was undertaken for spring-run Chinook salmon, fall-/late fall-run Chinook salmon, steelhead, or green sturgeon because there are no suitable indices of juvenile annual abundance for these species.

From: Cathy Marcinkevage - NOAA Federal [mailto:cathy.marcinkevage@noaa.gov]
Sent: Wednesday, April 24, 2019 8:55 AM
To: Steve Zeug <stevez@fishsciences.net>
Cc: barbara.byrne@noaa.gov; Ellis, Gregg <Gregg.Ellis@icf.com>
Subject: Fwd: salvage density model question

Hi Steve --

Please see the question that Barb forwarded to me, below. Can you answer this for us?

Thanks!
Cathy

Cathy Marcinkevage
California Central Valley Office
NOAA Fisheries West Coast Region
U.S. Department of Commerce
Office: (916) 930-5648
Cell: (562) 537-8734

cathy.marcinkevage@noaa.gov

Begin forwarded message:

> **From:** Barbara Byrne - NOAA Federal <barbara.byrne@noaa.gov>
> **Date:** April 23, 2019 at 5:16:06 PM PDT
>
> In the Salvage Density analysis file, the fall-run, late fall-run, and spring-run workbooks have "nonnormalized" in the filename, while the winter-run workbook says "normalized".
>
> There seems to be escapement data in all files, but haven't chased down all the formulas to try to figure out what is being used or not. **Do either of you know whether the annual summaries by water year type (see, e.g. the table in cells N30:T38 on the "W Tables" tab of the winter-run file) are different for winter-run than for the other Chinook runs?**
>
> --
>
> **Barb Byrne**
> Fish Biologist
> *NOAA Fisheries West Coast Region*
> *U.S. Department of Commerce*
> Office: 916-930-5612
> barbara.byrne@noaa.gov
> *California Central Valley Office*
> *650 Capitol Mall, Suite 5-100*
> *Sacramento, CA 95814*
>
> 
>
> **Find us online**
> www.westcoast.fisheries.noaa.gov
>