

Description of calculation of estimated 'Idaho Fish' for Tribal consumption

I used the tribal FFQ data to estimate the fraction of tribal group 2 fish that is Idaho fish. Rather than start with Group 2 and subtract consumption we do not include away to get Idaho Fish, an easier path appeared to be building up an estimated Idaho Fish group equivalent from tribal fish groups 3, 4, and 5, each suitably adjusted by subtraction; subtracting Chinook, Coho, and other non-Idaho salmon from their Group 3, Tilapia from Group 5, and leaving group 4 (trout) as is.

At first I was unsure how to handle the Event Chinook and Steelhead, which lumps the two species. I ultimately decided to deduct a prorated portion from Group 3. I did this based on fraction of Chinook each respondent reported, substituting the mean fraction for those cases where a fraction could not be calculated due to division by zero.

With the two groups - Tribal Group 2 and an estimated Idaho Fish group for Tribal consumption - I created a ratio; basically saying what fraction of Group 2 is Idaho fish. That fraction was then used as a multiplier on the NCI results. Note that I could not use the NCI results directly as I did not have those, furthermore they do not provide the same level of detail, i.e. 7 fish groups and by species consumption rates.

Here is what I did:

I created a new calculated variable named 'Aprx_Idaho_Fish_GPD' (Column M) = [FFQ_GROUP3_GPD - (Fraction_Sal+Stlhd=Chink*FFQ_EVENT_SALMON_STEELHEAD_GPD) - FFQ_NONEVENT_SALMON_CHINOOK_GPD - FFQ_NONEVENT_SALMON_COHO_GPD - FFQ_NONEVENT_SALMON_OTHER_GPD] + FFQ_GROUP4_GPD + [FFQ_GROUP5_GPD - FFQ_NONEVENT_FRESH_TILAPIA_GPD]

Next I created a weighted version of this new variable (Aprx_ID_Fish_Weighted, column N) and FFQ_GROUP2_GPD (Group_2_Weighted, column K), per instructions from Lon, email excerpt inserted below.

From: Kissinger, Lon [<mailto:Kissinger.Lon@epa.gov>]
Sent: Monday, July 20, 2015 5:36 PM
To: Don Essig; Soscia, Marylou
Cc: jboese@rossstrategic.com; Nayak Polissar
Subject: RE: Data Release and Draft and Final Heritage Reports for Draft Tribal Fish Consumption Survey for ID DEQ

Hi Don,

Weights are necessary to utilize individual results to compute summary statistics. For example, to get an average for any aggregation of species:

- 1) For each individual, sum the consumption of the species of interest.
- 2) Multiply the summed consumption rate by the respondent's statistical weight.
- 3) Sum term 2 over the total number of respondents.
- 4) Divide term 3 by the summed weight.

Step 4 is not necessary if the weights have been normalized.

Nayak, if I've missed the boat here, let me know.

Lon

Then I summed the weighted variables (Columns K and N) and divided the sums of the weighted variables by the sum of SURVEY_WT1 (column F), per Lon's instructions.

Finally, I divided the weight adjusted results (cell N229 by K229 in the SBT spreadsheet) to generate a percent of Tribal Group 2 fish that I estimate from the data is Idaho fish. The results are 30.1 % for SBT and 24.2% for NPT.

Applying these fractions to the Tribal NCI results then gives us an estimated Idaho Fish consumption rate, e.g. the NPT mean of 66.5 g/day of their Group 2 fish times 0.242 = 16.1 g/day Idaho Fish.