## NMFS, PTAGIS, SNKTRP, CJS, and SURPH

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Being a full account of the survival estimates for hatchery and wild spring/summer chinook salmon from the Snake River trap to Lower Granite Dam that appear in the NOAA Fisheries draft 2003 survival report, and how the estimates got there. This is essentially a review of my "Survival 101" presentation at the 2000 PIT-tag workshop, including steps used to retrieve data from PTAGIS, to convert to input files for survival estimation, and to calculate Cormack-Jolly-Seber (Single-Release) estimates using the University of Washington's "SURPH" software. I will demonstrate the use of SURPH 2.2 to test for equality of parameters of hatchery and wild fish.