

CALCULATION OF DELTA SMELT TAKE AT SWP AND CVP DELTA PUMPING PLANTS

Delta smelt take, under the Fish and Wildlife Service's February 1994 Biological Opinion, is based on the calculated, combined 14-day running average salvage at the State Water Project's Banks and the Central Valley Project's Tracy pumping plants. The Banks salvage is calculated in the following manner:

- Every two hours, Department of Fish and Game staff samples the fish screened at the Skinner Fish Facility by diverting them into a counting tank.
- Sampling time for each 2-hour period varies depending on the number of fish present, from a minute when there are lots of fish; to the full 2 hours if very few fish are present. They usually try to sample at least 10 minutes of each 2-hour period.
- Sampled fish are identified, counted and measured.
- The total number of delta smelt salvaged at Skinner during each 2-hour period is calculated by multiplying the number sampled by an expansion factor based on the length of the sampling period. For example, if 20 minutes of the 2 hours (120 minutes) are sampled, the expansion factor is 6 (120/20).
- The total Skinner salvage for the day is calculated by adding calculated salvage for all the individual 2-hour sampling periods during that day.
- The Bureau of Reclamation uses a similar procedure to estimate salvage at its Tracy Pumping Plant. Reclamation staff does the counting and routinely samples 10 minutes of every two hours.
- The calculated salvage from the two facilities are added to give the combined daily salvage. The 14-day running average is determined by averaging the combined daily salvage over the prior 14 days.

Smelt vs. Winter-Run Count

Note that the smelt take provision is based on calculated salvage, while the winter-run salmon take is based on calculated loss. There is a big difference. To calculate losses, the winter Chinook salvage estimates are expanded further, based on estimated predation losses prior to screening, screening efficiency and handling and trucking losses. Because predation and screening efficiency for the smelt have never been estimated, the smelt salvage is in effect used as an index of smelt loss to determine take.