

Delta Hydrologic Trends

Kate Le, DWR

Data presented here are from the DAYFLOW database for water years 1956-1994 and from the DWR Operations and Maintenance database for water years 1995 and 1996.

Figure 1 contains plots of Delta inflow, Net Delta Outflow Index, and SWP/CVP export pumping rates for October 1, 1995, to December 31, 1996. During this period, the Net Delta Outflow Index averaged about 35,000 cfs, with a peak at 211,000 cfs on February 24, 1996. The peak outflow resulted from precipitation and high Delta inflow. Due to carryover from prior months and intense precipitation the last half of December 1996, the December 31, 1996 Outflow Index peaked at 188,800 cfs, which was the second highest outflow for 1996.

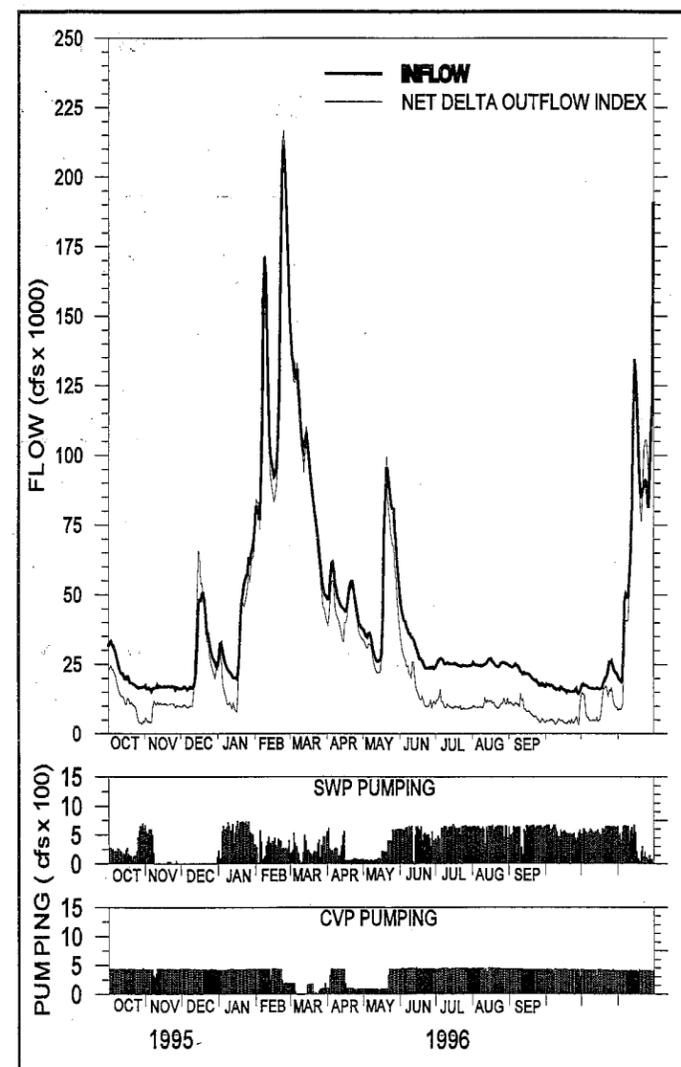


Figure 1
DELTA INFLOW, NET DELTA OUTFLOW INDEX, AND SWP/CVP EXPORT PUMPING, OCTOBER-DECEMBER 1996

Average export rates during this period were 3,850 cfs for the SWP and 3,720 cfs for the CVP. All CVP export curtailment during 1996 was to facilitate maintenance at the Tracy Fish Facility; SWP export ceased during November and December 1995 for aqueduct maintenance. In 1996, export at Banks Pumping Plant was stopped on February 2 to clean fish screens at Skinner Fish Facility and on June 12 and September 11 for herbicide related work to control vegetation in the California Aqueduct.

Figure 2 contains plots of annual Delta inflow, outflow, and export volumes for water years 1956-1996. During 1996, annual volumes entering the Delta were about 23 million acre-feet from the Sacramento River, 3.9 MAF from the San Joaquin River, and 3.4 MAF from the Yolo Bypass.

Figure 3 contains volume/frequency plots for flows and exports shown in Figure 2. In comparing 1996 to the other 40 years, 85% of the years had lower Sacramento River flow; 73% had lower San Joaquin River flow; and 63% had lower Yolo Bypass flow. During water year 1996, total Delta inflow was about 32 MAF, and Net Delta Outflow Index was about 26 MAF. Figure 3 shows that 71% of the years had lower total Delta inflow than in 1996, and 66% of the years had lower Net Delta Outflow Index than in 1996. In 1996, annual export was about 2.6 MAF for the SWP and 2.6 MAF for the CVP (excluding Contra Costa Canal export). Relative to 1996, 85% of the years had less SWP export, 85% had less Central Valley Project export, and 88% had less combined CVP/SWP exports.

Figure 4 contains multiple bar and frequency plots of mean percent of inflow diverted for specified periods in 1956-1996. As defined in the May 1995 *Draft Water Quality Control Plan*, the percent of inflow diverted is equal to the sum of SWP and CVP exports divided by delta inflow. During water year 1996, the mean percent of inflow diverted was: 16% October-September, 30% October-January, 12% February-June, and 44% July-September.

Figure 5 shows that, relative to water year 1996, 70% of the years had lower mean percent of inflow diverted for October-September, 73% had lower values for October-January, 54% had lower values for February-June, and 75% had lower values for July-September.

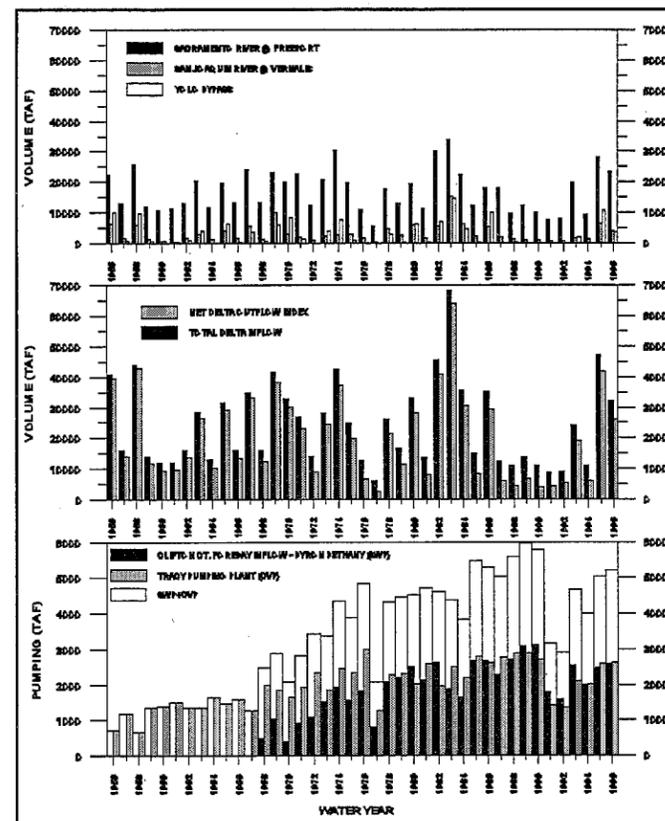


Figure 2
DELTA INFLOW, OUTFLOW, AND EXPORTS, WATER YEARS 1956-1996

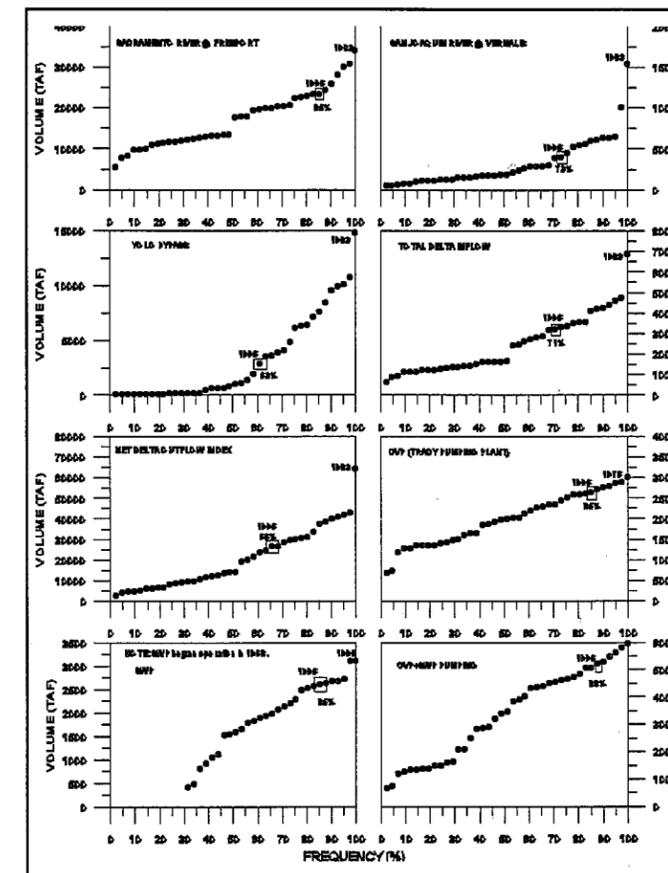


Figure 3
VOLUME AND PROBABILITY OF NONEXCEEDANCE OF FLOWS AND EXPORTS, 1956-1996

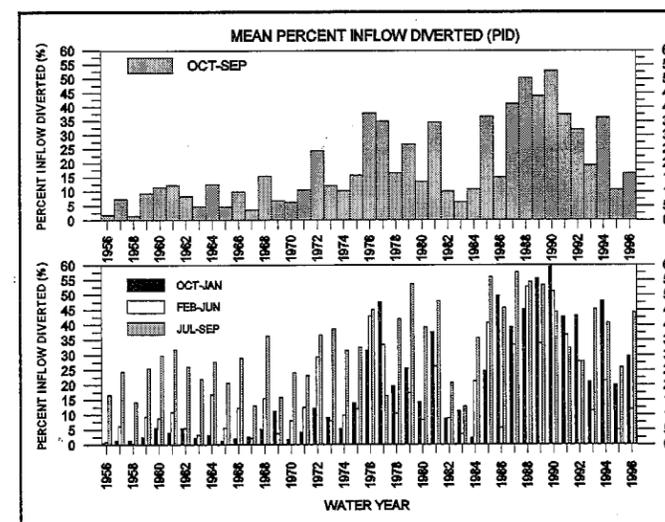


Figure 4
MEAN PERCENT OF INFLOW DIVERTED FOR SPECIFIC PERIODS, 1956-1996

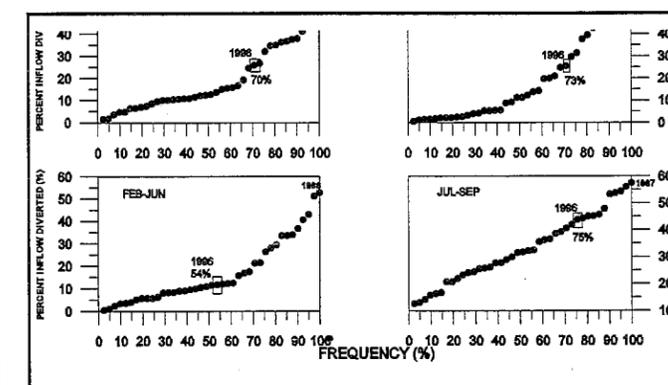


Figure 5
PERCENT OF INFLOW DIVERTED, 1956-1996

The annual update of DAYFLOW hydrologic data for the Sacramento-San Joaquin estuary is now available for the 1996 water year (October 1995 through September 1996). Copies of the report — either hard copy or electronic format — can be obtained by contacting Sheila Greene (916/227-7538).