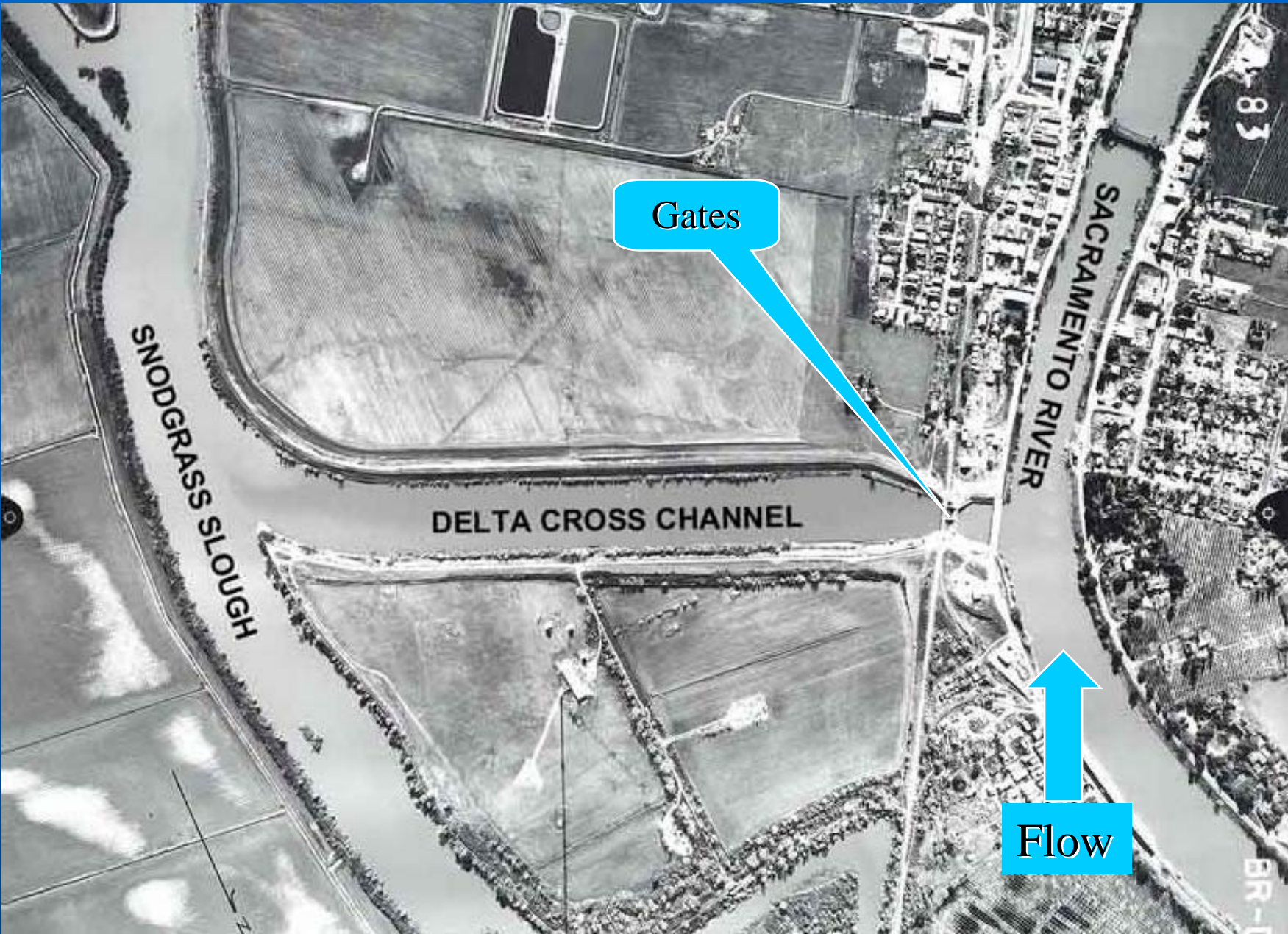


Delta Cross Channel Operations- The Four Seasons

Central Valley Operations--Bureau of Reclamation
MP Region—Sacramento, CA



Gates

Flow

Delta Cross Channel

Location	From the Sacramento River near Walnut Grove, California to Snodgrass Slough
Construction period	1950-1951
Length	1.2 mi
Capacity	3,500 cfs
Typical section - initial reach	
Bottom width	210 ft
Side slopes	3:1
Water depth	26 ft

History of DCC

- **Early Alternatives to DCC were “Peripheral Canal”- like variants**
- **Location and Sizing Alternatives studied using Electrical Analog Computers (1940’s)**
- **60’x30’ Radial Gates are Reclamation’s Largest**

Evolution of DCC Operations Guidelines

- **USBR SOP (1968)**
- **D-1485 (1978)**
- **NOAA Fisheries Biological Opinion
1992, 1993**
- **Bay Delta WQCP (1995)**
- **D-1641 (1999)**

Reclamation SOP for DCC

- **Operations Instruction by Reclamation CVO**
- **Gates O&M by San Luis Delta Mendota Water Authority (SLDMWA)**
- **Two Gates normally operated together**
- **Close Gates if Sac River > 20-25 kcfs (flood/facility scour)**
- **Fully Open Gates to Elev +15' (above bottom elev of RR bridge)**

Reasons for Closures of DCC

- **Flood Control/Facility Scour
(Sustained >20-25 kcfs in Sac. R.)**
- **Salinity Control per WQCP– Western
Delta Ag. Sac. R. at Emmaton.**
- **Fish Protection per Delta WQCP**
- **Sac. R. flow at Rio Vista WQCP**

Reasons for Opening the DCC

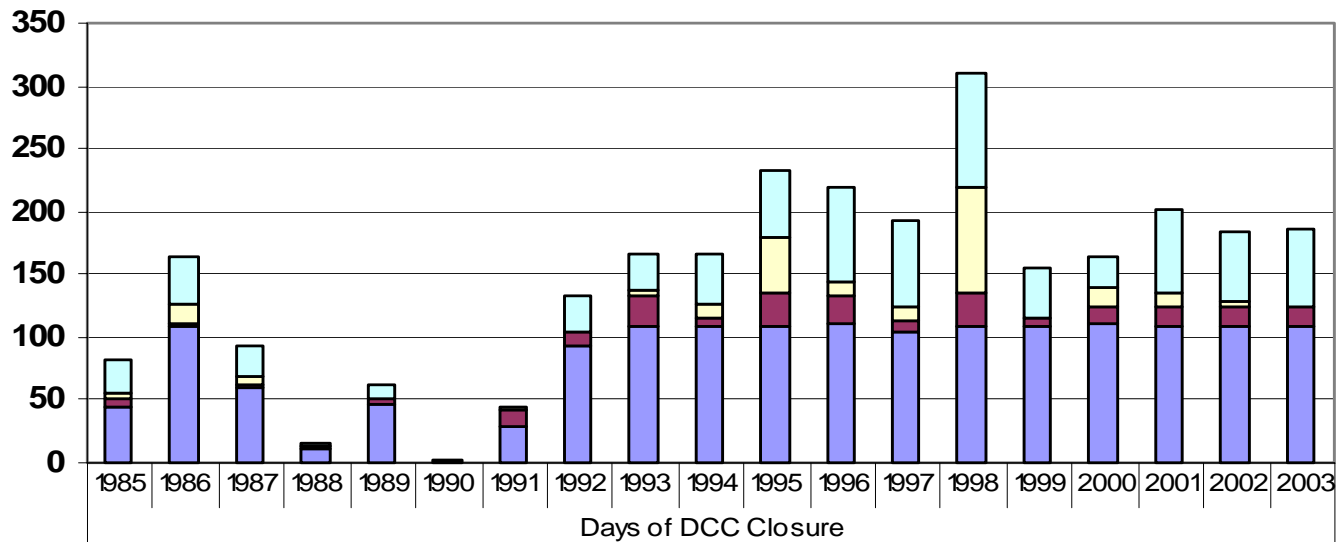
- **Short-cut for Fresh Water Flow to Interior/Southern Delta for Export**
- **Interior Delta Salinity management for Export Water Supply.**
- **Salinity Control per WQCP - M&I Chlorides and Western Delta Ag. San Joaquin R. at Jersey Point.**
- **Recreational Boating Use**

Four Seasons of DCC Operation

- **November 1- January 31**
- **February 1- May 20**
- **May 21 – June 15**
- **June 16 – October 31**

Days of DCC Closure

■ Feb. 1 - May 20
 ■ May 21 - Jun. 15
 ■ Jun. 16 - Oct. 31
 ■ Nov.1 - Jan. 31



■ Nov.1- Jan. 31	25	37	25	2	11	0	0	29	29	40	52	76	68	92	39	23	67	55	61
■ Jun. 16 - Oct. 31	4	16	8	3	2	0	2	0	5	10	45	11	11	84	0	17	11	3	0
■ May 21- Jun. 15	7	2	2	0	4	0	14	11	23	7	26	22	8	26	7	13	15	16	15
■ Feb. 1- May 20	45	109	59	10	46	2	29	94	109	109	109	110	105	109	109	110	109	109	109

February 1 – May 20

- **Gates closed for protection of Sac. River salmon during this 109 day period**
- **Closure period includes Feb. 1 – Apr. 30 mandated closure per NOAA Fisheries Winter Run Biological Opinion.**

May 21- June 15

- **Gates to be closed for 14 of these 26 days. Reclamation decides timing after consultation in CALFED Ops (DAT/WOMT information/decision process).**
- **Generally, gates are time managed to be opened for Memorial Day Weekend.**

June 16 – October 31

- **Gates will be default open during this 138 day period, unless closure required because of high river flows, or WQCP standards for Emmaton salinity, or Rio Vista min. flow.**

November 1- January 31

- **Gates may be closed up to 45 days to protect out-migrant fish, in response to Real-time Monitoring per terms of Salmon Protection Process and NOAA Fisheries Biological Opinion.**
- **Use of DAT and WOMT information/decision process.**

O&M Issues for Frequent DCC Changes

- **DCC Gates are not automated nor remotely operated.**
- **1.5 hour drive to DCC from SLDMWA and general scheduling of Dispatch Operator**
- **Increased Frequency of Operations creates Greater Staffing and Long-term Maintenance Commitment**
- **Notification to Recreational Boating and Public Safety Interests**

O&M Issues – Oct. 2002

Gate Malfunction



Another Aerial View of DCC

