EASTERN SAN JOAQUIN COUNTY GROUNDWATER AUTHORITY

Overview of

South Delta Water Agency

December 10, 2025

John Herrick Esq., Counsel & Manager

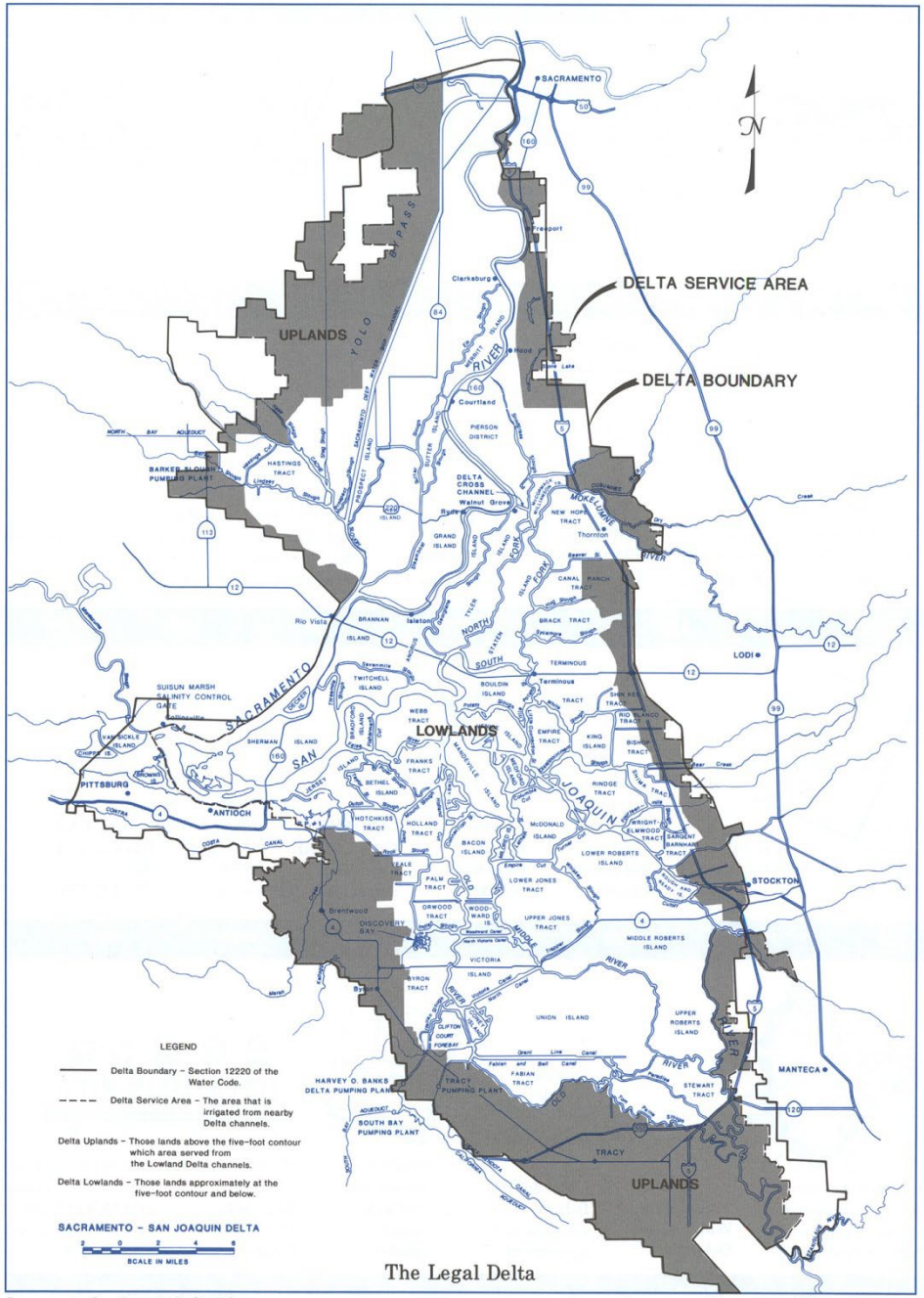
South Delta Water Agency

- JUST TO MAKE EVERYONE FEEL
- A LITTLE BETTER TODAY …

- I’M RETIRING in 21 days!

a list of people that can kiss my ass

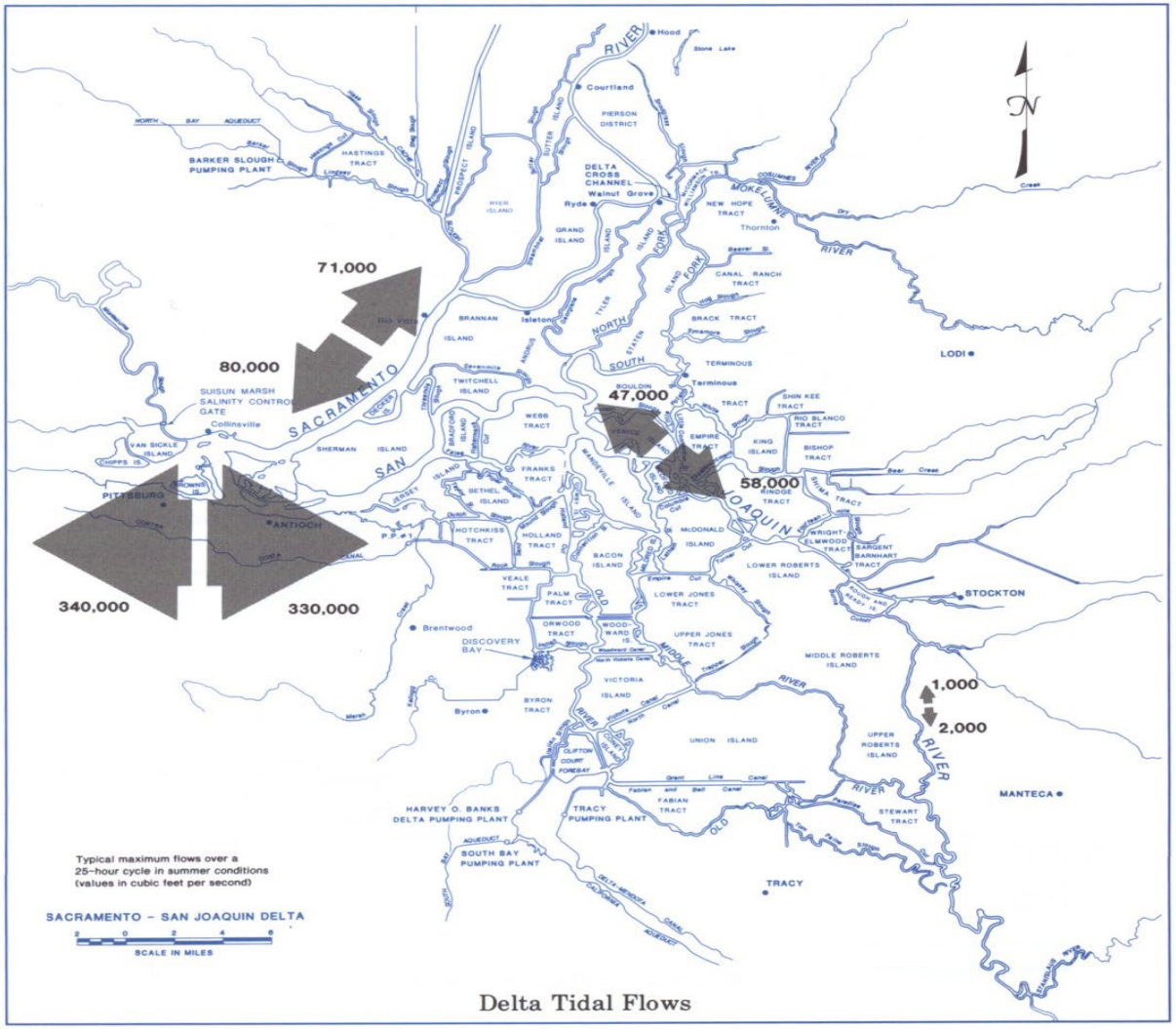
INTRODUCTION and BACKGROUND



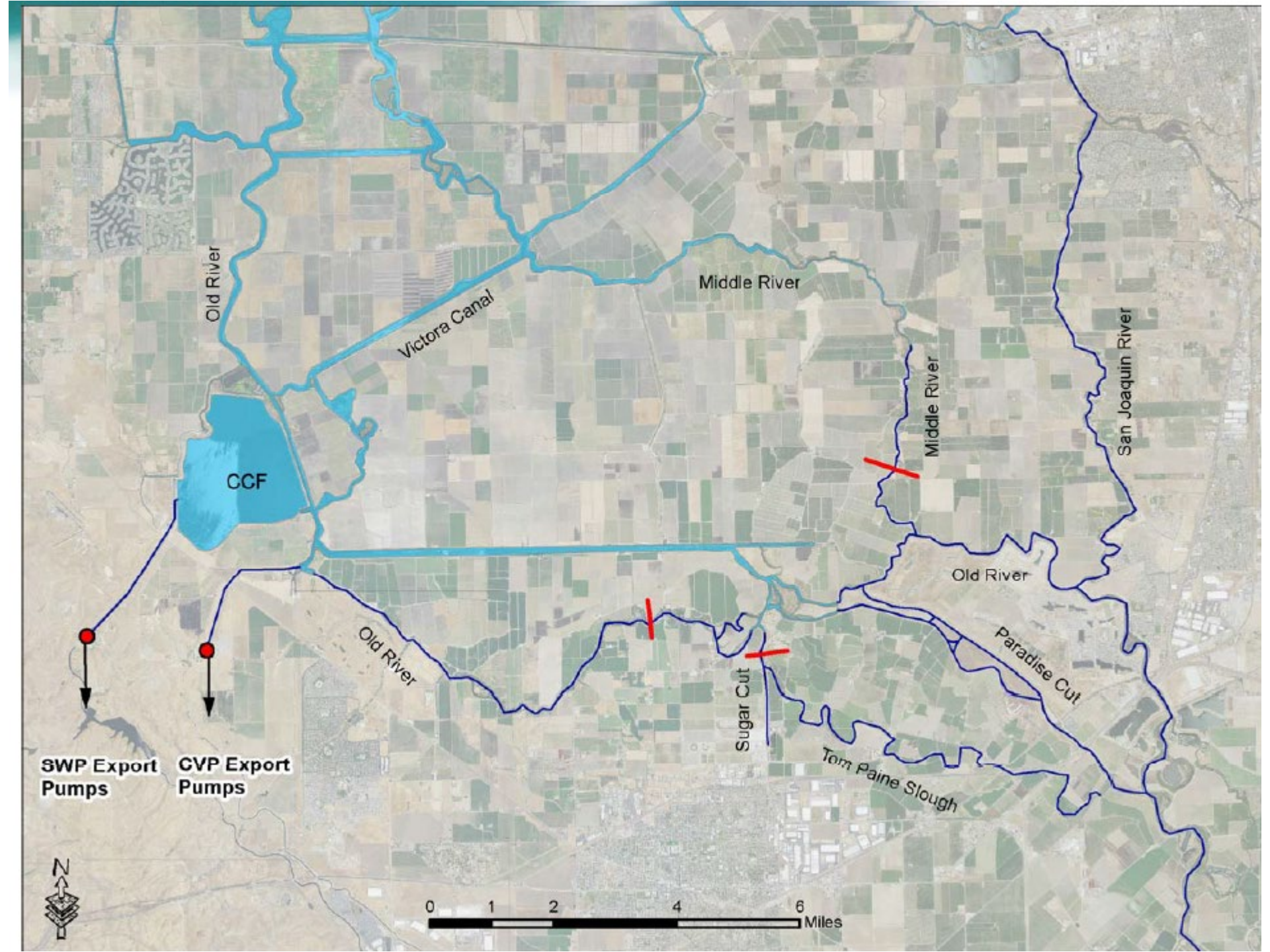
The Legal Delta

Delta Tidal Flows and Levels

The Sacramento-San Joaquin Delta is at sea level. Water levels vary greatly during each tidal cycle, from less than a foot on the San Joaquin River near Interstate 5 to more than five feet near Pittsburg. During the tidal cycle, flows can also vary in direction and amount. For example and as shown on the map below, the flow near Pittsburg during a typical summer tidal cycle can vary from 330,000 cfs upstream to 340,000 cfs downstream. The "net" summer Delta outflow is a very small amount of the total water movement, generally 5,000 to 10,000 cfs.



Delta Tidal Flows


Old River
Victora Canal
Middle River
Middle River
San Joaquin River
CCF
Old River
Old River
Sugar Cut
Paradise Cut
Tom Paine Slough
SWP Export Pumps
CVP Export Pumps
N
0 1 2 4 6
Miles

The operation of the Central Valley project decreases San Joaquin River flows, adds concentrated salts to the River and causes reverse flows in Delta channels which created null zones where salts concentrate.

SALTS

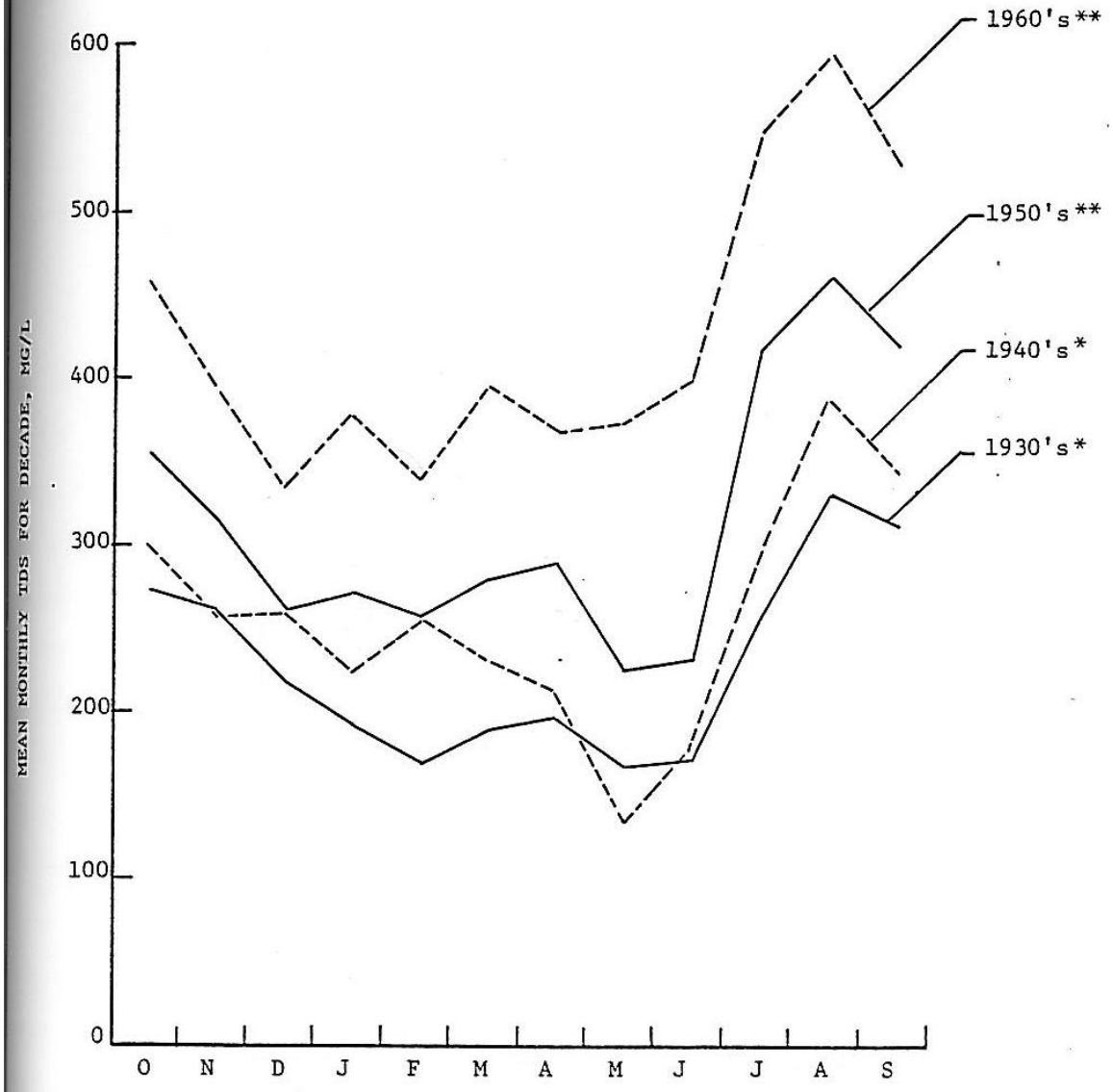


Figure VI-25 MEAN MONTHLY TDS AT VERNALIS BY DECADES
1930-1969
*Based on Mossdale chloride data
**Based on actual observations

Chip Salmon: Salt damage to grapes, beans and walnuts; decreased production;

Rudy Mussi: Salt problems require additional expenditures to partially mitigate;

Richard Marchini: Salt damages to walnuts causing decreased crop yields;

Jack Alvarez: Salt in applied water causes decreased crop yields in cannery tomatoes and lima beans;

Mark Bacchetti: Salt damages to plants/crops and increased soil salinity;

In 2005 the water quality objectives for agricultural beneficial uses in the southern Delta became fully implemented. Since that time there have been thousands of daily violations.

The State Water Resources Control Board's response? It conducted two Cease and Desist hearings, each of which required the USBR and DWR to "Obviate future threats" to the objectives and set a deadline for the projects to produce a plan to meet the objectives. Both deadlines came and went without any plan or any consequence.

As violations continues the SWRCB decided to address the violations by changing the objectives by relaxing them. To support the changes the SWRCB staff used incorrect and irrelevant data to calculate that no problem existed.

The SWRCB has in fact done nothing to protect southern Delta farmers from the impacts of the increased salinity due to project operations. NOTHING.

DECREASED FLOWS

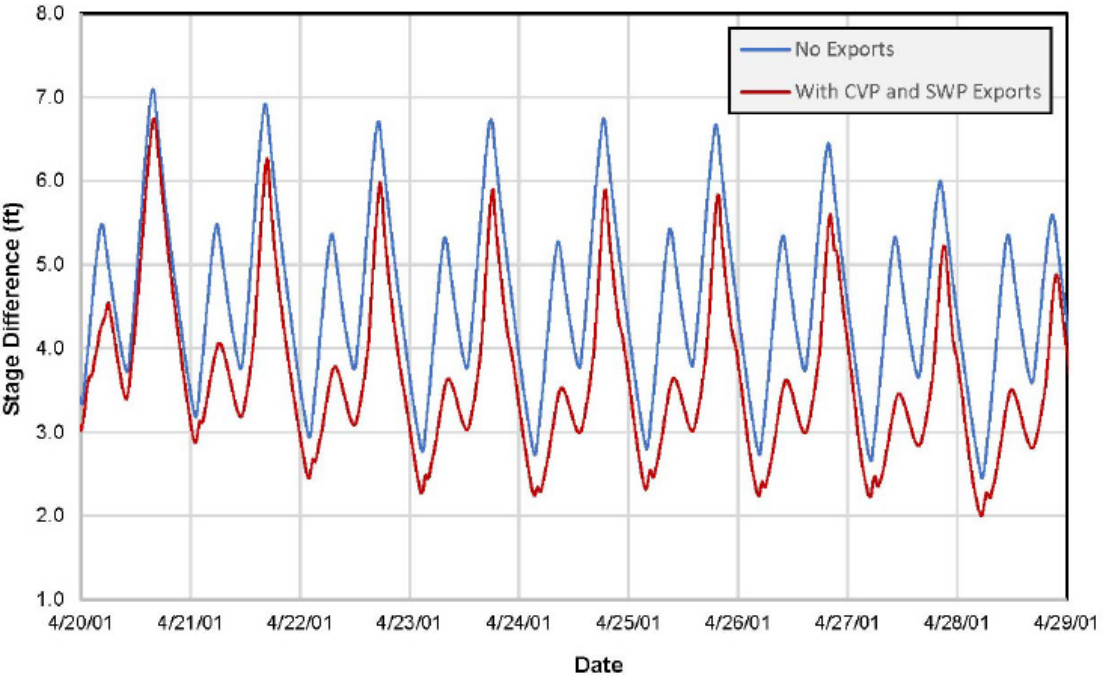
TABLE V-18 (1980)

SUMMARY OF REDUCTIONS IN RUNOFF OF SAN JOAQUIN RIVER AT VERNALIS FROM PRE-CVP TO POST-CVP

YEAR TYPE & PERIOD	EFFECT OF ALL POST-CVP UPSTREAM DEVELOPMENT ON RUNOFF AT VERNALIS		EFFECT OF CVP ON RUNOFF AT VERNALIS		
	Reduction in Runoff acre-feet[1]	Post CVP Reduction as Percent of Pre-CVP Actual Runoff	Reduction in Runoff[1] acre-feet	Reduction at Vernalis as Percent of Pre-CVP Flow	Reduction at Vernalis as Percent of Post CVP Flow
DRY					
April-Sept	417,000	68[2]	6,000[3]	1.4	3.0
Full Year	519,000	45	128,000[3]	11	13
BELOW NORMAL					
April-Sept	1,064,000	60[2]	386,000	22[2]	55
Full Year	1,219,000	44[2]	543,000	20[2]	35
ABOVE NORMAL					
April-Sept	1,732,000	57	440,000	15	40
Full Year	1,400,000	28	768,000	15	25
WET					
April-Sept	1,000,000	19	554,000	15	10
Full Year	1,168,000	13	771,000	9	12
AVERAGE OF ALL YEARS					
April-Sept	1,053,000	40	345,000	13	24
Full Year	1,076,000	24	553,000	12	19

1. From Tables 2, 4, 6, 8, 10, 12, 14, 16
2. Pre-CVP "actual" is assumed to be post-CVP actual plus pre-CVP to post-CVP loss per Tables 4, 6, and 10
3. Corrected for difference in pre-CVP and post-CVP unimpaired flow

EFFECTS OF EXPORT PUMPING

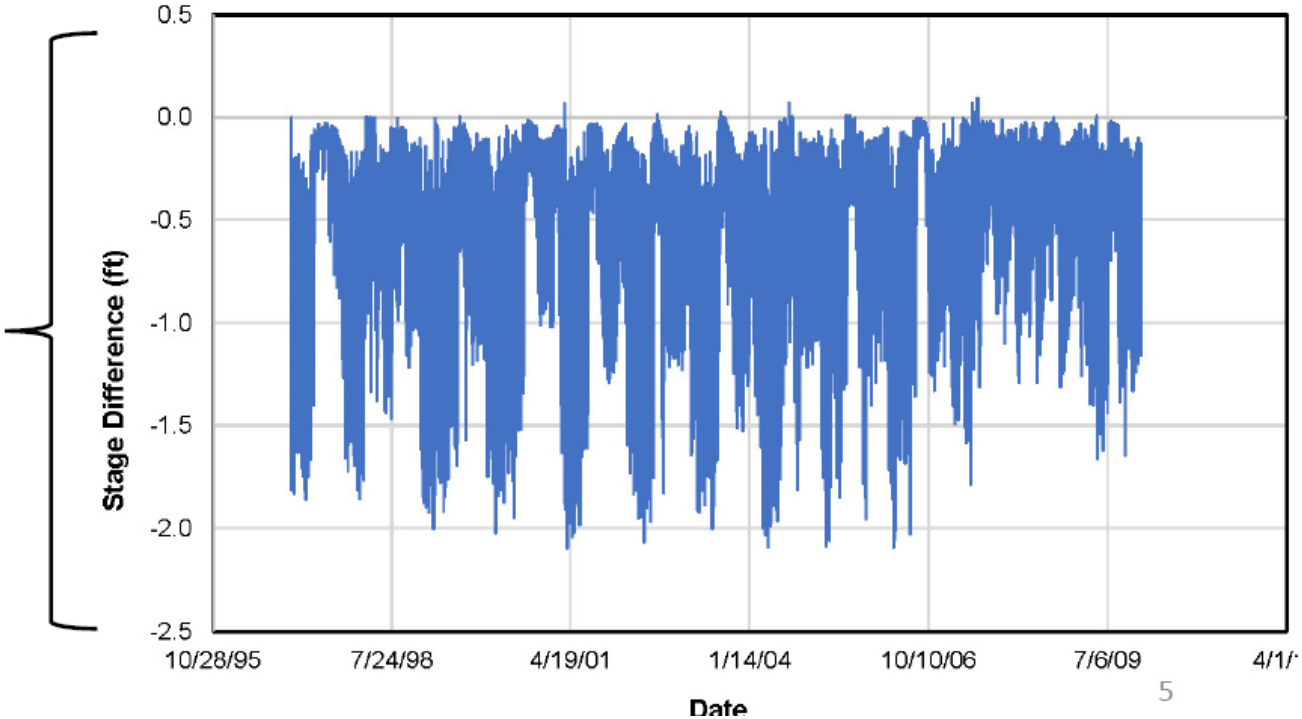


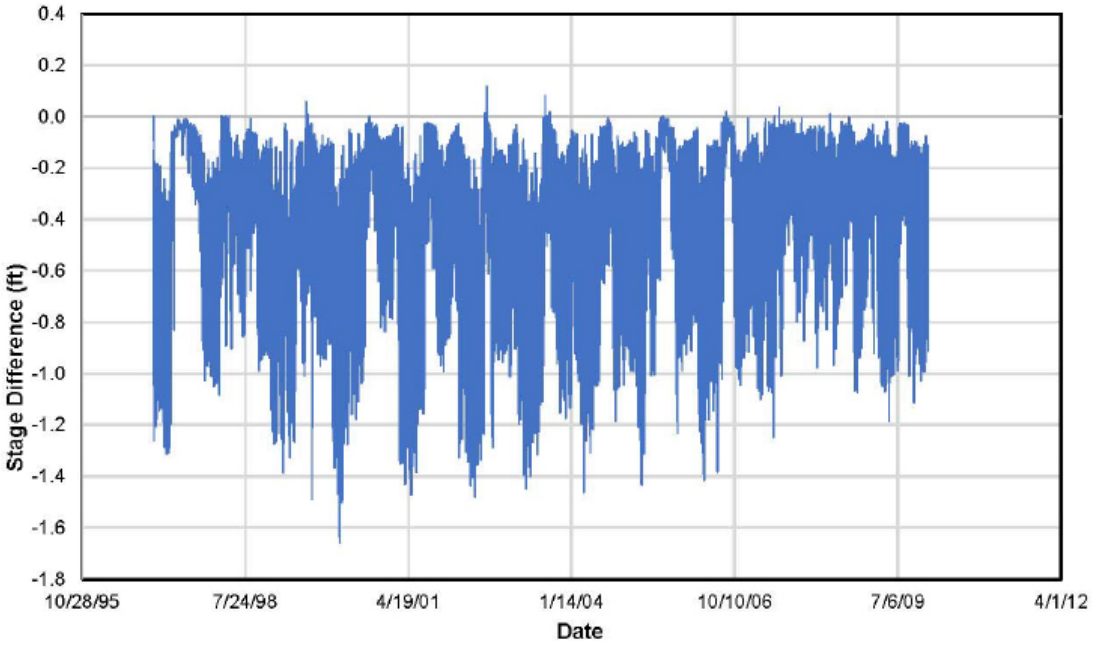
Old River - Impact of Exports on Stage

April 2001

Old River - Impact of Exports on Stage

1997-2009



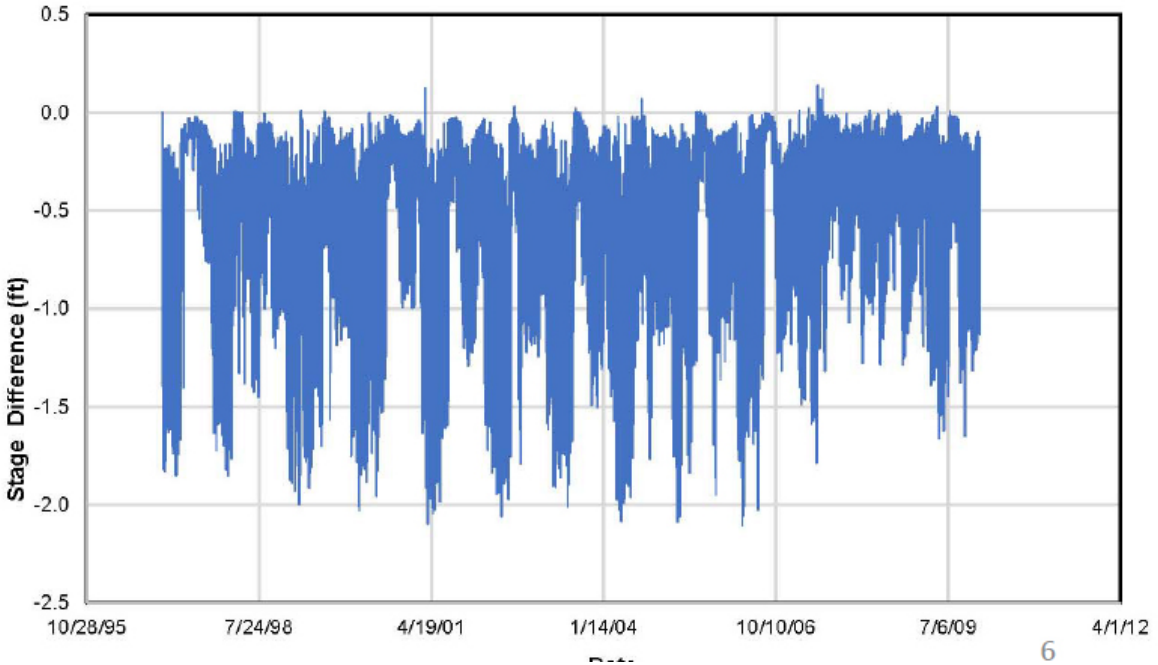


Middle River - Impact of Exports on Stage

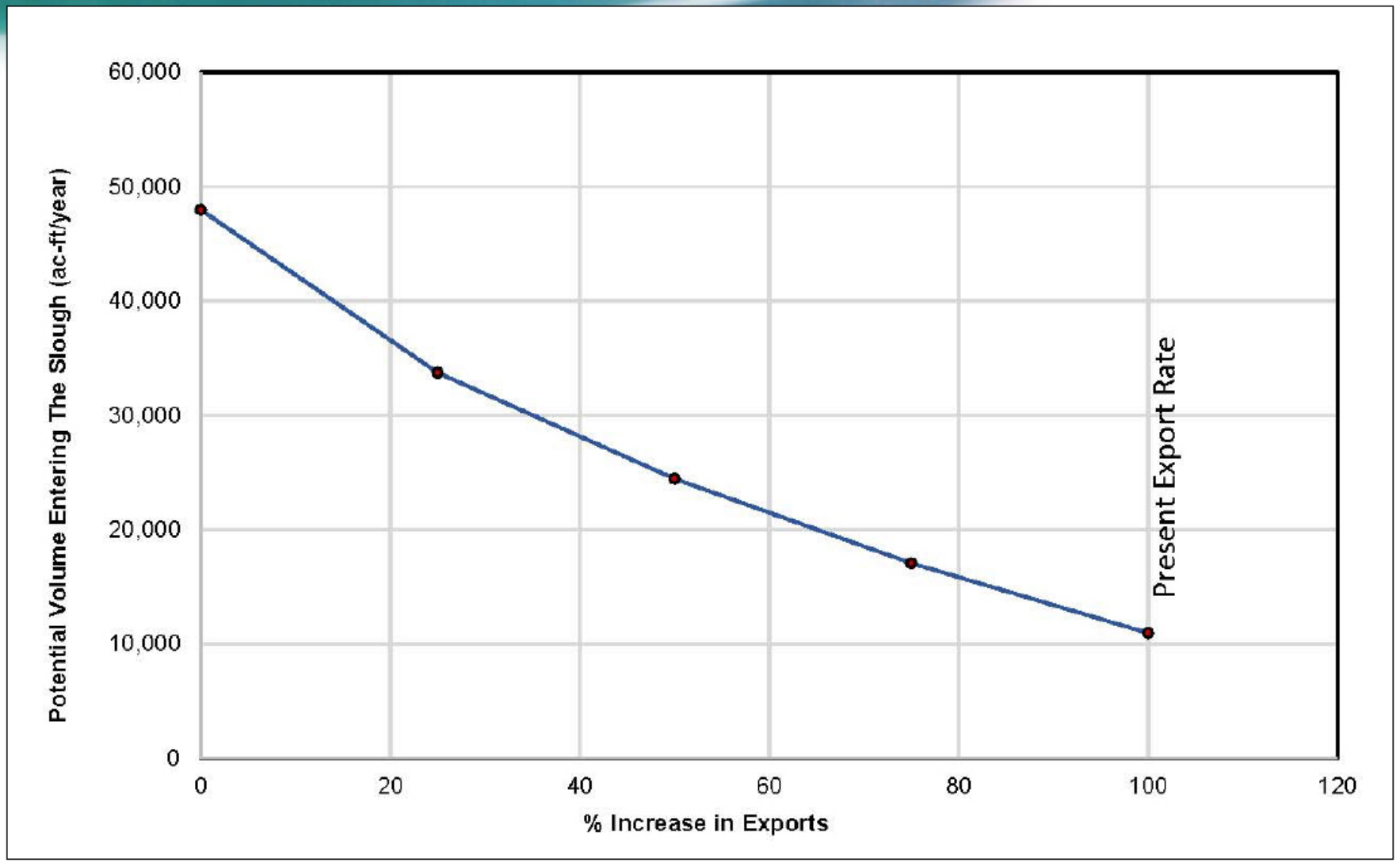
1997-2009

Sugar Cut - Impact of Exports on Stage

1997-2009



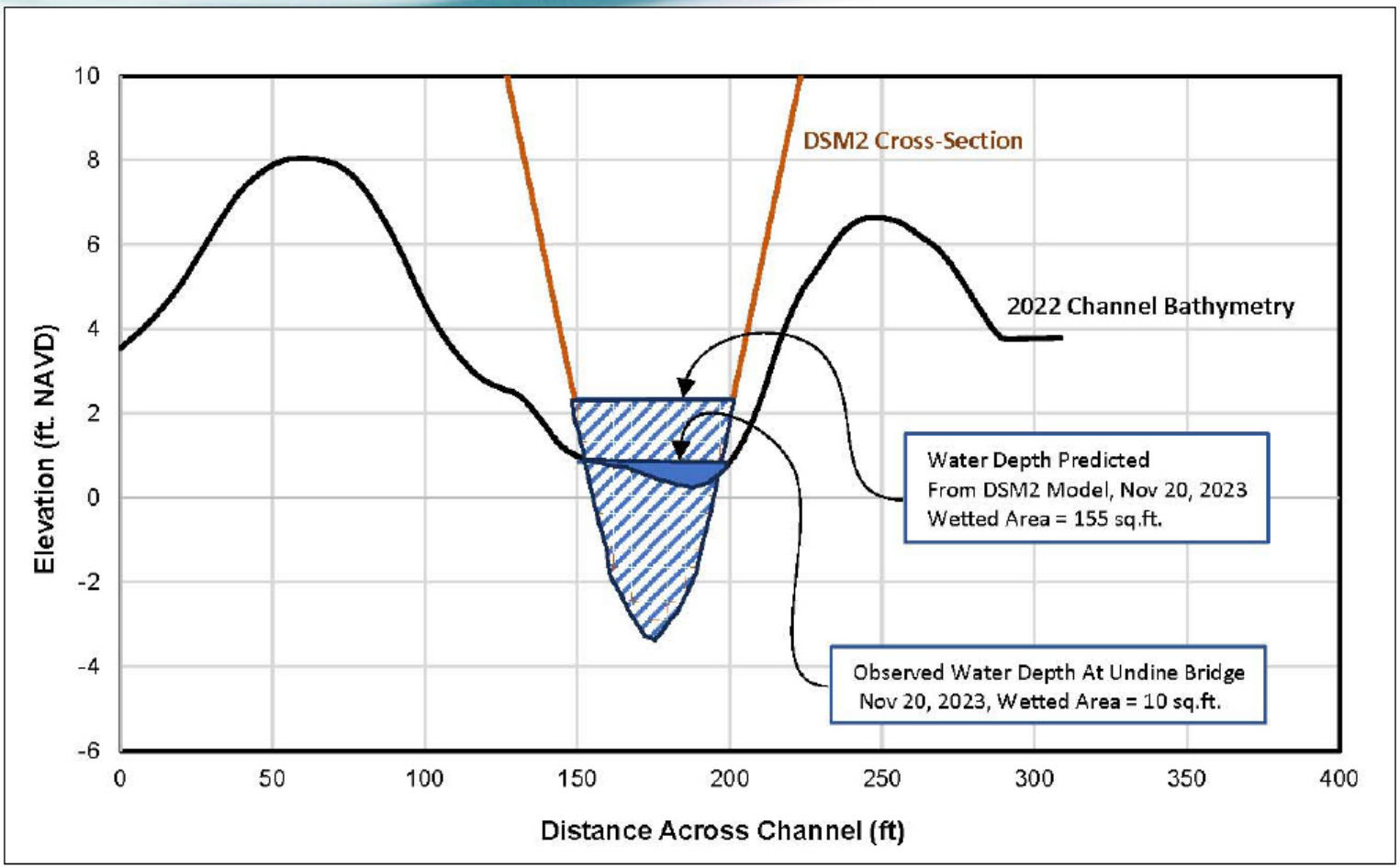
Flow Into Tom Paine Slough Reduction Due To Exports



FISH

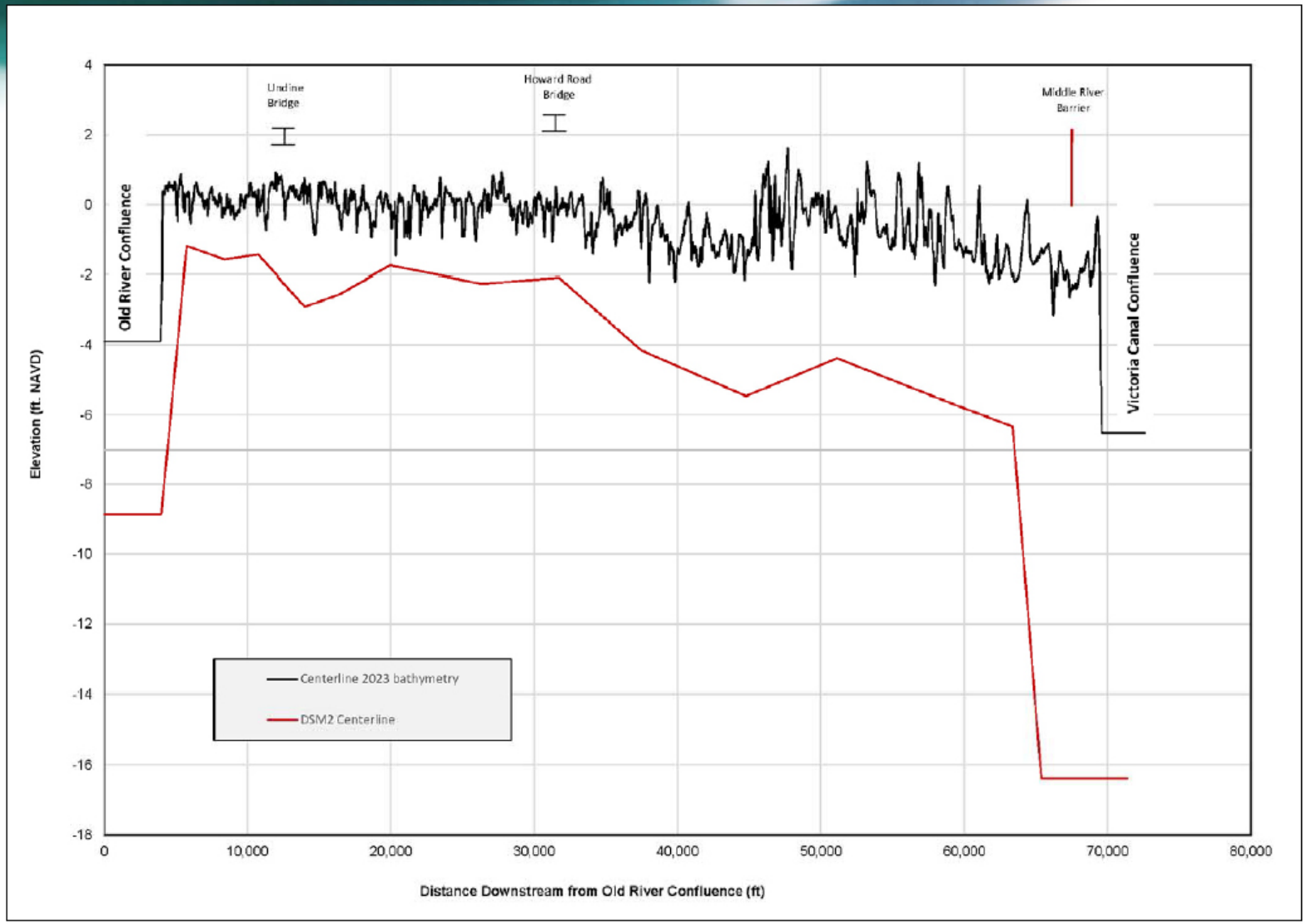
MODELING

Middle River Cross-Section At Undine Bridge

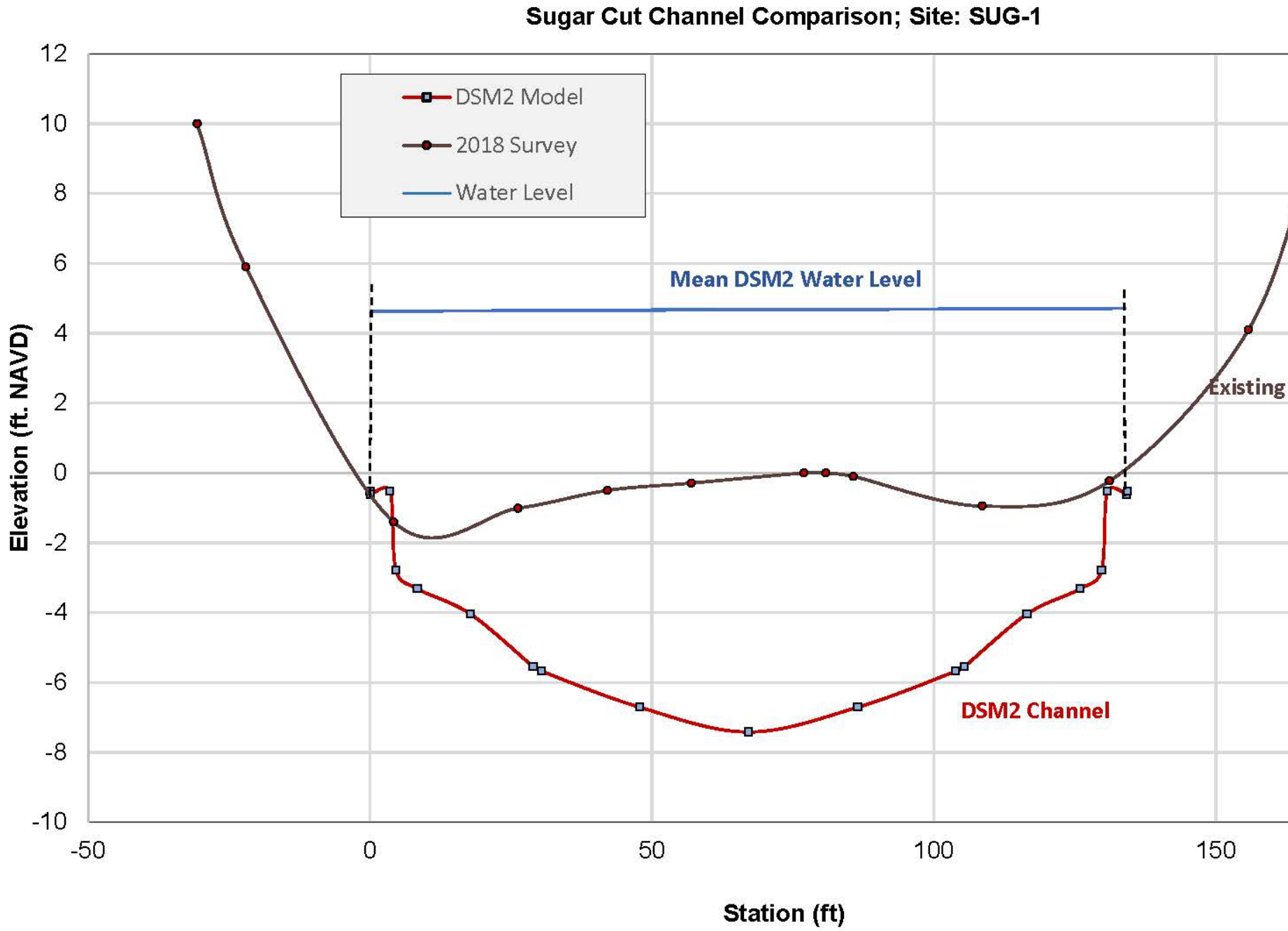


Exhibit

Comparison of Middle River 2023 Bathymetry with DSM2 Model Bathymetry



Exhibit


Sugar Cut Channel Comparison; Site: SUG-1
DSM2 Model
2018 Survey
Water Level
Mean DSM2 Water Level
Existing
DSM2 Channel
Elevation (ft. NAVD)
Station (ft)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-50
0
50
100
150

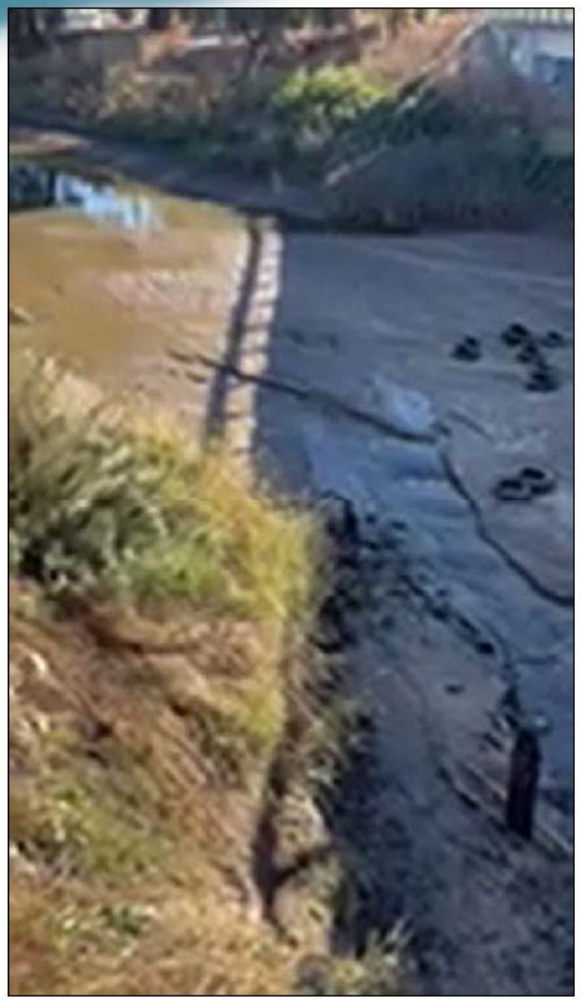
SILT

27-Dec-2017 1551 UTC | 37.802395, -121.448021
17500 S Tracy Blvd, Tracy, CA 95304, USA

Middle River at Undine Bridge

November 20, 2023

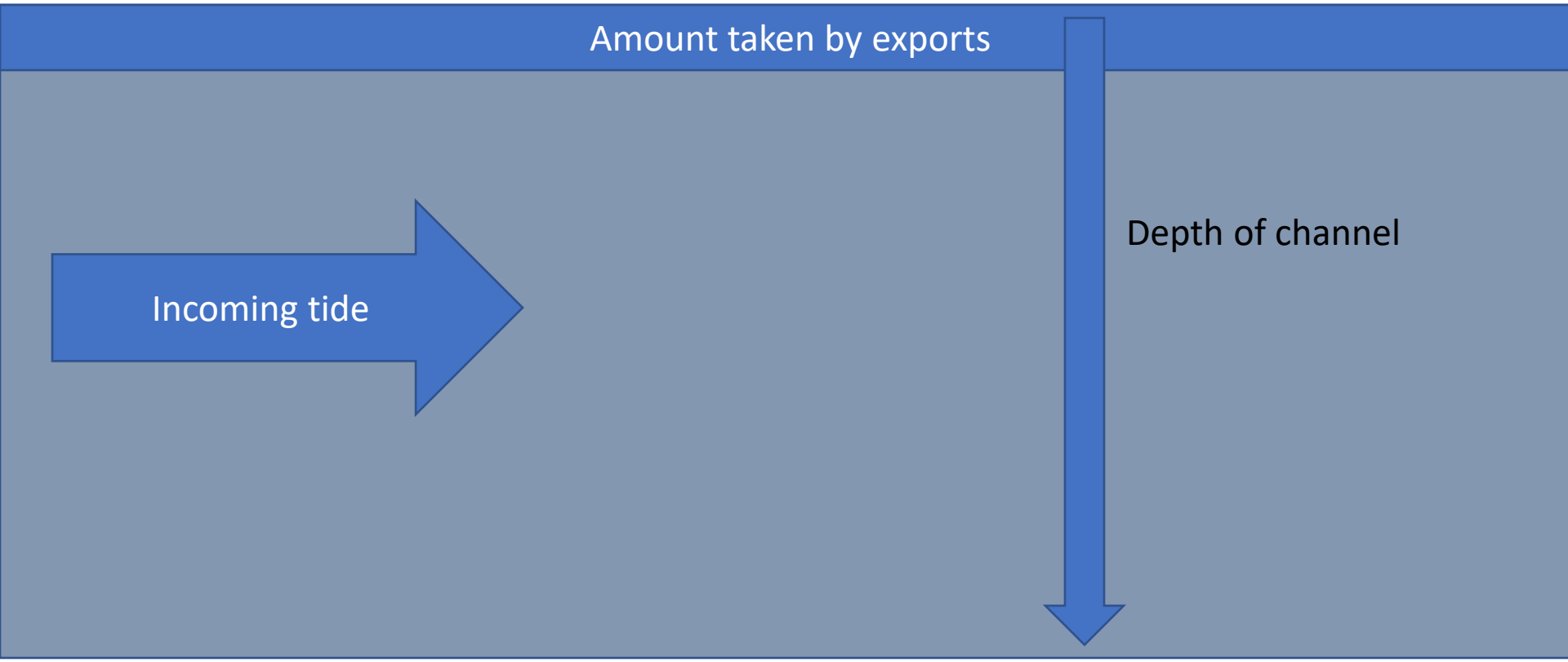
Looking Upstream



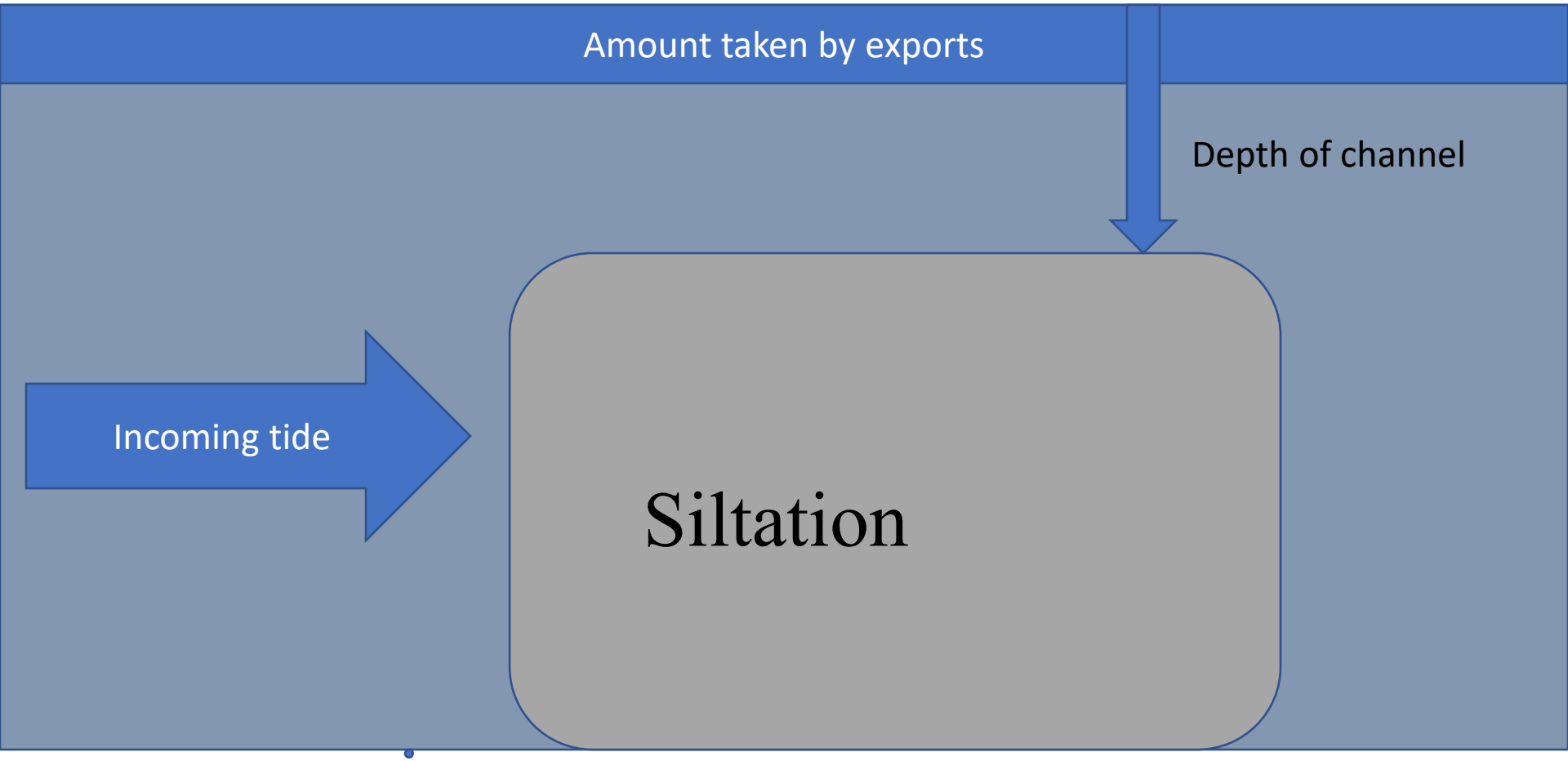
Looking Downstream

Exhibit

“ORIGINAL” CHANNEL CONDITIONS



CURRENT CHANNEL CONDITIONS

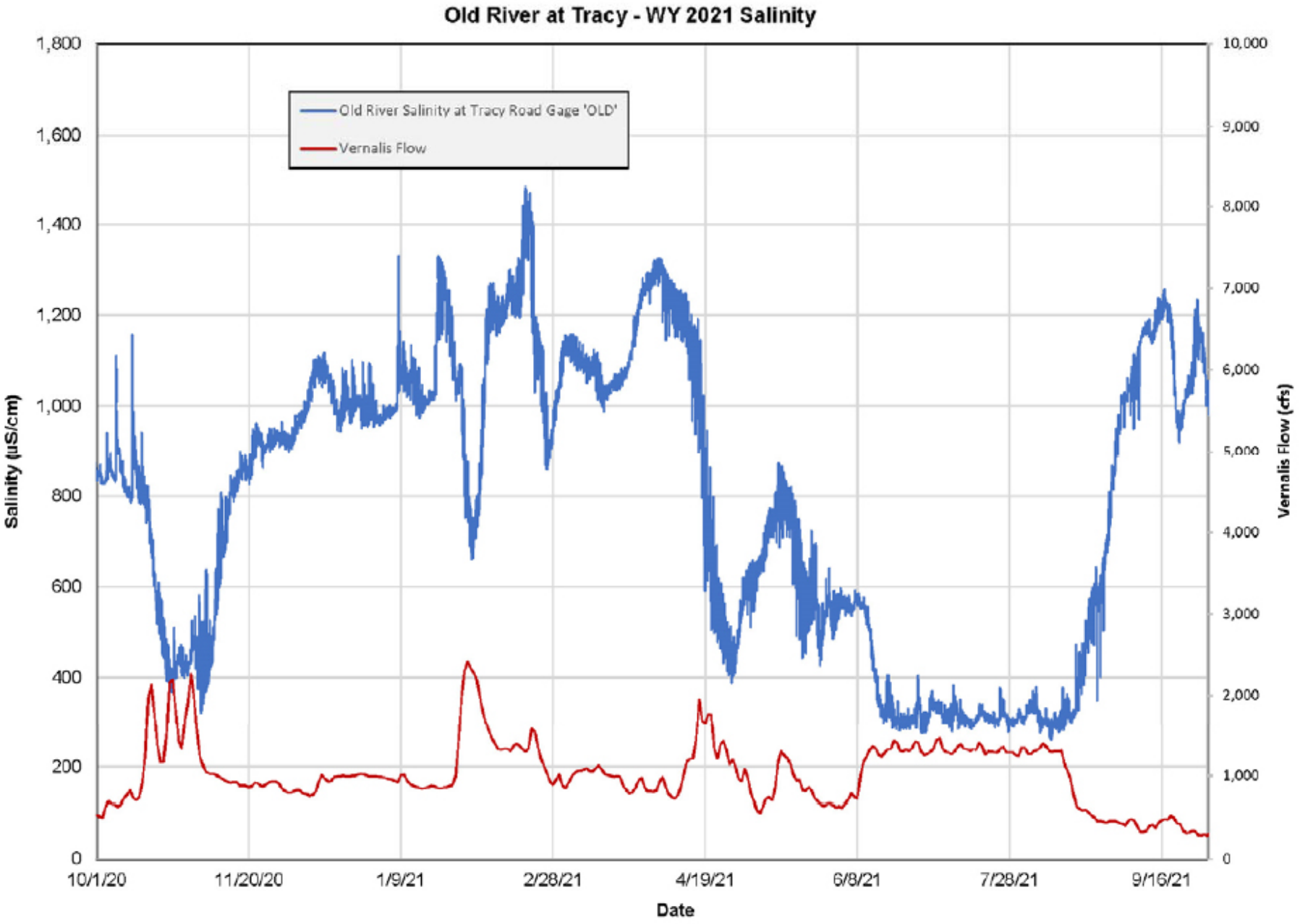


LOW WATER LEVEL CONSEQUENCES:

Can’t divert from parts of Middle River.
Wear and tear on pumps.

Pescadero RD sometimes can’t operate all or many of its pumps.

SOLUTIONS


Old River at Tracy - WY 2021 Salinity
Old River Salinity at Tracy Road Gage 'OLD'
Vernalis Flow
Salinity (uS/cm)
Vernalis Flow (cfs)
Date
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
10/1/20
11/20/20
1/9/21
2/28/21
4/19/21
6/8/21
7/28/21
9/16/21

PL 108-361

MITIGATE IMPACTS

ADDITIONAL PUMPING MEANS ADDITIONAL HARM

QUESTIONS?
COMPLAINTS?
ARREST WARRANTS?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