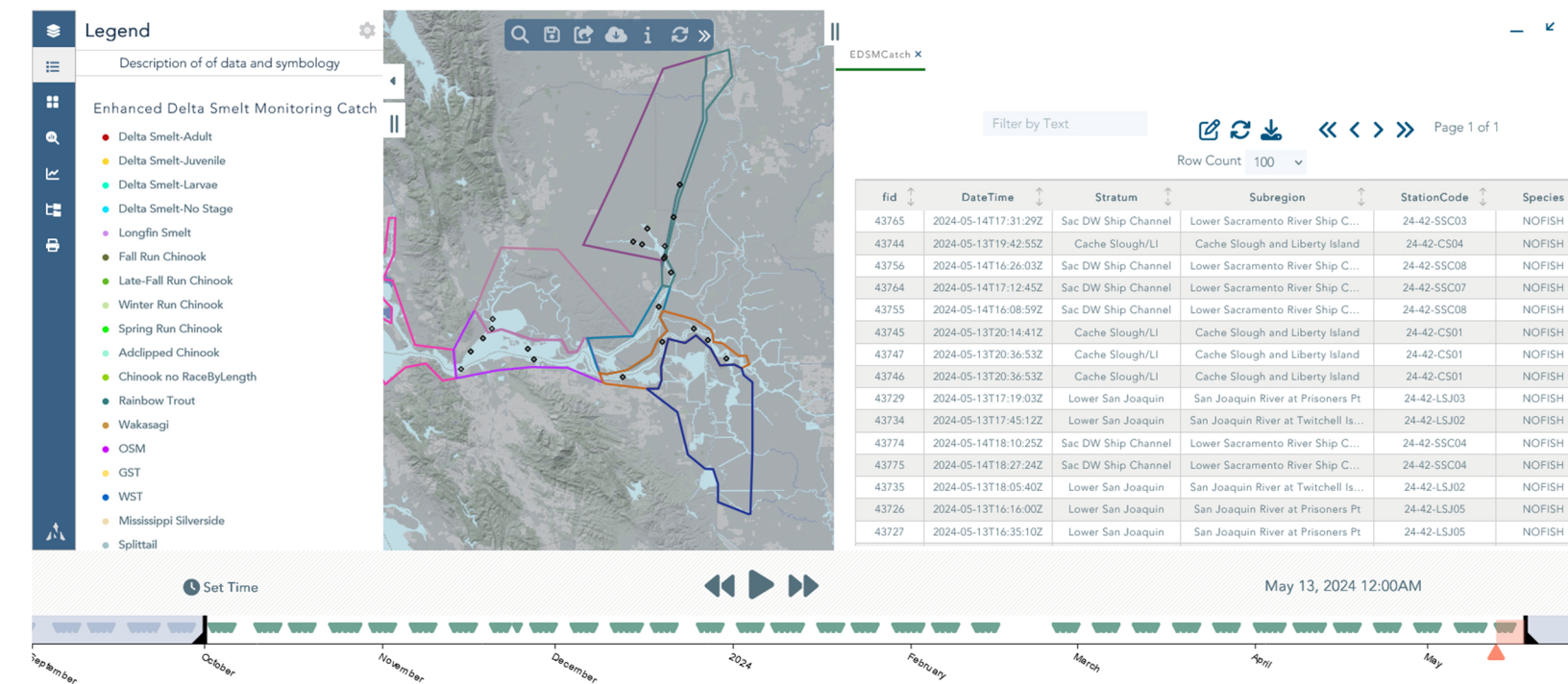
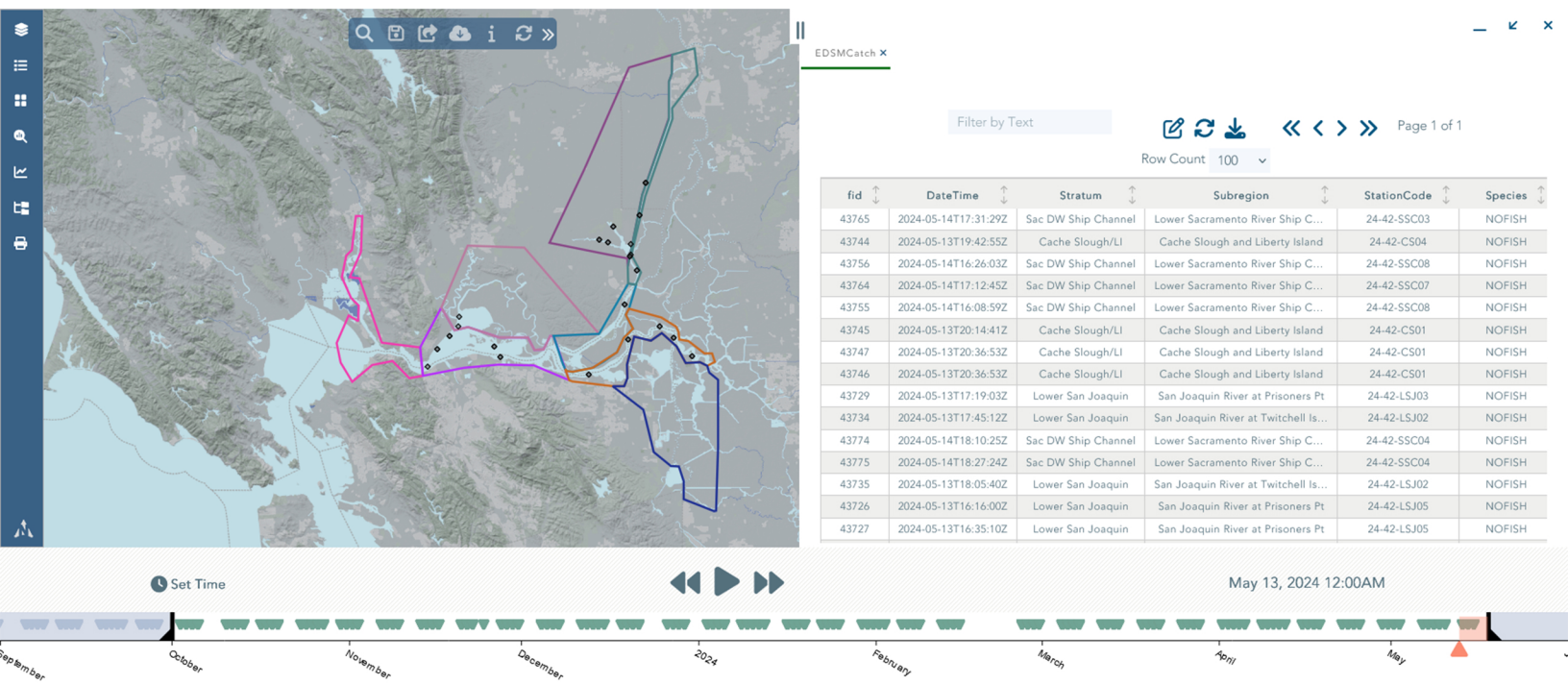




Bay Delta Live Data Discovery and Analysis Presentation to the IEP

May 23, 2024



Enhanced Delta Smelt Monitoring Program Catch Snapshot

EDSM Phase 2-20mm

Delta Smelt	143	Longfin Smelt	1902
Chinook Salmon	7	Rainbow Trout	0
Wakasagi		685	

Data Collected: - , [NS = Not Sampled]

i

Enhanced Delta Smelt Monitoring Program Catch Snapshot

Current Week

Delta Smelt	0	Longfin Smelt	0
Chinook Salmon	0	Rainbow Trout	0
Wakasagi		0	

Data Collected: - , [NS = Not Sampled]

i

Enhanced Delta Smelt Monitoring Program Catch Snapshot

Catch Snapshot-Previous Week

Delta Smelt	0	Longfin Smelt	0
Chinook Salmon	1	Rainbow Trout	0
Wakasagi		0	

Data Collected: - , [NS = Not Sampled]

i

Species of management concern caught at key survey monitoring locations (2023-10-01 to 2024-05-18).



Daily Report WY24					
Date	Stratum	Unmarked Delta Smelt Catch			Marked Delta Smelt Catch
		Larval (<20mm)	Juvenile (20-58mm)	Adult (>58mm)	
2023-10-05	Lower Sacramento	0	0	1	0
2023-10-24	Lower Sacramento	0	1	0	0
2023-11-15	Lower Sacramento	0	1	0	0
2023-12-07	Lower Sacramento	0	0	0	1
2024-01-16	Lower Sacramento	0	0	0	1
2024-01-22	Suisun Marsh	0	0	1	1
2024-01-24	Sac Deep Water	0	0	0	1
2024-01-24	Suisun Marsh	0	0	0	1
2024-01-25	Lower Sacramento	0	0	0	1
2024-01-31	Lower San Joaquin	0	0	0	1
2024-02-01	Suisun Marsh	0	0	0	1
2024-02-05	Suisun Marsh	0	0	1	1
2024-02-05	Lower San Joaquin	0	0	0	3
2024-02-06	Suisun Marsh	0	0	0	1
2024-02-07	Lower Sacramento	0	0	0	2
2024-02-08	Lower Sacramento	0	0	0	1
2024-02-08	Lower San Joaquin	0	0	0	1
2024-02-12	Western Delta	0	0	0	1
2024-02-13	Lower San Joaquin	0	0	0	1
2024-02-14	Suisun Marsh	0	0	0	2
2024-02-26	Lower San Joaquin	0	0	0	1
2024-02-27	Suisun Marsh	0	0	0	1
2024-02-28	Lower San Joaquin	0	0	0	2
2024-03-11	Sac Deep Water	0	0	0	1
2024-03-11	Suisun Marsh	0	0	0	1
2024-03-13	Lower Sacramento	0	0	0	1
2024-03-25	Lower Sacramento	0	0	0	1
2024-03-25	Suisun Marsh	0	0	0	2
2024-03-26	Sac Deep Water	0	0	0	1
2024-04-03	Suisun Marsh	1	0	0	0
2024-04-05	Sac DW Ship Channel	43	0	0	0
2024-04-08	Suisun Marsh	1	0	0	0
2024-04-09	Sac DW Ship Channel	49	0	0	0
2024-04-09	Suisun Bay	12	0	0	0
2024-04-10	Lower Sacramento	1	0	0	0
2024-04-11	Suisun Bay	8	0	0	0
2024-04-15	Lower Sacramento	1	0	0	0
2024-04-16	Suisun Marsh	1	0	0	0
2024-04-17	Sac DW Ship Channel	5	0	0	0
2024-04-17	Suisun Bay	1	0	0	0
2024-04-23	Suisun Bay	5	0	0	0
2024-04-24	Sac DW Ship Channel	5	1	0	0
2024-04-25	Lower Sacramento	1	0	0	0
2024-04-25	Suisun Marsh	3	0	0	0
2024-04-29	Lower Sacramento	5	0	0	0
	Total	142	3	3	32

Daily Report

Smelt Snapshot WY24



Species	Larvae	Juvenile	Adult	Total
DSM	142	5	33	180
LFS	1595	1879	117	3770

2024-04-01 2024-06-28

Daily Report
Current Phase

Date	Stratum	Unmarked Delta Smelt Catch			Marked Delta Smelt Catch
		Larval (<20mm)	Juvenile (20-58mm)	Adult (>58mm)	
2024-04-03	Suisun Marsh	1	0	0	0
2024-04-05	Sac DW Ship Channel	43	0	0	0
2024-04-08	Suisun Marsh	1	0	0	0
2024-04-09	Sac DW Ship Channel	49	0	0	0
2024-04-09	Suisun Bay	12	0	0	0
2024-04-10	Lower Sacramento	1	0	0	0
2024-04-11	Suisun Bay	8	0	0	0
2024-04-15	Lower Sacramento	1	0	0	0
2024-04-16	Suisun Marsh	1	0	0	0
2024-04-17	Sac DW Ship Channel	5	0	0	0
2024-04-17	Suisun Bay	1	0	0	0
2024-04-23	Suisun Bay	5	0	0	0
2024-04-24	Sac DW Ship Channel	5	1	0	0
2024-04-25	Lower Sacramento	1	0	0	0
2024-04-25	Suisun Marsh	3	0	0	0
2024-04-29	Lower Sacramento	5	0	0	0
Total		142	1	0	0

2024-05-20 2024-05-27

Daily Report
Delta Smelt (DSM) captured by Lodi USFWS Office (Current Week)

Date	Stratum	Unmarked Delta Smelt Catch			Marked Delta Smelt Catch
		Larval (<20mm)	Juvenile (20-58mm)	Adult (>58mm)	
Total		0	0	0	0

Data and References

Interagency Ecological Program and US Fish and Wildlife Service: San Francisco Estuary Enhanced Delta Smelt Monitoring Program Data, 2016-2023

Citation: United States Fish and Wildlife Service, K. Erly, R. Cook, J. Speegle, G. Bigham, D. Supervisory Fish Biologist, and T. Senegal. 2023. Interagency Ecological Program and US Fish and Wildlife Service: San Francisco Estuary Enhanced Delta Smelt Monitoring Program data, 2016-2023 ver9. Environmental Data Initiative. <https://doi.org/10.6073/pasta/760c4467d507cc08c7245d39dfa6767b>

[View Full Metadata](#)

Interagency Ecological Program and US Fish and Wildlife Service: Enhanced Delta Smelt Monitoring Program Experimental Larval Survey Data 2018-2019

Citation: United States Fish and Wildlife Service, D. Barnard, B. Mahardja, D. Barnard, C. Johnston, J. Speegle, M. Gilbert, R. Mckenzie, S. Durkacz, R. Mckenzie, S. Staiger, A. Arrambide, K. Erly, B. Perales, D. Bridgman, A. Raisch, J. Dummitt, and Z. Jessee. 2021. Interagency Ecological Program and US Fish and Wildlife Service: Enhanced Delta Smelt Monitoring Program Experimental Larval Survey Data 2018-2019 ver 2. Environmental Data Initiative. <https://doi.org/10.6073/pasta/8e477173a14bc5164d619cb1c3740276>

[View Full Metadata](#)

Delta Juvenile Database Web services

DJFMP/EDSM Web Services provide a simple, reliable REST / CGI interface that accepts a few parameters as name / value pairs in the REQUEST QUERY STRING. The Web Services then determine the RESPONSE from these parameters and then return either COMMA SEPARATED VALUES or a JSON STRING to the requesting agent.

[View Web Service Documentation](#)



Delta Smelt photo credit from California Department of Water Resources



About EDSM (USFWS)



Year Initiated:	2016
Survey Frequency:	Weekly
Tow Information:	2-4 10-minute tows at each location
Sampling Season:	Year Round
Number of Stations:	Approximately 36 (Kodiak) or 40 (20mm) randomly-generated stations sampled per week
Gear Type:	Kodiak net (Phase 1 and 3) or 20mm net (Phase 2)
Survey Length:	Each survey takes 4-5 days to complete
Description:	The Enhanced Delta Smelt Monitoring (EDSM) is a year-round monitoring program focused on sampling Delta Smelt at nearly all life stages. The high frequency sampling conducted by the USFWS provides estimates of abundance, distribution, and, when sufficient data is available, risk of entrainment. From July through March, Kodiak trawling is conducted to collect juvenile through adult life stages. This data is reported in close to real time in the map to the right and table below. From April-June, EDSM conducts larval sampling. This data is not directly linked to Bay-Delta Live. Learn more about the larval sampling and how to access data via the Lodi FWS website

Credit: The EDSM Monitoring Program Data is maintained by the U.S. Fish and Wildlife Service through the Lodi Fish and Wildlife Office. To learn more about the program please visit the [U.S. Fish and Wildlife Service website](#). Monitoring data is delivered via web services.

Week 41 20mm DSM Abundance Estimate TBD	599,217 with 95% CI (64,737; 2,380,828)
--	---

Total Number of Tows Sampled 5/26,5/18 and 5/19/23	30
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Total Number of EDSM 20mm Sites Sampled TBD	40
--	----

Enhanced Delta Smelt Monitoring Program Catch Snapshot WY2023		
	Delta Smelt	180

2023-10-01 2024-05-23

Enhanced Delta Smelt Monitoring Program Catch Snapshot		
	Longfin Smelt	3770

20mm Survey
TBD

Table 2

Survey Week	Stratum	Site #	DSM Confirmed ID				LFS Confirmed ID		
			L	J	A	M	L	J	A
36	Suisun Bay	5	1	0	0	0	4	0	0
36	Suisun Bay	5	0	0	0	0	0	3	0
36	Lower Sacram	10	0	0	0	0	0	0	0
36	Cache Slough LI	5	0	0	0	0	0	0	0
36	Sac DW Ship Chan	5	0	0	0	0	1	0	0
36	Lower San Joaquin	10	0	0	0	0	0	0	0
37	Suisun Bay	10	0	0	0	0	61	1	0
37	Suisun Marsh	10	2	0	0	0	11	0	0
37	Lower Sacramento	5	1	0	0	0	1	0	0
37	Cache Slough LI	5	0	0	0	0	0	0	0
37	Sac DW Ship Chan	5	0	0	0	0	0	0	0
37	Lower San Joaquin	5	5	0	0	0	0	0	0
38	Suisun Bay	5	5	1	0	0	132	4	0
38	Suisun Marsh	5	5	1	0	0	26	0	0
38	Lower Sacramento	5	5	0	0	0	0	0	0
38	Cache Slough LI	10	0	0	0	0	0	0	0
38	Sac DW Ship Chan	5	0	0	0	0	0	0	0
38	Lower San Joaquin	10	0	0	0	0	0	0	0
39	Suisun Bay	5	0	0	0	0	2	0	0
39	Suisun Marsh	5	0	0	0	0	4	0	0
39	Lower Sacramento	5	1	0	0	0	0	0	0
39	Cache Slough LI	10	0	0	0	0	0	0	0
39	Sac DW Ship Chan	5	0	0	0	0	0	0	0
39	Lower San Joaquin	6	0	0	0	0	0	0	0
40	Suisun Bay	5	0	0	0	0	35	4	0
40	Suisun Marsh	10	0	0	0	0	156	21	0
40	Lower Sacramento	10	0	0	0	0	0	0	0
40	Cache Slough LI	5	1	0	0	0	0	0	0
40	Sac DW Ship Chan	5	1	0	0	0	0	0	0
40	Lower San Joaquin	5	0	0	0	0	0	0	0
41	Suisun Bay	5	0	0	0	0	2	0	0
41	Suisun Marsh	10	3	0	0	0	111	46	0
41	Lower Sacramento	10	0	0	0	0	0	0	0
41	Cache Slough LI	5	0	0	0	0	0	0	0
41	Sac DW Ship Chan	5	0	0	0	0	0	0	0
41	Lower San Joaquin	5	0	0	0	0	0	0	0

EDSM 2023 Phase 2

TBD

(20mm Larval Surface Trawling) week numbers and corresponding sample dates

Survey Week	Survey Week Dates
36	April 3-7, 2023
37	April 10-14, 2023
38	April 17-21, 2023
39	April 24-28, 2023
40	May 1-5, 2023
41	May 8-12, 2023
42	May 15-19, 2023
43	May 22-26, 2023
44	May 29-June 2, 2023
45	June 5-9, 2023
46	June 12-16, 2023
47	June 19-23, 2023
48	June 26-30, 2023



Interagency Ecological Program

TBD

Fork length ranges for life stages of Delta Smelt and Longfin Smelt as defined by the Interagency Ecological Program.

Species	Larvae	Juvenile	Adult
Delta Smelt	<20mm	20-58mm	>58mm
Longfin Smelt	<20mm	20-84mm	>84mm

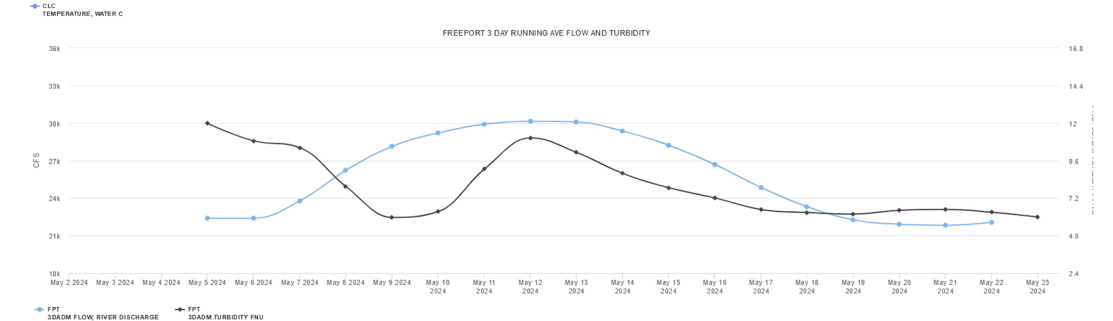
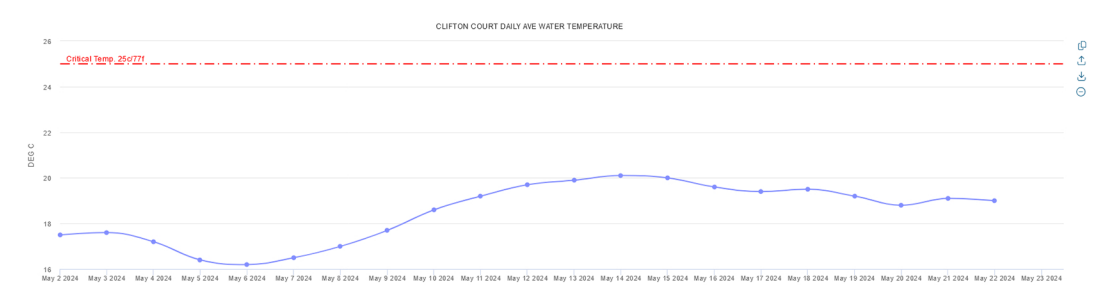
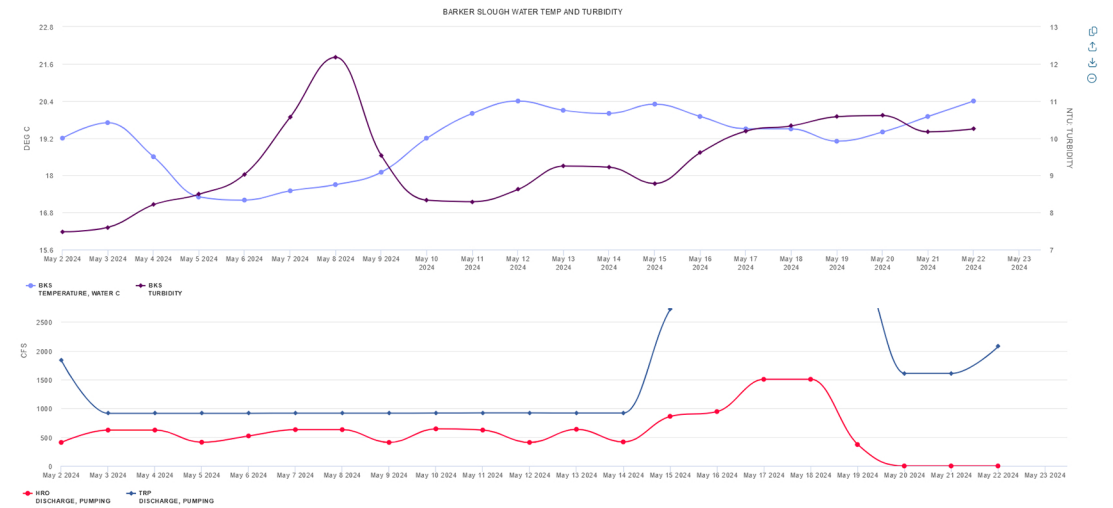
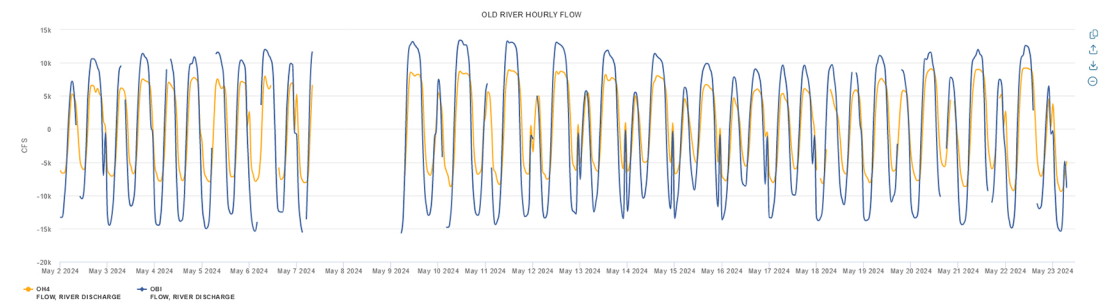
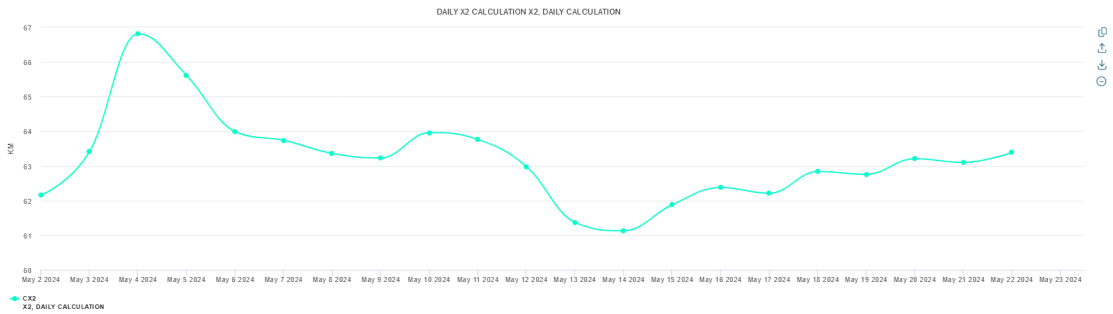
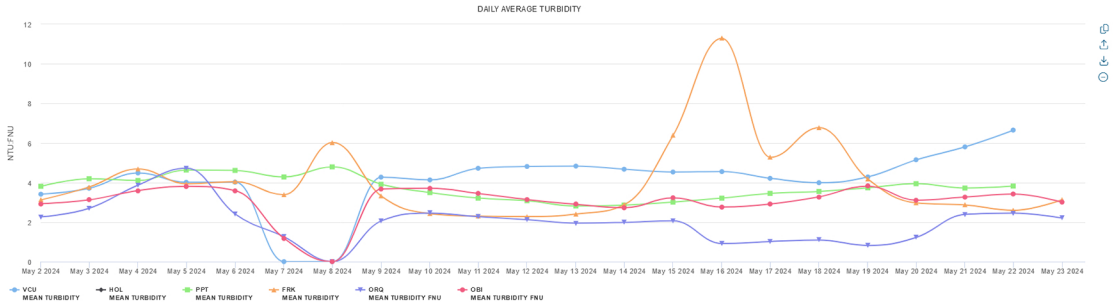


TBD

TBD

Delta Smelt (DSM) and Longfin Smelt (LFS) catch in Chipps Island midwater trawls from 5/15, 5/18, and 5/19/23. These data are preliminary and subject to change. If the table is blank, there were no DSM or LFS detections.

Data	Station Code	Species	Marked Type	Fork Length	Total Catch	Disposition
------	--------------	---------	-------------	-------------	-------------	-------------





Operations Summary

Data is preliminary, subject to change
This [summary](#), State water Project informational data, and data for previous 30 days
Data Collected: 2024-05-06

Delta Operations	
Delta Conditions	Excess with Restrictions for San Joaquin Flow
Delta X Channel	Delta Gates (of day is open)0
% of Inflow Diverted	Inflow 4.1 (14-day avg) %
Outflow	29900 CFS
X2 Position	(yesterday)66
Controlling Factors	SJR I/E
Data Collected: 2024-05-06	

Estimated Hydrology	
Total Delta Inflow	30562 CFS
Sacramento River	23817 CFS
San Joaquin River	4385 CFS
Reservoir Data and Reports	
Data Collected: 2024-05-06	

Schedule Exports	
Clifton Court Inflow	600 CFS
Jones Pumping Plant	900 CFS
Data Collected: 2024-05-06	

Reservoir Storages	
Shasta Reservoir	4399 TAF
Folsom Reservoir	869 TAF
Oroville Reservoir	3522 TAF
San Luis Res. Total	1390 TAF
SWP Share	532 TAF
View Reservoir Dashboard	
Data Collected: 2024-05-06	

Reservoir Releases	
Keswick	6000
Nimbus	4000
Oroville	8000
Data Collected: 2024-05-06	

Water Quality Conditions in the Sacramento and San Joaquin Rivers (Event Data)

In situ event station data for current water quality conditions from key monitoring stations in the Sacramento and San Joaquin Rivers. Reported from CDEC.

Turbidity in Delta	
Prisoner's Point (PPT) 3.94 NTU	Old River at Highway 4 (OH4) 17.30 FNU
Holland Cut Near Bethel Island (HOL) FNU	Victoria Canal Near Byron (VCU) 5.80 NTU
Middle River Near Holt (HLT) 2.40 FNU	Sacramento River at Rio Vista (SRV) -- FNU
Middle River at Middle River (MDM) 2.90 FNU	San Joaquin River at Jersey Point (SJJ) 3.90 FNU
Data Collected: 05-21-2024	

Electrical Conductivity	
Jersey Point (SJJ) 185 uS/cm	Bethel Island (BET) 211 uS/cm
Bacon Island (BAC) 299 uS/cm	Holland Tract (HLL) 252 uS/cm
Data Collected: 05-20-2024	

River Discharge	
Sacramento River At Freeport (FPT) 24605 cfs	San Joaquin River Near Vernalis (VNS) 8418 cfs
Data Collected: 05-21-2024	

Dissolved Oxygen	
Sacramento River at Hood (SRH) 9.4 mg/L	Turner Cut Near Holt (TRN) 8.0 mg/L
Miner Slough Near Sacramento River (MIR) 9.1 mg/L	Prisoner's Point (PPT) 8.6 mg/L
	San Joaquin River at Mossdale Bridge (MSD) 9.2 mg/L
Data Collected: 05-21-2024	

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Type: application/pdf Subtype: EDSM Weekly Report



EDSM Weekly Report (242) April 18, 2024
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USFWS Enhanced Delta Smelt Monitoring 2023 Phase 3 preliminary Analysis (Draft)
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