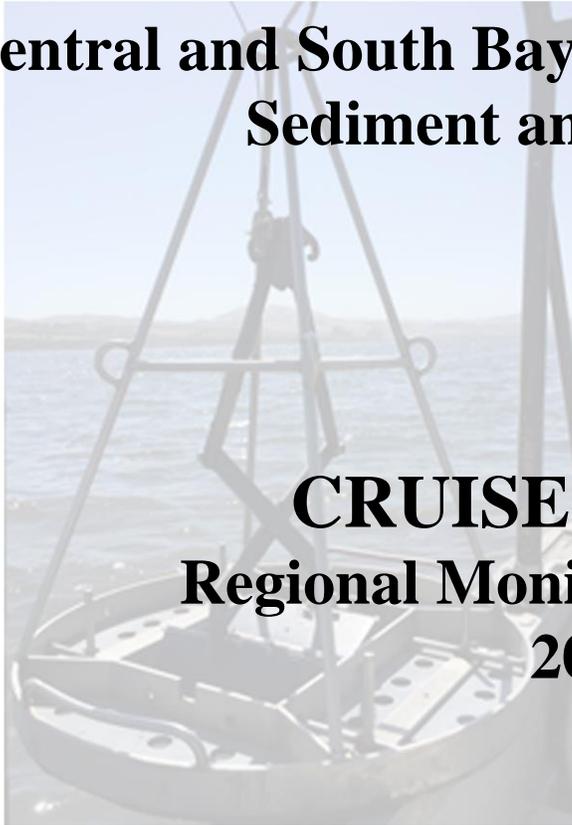


**Contaminant Concentrations
In San Francisco Bay
Central and South Bay Near-field and Margins
Sediment and Fish Tissue**



**CRUISE REPORT
Regional Monitoring Program
2023**



**Prepared for the
San Francisco Estuary Institute**



**by
San Jose State University Research Foundation
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Introduction

This report contains information on the summer 2023 field sampling efforts conducted by the San Jose State University Research Foundation's (SJSURF) Marine Pollution Studies Lab at Moss Landing Marine Labs (MPSL-MLML) in support of the Regional Monitoring Program's (RMP) Central and South Bay Near-field and Margins chemical contaminant study. The work was contracted through the San Francisco Estuary Institute (SFEI) to SJSURF to collect sediment and prey fish tissue samples.

This report includes sample collections over a four week period (August 21st through September 14th) encompassing four trips. A total of 38 sediment and 12 prey fish sites were sampled, three of which included collecting duplicate sediment samples (Appendix A). Detailed sample counts and protocols can be found in the "2023 Bay Prey Fish and Near-field / Margins Sediment Sampling and Analysis Plan" prepared by SFEI.

At each sediment site, field measurements were recorded for sediment pH and composition (e.g., silt/clay, mud, sand). The field pH meter was calibrated daily prior to sampling. Sediment was collected using a stainless steel, Kynar-covered modified VanVeen grab (0.10 m² area) penetrating 8-10 cm into the sediment. Three to six grabs were conducted at each site depending on the amount of sediment needed for analyses. At sites in open waters, sediment grabs were taken in the general area of the target coordinate swinging the boat and releasing anchor line after each grab. At sites in narrower defined channels such as CB56 and RC1_NF, sediment grabs were taken horizontally across the channel, in general, at the left center, center, and right center areas except for sites in wider main channels where the spread was smaller. Some analytical jars were filled directly by scraping the jar into the top sediment layer of the grab or by using a stainless steel scoop to fill the smaller vials. Additional sediment (top 5 cm) was collected using a polyethylene scoop and then placed into a 2-liter trace-cleaned polycarbonate tub. Three sites (LSB01, LSB1_NF, SB051) were pre-selected by SFEI for a duplicate sample to be collected. In these situations, the Replicate 1 samples were collected in the first 2-3 grabs and the Replicate 2 samples were collected in the second 2-3 grabs. Field blank samples were taken at sites LSB01, SB051, and SOSL40_NF in which the field blank jar was opened on the boat near the sampling area while the regular sample jar was filled and then the field blank jar was closed and placed in a cooler with dry ice with the regular samples.

Tubs were kept on wet ice coolers while in the field until brought back to the laboratory for processing. Tubs were processed in the MPSL-MLML lab on August 28th, 30th, and September 8th by stirring the sediment until homogenized and then aliquoting sediment into analytical jars. Grain size jars were refrigerated and stored at 4-6°C while all other jars were stored in a -20°C freezer until shipment to the analytical laboratories.

Fishing for prey fish (topsmelt, Mississippi silverside) was conducted using a beach seine or cast net depending on location while staghorn sculpin were targeted with benthic otter trawls. All fish samples were placed immediately on wet ice on the boat. At the end of each day, individual fish were measured for total length (mm TL), weighed (grams), and grouped into composite samples before being placed on dry ice in coolers in the field or in a -20°C freezer upon return to the laboratory.

Composite samples were homogenized and processed in the lab to produce PFAS, PCB (where applicable), and, where possible, archive (ARCH) jars.

Sediment jars were shipped to the analytical labs on September 11, 2023 while tissue jars were shipped on December 5, 2023. Archive jars were picked up by AMS staff on December 11, 2023 and driven to AMS for storage. Hard- and soft-copy COCs were provided to the laboratories and SFEI staff.

This report details weekly synopses of sampling efforts and provides figures for sampling locations (see Figures 1-5). Target and actual latitude and longitude coordinates, sample dates, and type of collections are listed in Appendix A. Fish tissue analytical jar weights by analysis are listed in Appendix B.

Copies of field data sheets (PDF files) and CEDEN templates (Excel files) for field, chemistry, and tissue collections were provided to SFEI.

Trip 1 - Sampling Dates: August 21-25, 2023

Sampling Crew: Marco Sigala, Stacey Swenson, Justin Gill

The main objective of this cruise was to target sediment and fish tissue sites using mid-day high tides to access shallow areas. Sixteen sites were successfully sampled for sediment and five sites were sampled for fish tissue.

Monday, August 21st

The sampling crew started the week launching the vessel out of the Jack London Aquatic Center in Oakland Inner harbor and transiting to the area north of the Oakland airport. Site SB1_NF was sampled first for the full suite of analytes. The crew then transited into San Leandro Bay where three sites were sampled for sediment. Site CB2_NF had a lot of algae present in the sediment grabs and surrounding area. The rest of the afternoon was spent trawling for staghorn sculpin and running a beach seine for topsmelt. No fish were caught. After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses.

Tuesday, August 22nd

The sampling crew started the day at 0630 launching the vessel from the Richmond Harbor and transiting to Richardson Bay where site CB55 was sampled. Site CB51 was not accessible due to the low tide. The crew transited to the Loch Lomond marina area where site CB50 was sampled. The crew then transited south to site CB41 and then back to CB51 to collect sediment. The long drive back to Richmond Harbor was made to sample three sites in that area. Collections switched to trawling in the main Harbor Channel (site CB3_NF) where four trawls were run yielding 20 staghorn sculpin (103-140 mm TL). The crew drove to the back of Richmond Harbor to throw cast nets at site CB4_NF, and no fish were caught. After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses. At the hotel, topsmelt were measured (total length in mm), weighed (grams), and bagged. The fish samples were placed on dry ice.

Wednesday, August 23rd

The crew began the morning at 0630 launching from Oakland Inner Harbor and transiting to the Emeryville Crescent to collect sediment at CB56. The crew then transited to the Oakland airport area to trawl for staghorn sculpin and cast net for topsmelt at site SB1_NF. Four trawls yielded one sculpin (113 mm TL). The crew then threw three cast nets from 10:00 to 11:30 along the shoreline between the storm drain corner to the Ferry dock yielding no fish. The crew moved into San Leandro Bay for the rest of the afternoon. Twenty-five cast nets yielding one topsmelt were thrown at CB2_NF. Six cast nets were thrown around the channel marker at CB1_NF. No fish were caught. The crew returned to the boat launch, pulled the boat, and drove back to the hotel. After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses. At the hotel, the topsmelt and sculpin were measured (total length in mm), weighed (grams), and bagged. The fish samples were placed on dry ice.

Thursday, August 24th

The crew launched again from Oakland Inner Harbor and drove across the bay to the San Francisco shoreline where CB01 was sampled for sediment. The crew transited back to San Leandro Bay to continue fishing. Two beach seines were run at CB2_NF yielding 90 topsmelt. The crew then beach seined at CB1_NF producing 90 topsmelt after five seines. Since the topsmelt composites were completed, the crew switched to trawling. No staghorn sculpin were caught at either CB1_NF (3 trawls) or CB2_NF (4 trawls). After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses. The crew pulled the boat and drove to Oyster Point for the night. At the hotel, the topsmelt were measured (total length in mm), weighed (grams), and bagged into six composites (three each site) following the 75% length rule. Fish samples were placed on dry ice.

Friday, August 25th

The crew launched from Oyster Point marina at 0630 and transited to SB2_NF to collect sediment. The crew transited south to sample SB083 (shells in the mud) and then back north to SB051 to collect sediment. Field duplicate and field blank samples were collected at SB051. The BPA field blank jar, which was filled with clean sand, was partially broken. The jar was opened but left in the bag while sampling and then closed. The crew switched to fish sampling beginning with running six beach seines yielding 90 topsmelt at site SB2_NF. Otter trawling was conducted near the Oyster Point marina and surrounding vessel channels. Three sculpin were caught from six trawls and then the trawl got stuck really bad on something in the channel near a marker. After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses. The crew pulled the boat and drove back to MLML. At the lab, the topsmelt and sculpin were measured (total length in mm), weighed (grams), and bagged into three topsmelt and one sculpin composites following the 75% length rule. Fish samples were placed in a -20°C freezer.

All Trip 1 sediment samples were homogenized and aliquoted into analytical jars on Monday, August 28th. Grain size jars were refrigerated while all other analytical jars were placed in a -20°C freezer.

Trip 2 - Sampling Dates: August 29, 2023

Sampling Crew: Marco Sigala, Stacey Swenson

The main objective of this cruise was to collect sediment in the Redwood Creek Channel and Steinberger Slough areas. Seven sites were successfully sampled for sediment.

Tuesday, August 29th

The sampling crew arrived at the Redwood City Marina boat launch and began sediment sampling at 0805 at site SB082. The crew transited south across the Bay to sample sites SB080 and SB078 (shell hash present). The crew then transited north back to Steinberger Slough where sediment was collected at sites SB077, SS1_NF, and SS2_NF. The crew then transited to the back of Redwood Creek Channel to sample site RC1_NF, which showed a black sediment layer at about 2 cm depth. After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses. The crew pulled the boat and drove back to MLML.

All Trip 2 sediment samples were homogenized and aliquoted into analytical jars on Wednesday, August 30th. Grain size jars were refrigerated while all other analytical jars were placed in a -20°C freezer.

Trip 3 - Sampling Dates: September 5-9, 2023

Sampling Crew: Marco Sigala, Stacey Swenson, Justin Gill

The main objective of this cruise was to collect sediment and fish tissue samples in the South Bay, Lower South Bay, Redwood Creek Channel, and Steinberger Slough areas. Fifteen sites were successfully sampled for sediment and six sites were sampled for fish tissue.

Tuesday, September 5th

Trip 3 started by driving to Alviso Slough to launch the boat and begin sampling in the Lower South Bay for sediment. Site LSB14 was sampled first at 0935 and then the crew transited to LSB12 and then SOSL40_NF. Field blanks for QACs, BP, and PFAS were collected at SOSL40_NF by opening the jars near the sampling area while the regular samples were collected. The jars were then closed and placed on dry ice with the regular samples. While the tide was low, the field crew switched to beach seining at SOSL40_NF where 90 topsmelt were caught. The crew switched back to sediment sampling and transited to LSB1_NF waiting for the tide to fill in enough to access the target coordinates. A second tub was collected for a field duplicate at this site. The crew then transited to LSB01 where another field duplicate was collected as well as field blanks for BP and PFAST. After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses. The crew transited back to the launch ramp, pulled the boat, and drove to the hotel in San Jose.

Wednesday, September 6th

The crew drove to Redwood City and launched the boat from the Redwood City Marina. The crew transited into the Bay and north to the San Mateo bridge where sites SB081 and SB085 were sampled. The hydraulic wire broke after sampling SB085, so the crew had to repair and re-attach the sediment grab. Luckily the grab was on the boat and not in the water when the wire broke. The crew then transited south of the San Mateo bridge to sample SBWT01, SB084, and then SB079. Sediment sampling was completed for the day and the crew switched to tissue sampling in Steinberger Slough and Redwood Creek Channel. Beach seining was conducted first in Steinberger Slough yielding 90 topsmelt. Four trawls were run along the full length of Steinberger Slough with no fish caught, which is consistent with trawling efforts in previous years. The crew then transited to Redwood Creek Channel where five beach seines were run to yield 90 topsmelt. After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses. At the hotel, the topsmelt

were measured (total length in mm), weighed (grams), and bagged into six composites (three each site) following the 75% length rule. Fish samples were placed on dry ice.

Thursday, September 7th

The day began launching from the Alviso Slough and transiting to site LSBCP01 where it promptly got stuck due to the extremely shallow shelf where the target coordinates were located. After getting unstuck, the site was too shallow to access at a 6.6 foot high tide, and the samples were collected on the same mud flat ledge (i.e., similar characteristics) 147 meters from the target coordinates. The crew then transited to and sampled sites SOSL17, SOSL15_NF, LSB13, and LSB02_NF. LSB02_NF was sampled about 460 yards away from the target coordinates. It was discovered during data checks that the target coordinates (37.462820, -122.105000) were entered incorrectly into the ship's GPS as 37.462820, -122.10005). The latter was the last sediment site to be sampled for this project. The crew switched to fish sampling beginning with beach seining at LSB02_NF where two seines yielded 90 topsmelt. Trawls were conducted at this site with no fish caught. The crew transited across the Bay to LSB1_NF where beach seines were run at low tide on the bank in extremely gooey mud. It was hard to move but the seining produced 90 topsmelt. Four trawls were conducted at the low tide within a defined channel. The trawls yielded 20 staghorn sculpin and a lot of shrimp. This is encouraging because MPSL-MLML had caught minimal shrimp in previous trawling efforts in other Lower South Bay areas. The crew transited back towards Alviso Slough and conducted two trawls yielding 20 staghorn sculpin at SOSL40_NF. After collection, sediment samples were immediately placed on wet or dry ice depending on the analyses. At the hotel, topsmelt and sculpin were measured (total length in mm), weighed (grams), and bagged into composites following the 75% length rule. Fish samples were placed on dry ice.

While sampling this day, Autumn Bonnema from MPSL-MLML called Marco Sigala to tell him they found tissue samples outside of the freezer. A crew member had pulled a box out of the freezer thinking it was empty and it sat unfrozen for over a week. The affected samples were: 1 sculpin composite from Richmond Harbor, 6 topsmelt composites from San Leandro Bay, and 3 topsmelt composites from SFO/Oyster Point. These samples were discarded and the sites were sampled again during Trip 4.

Friday, September 8th

The last day of the trip began launching the boat out of Alviso Slough and transiting to SOSL15_NF to conduct beach seining and trawling. Nine seines produced 90 topsmelt while trawling yielded two undersized sculpin. The crew then moved to site LSB02_NF to trawl and no sculpin were caught. The crew transited back to the launch ramp, pulled the boat, and drove back to MLML. At the lab, all Trip 3 sediment samples were homogenized and aliquoted into analytical jars. Grain size jars were refrigerated while all other analytical jars were placed in a -20°C freezer. Topsmelt were measured (total length in mm), weighed (grams), and bagged into composites following the 75% length rule. Fish samples were placed in the -20°C freezer.

Trip 4 - Sampling Dates: September 12-14, 2023

Sampling Crew: Marco Sigala, Stacey Swenson, Justin Gill

The main objective of this cruise was to finish the project collecting fish tissue samples in Central Bay (Oakland and San Francisco airports), San Leandro Bay, and Richmond Harbor areas. Six sites were sampled for fish tissue.

Tuesday, September 12th

The crew launched from Oyster Point and transited across the Bay to the Oakland airport area to fish site SB1_NF. Seven seines yielded 90 topsmelt including additional larger topsmelt that were not kept. Four trawls were conducted yielding no staghorn sculpin. The crew then transited back to the Oyster Point area conducting 6 trawls along the Brisbane Marina and Oyster Point Marina walls and nearby areas. Twenty sculpin were caught and kept. The crew pulled the boat and drove to Oakland to stay the night. At the hotel, topsmelt and sculpin were measured (total length in mm), weighed (grams), and bagged into composites following the 75% length rule. Fish samples were placed on dry ice.

Wednesday, September 13th

The crew launched out of Oakland Inner Harbor and transited to San Leandro Bay. The crew began at site CB1_NF with a trawl at 0815 and got stuck on a big drum. The crew then switched to beach seining and caught 90 topsmelt in two seines. The crew then went to CB2_NF where a seine produced 90 topsmelt. Since all six topsmelt composites for San Leandro Bay were completed, the crew switched back to trawling still yielding no staghorn sculpin. All of the channels in San Leandro Bay were trawled over multiple trips in San Leandro Bay without any sculpin being caught this year.

Thursday, September 14th

The final day of sampling began with the crew driving from Oakland to Richmond to launch from the marina. Due to a morning low tide, the crew started out with beach seining looking for suitable areas. Most of the Richmond Harbor has a rocky shoreline with steep drop-offs into deep water. A small section of bank with a slippery hardpan surface was found as the main channel turned into the back area. Eleven seines were conducted over 1.75 hours producing 90 topsmelt at CB3_NF. The crew then transited to the back area where it was just as difficult to find a suitable seining area. An old launch ramp in the back corner became the focus area for seining. After 20 beach seines and three hours of walking/swimming in disgusting water, only 49 topsmelt were caught at CB4_NF. The last five seines only produced undersized topsmelt. Marco Sigala called the beach seining effort due to the lack of production and moved back to the main channel to trawl at CB3_NF. The first trawling effort at CB3_NF on August 22nd produced 20 staghorn sculpin in four trawls (sample discarded); however, this day produced 16 sculpin over 7 trawls. The pull handle on the hydraulics motor broke so the crew could not continue sampling and had to stop. The crew pulled the boat and drove back to MLML. Topsmelt and sculpin were measured (total length in mm), weighed (grams), and bagged into composites following the 75% length rule. Fish samples were placed in the -20°C freezer.

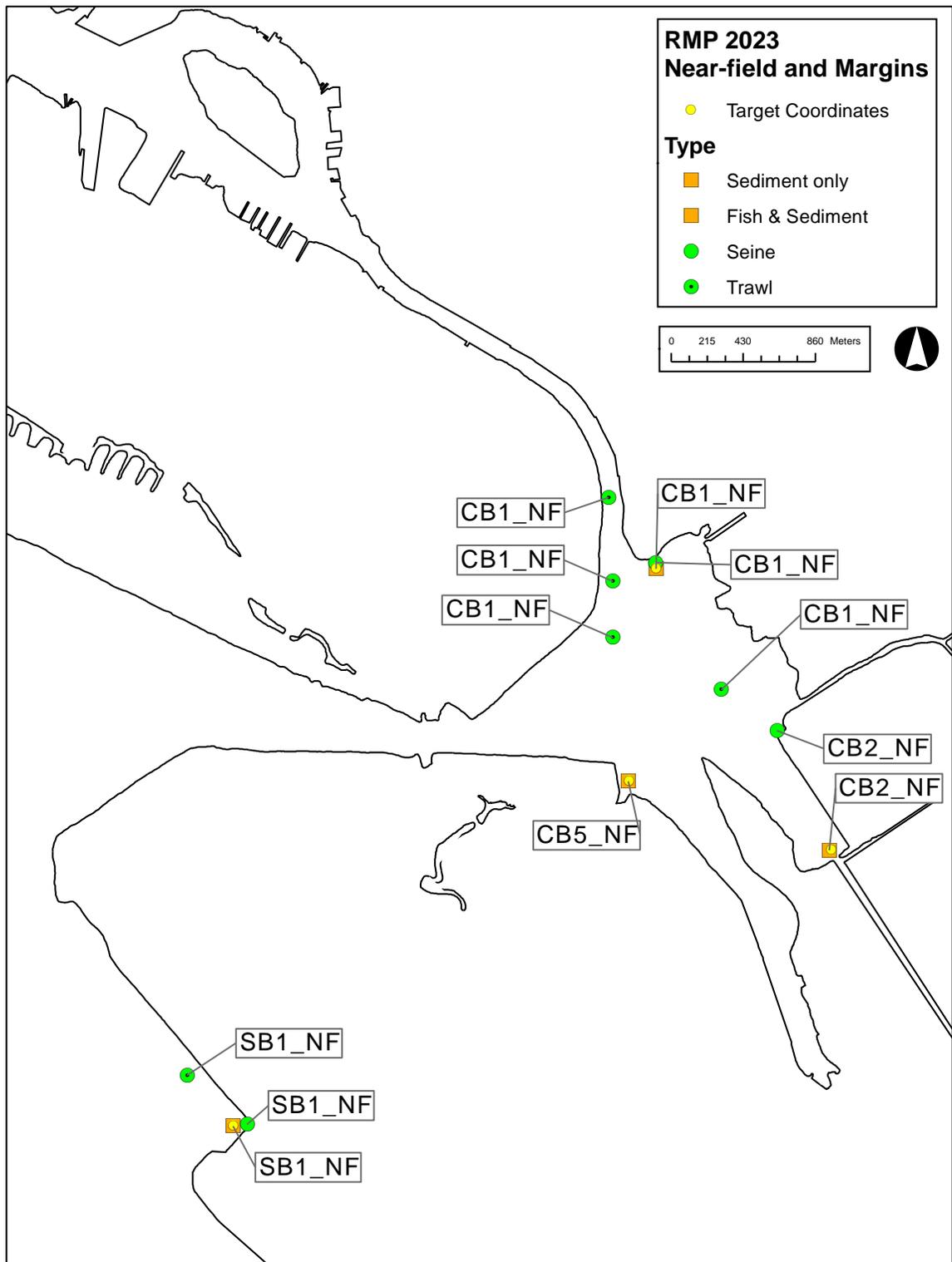


Figure 3: Closer view of sediment and fish sites sampled in San Leandro Bay and Oakland airport in 2023.

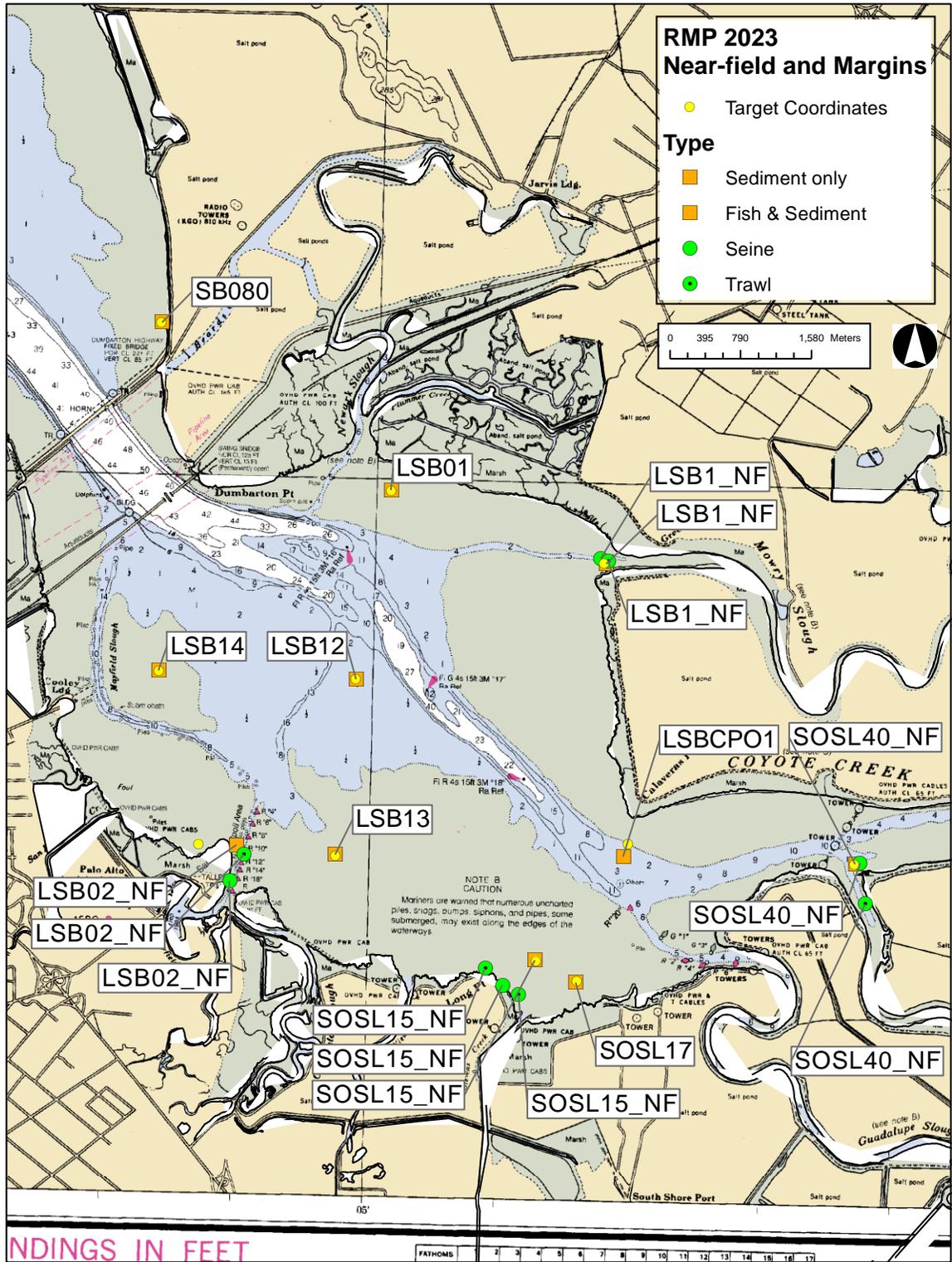


Figure 5: Closer view of sediment and fish sites sampled in Lower South Bay in 2023.

Appendix A: Sample date, collection type, and target and actual latitude and longitude coordinates for sites sampled in the 2023 Near-field and Margins Study. S = sediment, F = topsmelt, FF = topsmelt and staghorn sculpin, Fdup = field duplicate, Fblk = field blank

Station	Name	Date	Type	Sed	Fish	Target Latitude	Target Longitude	Actual Latitude	Actual Longitude	Comments
CB01	Central Bay - Hunter's Point	8/24/2023	S	x		37.722183	-122.382338	37.722116	-122.38253	Transit north of Oyster Point
CB1_NF	Central Bay - San Leandro	8/21/2023, 9/13/2023	FFS	x	TPS comp 1 (81-90), comp 2 (62-80); comp 3 (60-75); 0 SCP	37.758305	-122.221046	37.758267	-122.22105	San Leandro PMU, near East Creek Point; Ran 11 trawls over 3 days with no SCP
CB2_NF	Central Bay - San Leandro	8/21/2023, 9/13/2023	FS	x	TPS comp 1 (76-90), comp 2 (63-78); comp 3 (63-79)	37.743406	-122.208720	37.74335	-122.20885	San Leandro PMU, near Arrowhead Marsh Pier. Seined and cast netted near walking bridge with no luck. Seined cove between San Leandro Channel and Damon Slough where caught TPS in 2016.
CB3_NF	Central Bay - Richmond	8/22/2023, 9/14/2023	FFS	x	TPS comp 1 (80-90), comp 2 (65-80); comp 3 (60-78); SCP comp 1 (n=16, 115-150)	37.913188	-122.364571	37.9131	-122.3645333	Richmond PMU, Across Harbor Channel from Port of Richmond Eng. One very slippery place to seine at lower tide due to rocky shoreline everywhere. 11 seines for TPS. 6 trawls for SCP over 3 hours.
CB4_NF	Central Bay - Richmond	8/22/2023, 9/14/2023	FS	x	TPS comp 1 (60-85), comp 2 (n=19, 81- 90); comp 3 (0 fish)	37.922523	-122.373298	37.922617	-122.373267	Richmond PMU, Upsteam Santa Fe Channel near opening into yacht clubs. One place (old narrow launch ramp to seine due to rocky shoreline and boat slips. 15 seines with last 5 seines producing 0 fish. Tons of smaller (<60 mm TL fish).
CB41	Central Bay - San Quentin	8/22/2023	S	x		37.925958	-122.492777	37.9258	-122.492867	Transit to near Paradise Cove
CB5_NF	Central Bay - San Leandro	8/21/2023	S	x		37.746845	-122.222535	37.746817	-122.222583	San Leandro PMU, west near 61, Old Earhart Road
CB50	Central Bay - Loch Lomond	8/22/2023	S	x		37.966627	-122.490529	37.966767	-122.490483	Launch Richmond Harbor and transit to near Loch Lomond marina
CB51	Central Bay - Sausalito	8/22/2023	S	x		37.887016	-122.511595	37.88665	-122.5115166	
CB54	Central Bay - Richmond	8/22/2023	S	x		37.907324	-122.355081	37.907417	-122.354866	Transit back to Richmond Harbor

Station	Name	Date	Type	Sed	Fish	Target Latitude	Target Longitude	Actual Latitude	Actual Longitude	Comments
CB55	Central Bay - Sausalito	8/22/2023	S	x		37.883357	-122.511307	37.883283	-122.511133	Transit to near Sausalito
CB56	Central Bay - Emeryville	8/23/2023	S	x		37.834654	-122.298797	37.834833	-122.299083	Launch Oakland and transit to Emeryville Crescent
LSB01	Lower South Bay	9/5/2023	S	Fdup Fblk		37.498771	-122.081605	37.498817	-122.081617	
LSB02_NF	Lower South Bay	9/7/2023	FFS	x	TPS comp 1(62-81), comp 2 (60-67),comp 3 (60-61); 0 SCP	37.462820	-122.105000	37.462817	-122.1002	LSB site, near PA, near sites for water monitoring
LSB1_NF	Lower South Bay	9/5/2023	FFS	Fdup	TPS comp 1(69-89), comp 2 (64-75),comp 3 (62-69); SCP comp 1 (100-121)	37.491936	-122.054491	37.491867	-122.0542	LSB site, near PA, near sites for water monitoring. This coordinate was incorrectly entered into the ship's GPS as -122.10005
LSB12	Lower South Bay	9/5/2023	S	x		37.479738	-122.085576	37.47975	-122.0855166	
LSB13	Lower South Bay	9/7/2023	S	x		37.461927	-122.087627	37.462067	-122.0877	
LSB14	Lower South Bay	9/5/2023	S	x		37.480159	-122.110521	37.480167	-122.110533	
LSBCPO1	Lower South Bay	9/7/2023	S	x		37.463720	-122.050673	37.462483	-122.05125	Site too shallow to access at a 6.6 ft high tide. Sample collected 147 m from target on same mud flat.
RC1_NF	South Bay - Redwood City	8/29/2023	FS	x	TPS comp 1(77-90), comp 2 (67-80),comp 3 (60-67)	37.495550	-122.218317	37.49555	-122.218283	SS/RC PMU
SB051	South Bay - SFO airport	8/25/2023	S	Fdup Fblk		37.601745	-122.361652	37.6019	-122.36185	Broken BPA Field Blank jar, opened while sampling and then bagged as-is.
SB077	South Bay - Steinberger	8/29/2023	S	x		37.545150	-122.221617	37.545117	-122.22215	
SB078	South Bay - Dumbarton Bridge	8/29/2023	S	x		37.508237	-122.139372	37.508283	-122.139367	
SB079	South Bay - S. San Mateo Bridge	9/6/2023	S	x		37.577170	-122.166783	37.577183	-122.166817	
SB080	South Bay - Dumbarton Bridge	8/29/2023	S	x		37.515164	-122.111170	37.515183	-122.111083	Launch Alviso and head to Dumbarton Bridge
SB081	South Bay - N. San Mateo Bridge	9/6/2023	S	x		37.645227	-122.158946	37.64525	-122.158817	Launch Oakland or SLB? Transit into bay and head south
SB082	South Bay - Redwood City	8/25/2023	S	x		37.533855	-122.194860	37.533783	-122.19475	Launch Redwood City and head across bay

Station	Name	Date	Type	Sed	Fish	Target Latitude	Target Longitude	Actual Latitude	Actual Longitude	Comments
SB083	South Bay - N. San Mateo Bridge	8/25/2023	S	x		37.580202	-122.263119	37.5801	-122.263152	
SB084	South Bay - S. San Mateo Bridge	9/6/2023	S	x		37.577113	-122.149343	37.57705	-122.1493	
SB085	South Bay - N. San Mateo Bridge	9/6/2023	S	x		37.634876	-122.168061	37.635	-122.168133	
SB1_NF	South Bay - OAK airport	8/21/2023, 9/12/2023	FFS	x	TPS comp 1(84-90), comp 2 (80-89),comp 3 (65-80); 0 SCP	37.727840	-122.248799	37.727833	-122.248833	Oyster Bay/Near OAK Airport. 9 trawls over 2 days produced 1 sculpin. Threw cast nets along rock wall with no luck. 7 beach seines in corner of rock wall with small beach.
SB2_NF	South Bay - Oyster Point	8/25/2023, 9/12/2023	FFS	x	TPS comp 1(84-90), comp 2 (76-86),comp 3 (73-81); SCP comp 1 (105-141)	37.662431	-122.370207	37.662483	-122.3701	Oyster Point Area/Near SFO Outfall. Ran 6 trawls in channel first day. 3 trawls along Brisbane Marina wall and 3 along Oyster Pt Marina wall. 6 successful seines.
SBWT01	South Bay - S. San Mateo Bridge	9/6/2023	S	x		37.592323	-122.162320	37.592367	-122.162333	
SOSL15_NF	Lower South Bay	9/7/2023	FFS	x	TPS comp 1(69-90), comp 2 (60-70),comp 3 (60-71); 0 SCP	37.451780	-122.062000	37.45185	-122.06215	Extreme Lower South Bay, near Steven's Creek, near sites for water monitoring
SOSL17	South Bay Sloughs	9/7/2023	S	x		37.449831	-122.056795	37.449733	-122.056933	Launch Alviso
SOSL40_NF	Lower South Bay	9/5/2023	FFS	Fblk	TPS comp 1(76-90), comp 2 (67-80),comp 3 (62-69); SCP comp 1 (100-125)	37.462120	-122.022000	37.498817	-122.081617	Extreme Lower South Bay, near sloughs, near sites for water monitoring
SS1_NF	South Bay - Steinberger	8/29/2023	FFS	x	TPS comp 1(75-90), comp 2 (69-84),comp 3 (69-80); 0 SCP	37.529194	-122.240756	37.52915	-122.24085	SS/RC PMU
SS2_NF	South Bay - Steinberger	8/29/2023	S	x		37.506970	-122.245265	37.5069	-122.2452	SS/RC PMU

Fdup = Field duplicate, collect two separate 2-liter tubs

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Fblk = Field blank

Appendix B: Analytical jar weights for each StationCode, Fish species, and Composite created in the 2023 Near-field and Margins Study. Comp = composite number, Rep = replicate number, g = grams

StationCode	Fish	Analyses	Comp	Rep	CompositeID	Field Weight (g)	PFAS Jar Target (g)	PCB Jar Target (g)	ARCH Jar Target (g)	Lab Duplicate
CB1_NF	Topsmelt (TPS)	PFAS, PCB	1	1	23RMPNF-CB1_NF-TTPS1	116.71	30.73	52.62	27.16	double PFAS and PCB jars
CB1_NF	Topsmelt (TPS)	PFAS, PCB	2	1	23RMPNF-CB1_NF-TTPS2	67.39	16.63	26.97	22.77	
CB1_NF	Topsmelt (TPS)	PFAS, PCB	3	1	23RMPNF-CB1_NF-TTPS3	47.15	17.04	27.49	-	
CB2_NF	Topsmelt (TPS)	PFAS, PCB	1	1	23RMPNF-CB2_NF-TTPS1	108.37	31.06	40.00	35.01	
CB2_NF	Topsmelt (TPS)	PFAS, PCB	2	1	23RMPNF-CB2_NF-TTPS2	67.05	15.19	26.37	23.6	
CB2_NF	Topsmelt (TPS)	PFAS, PCB	3	1	23RMPNF-CB2_NF-TTPS3	60.81	13.05	23.56	22.42	
CB3_NF	Sculpin (SCP)	PFAS	1	1	23RMPNF-CB3_NF-TSCP1	365.64	274.24	no	85.82	double PFAS jar
CB3_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-CB3_NF-TTPS1	118.78	59.64	no	55.25	
CB3_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-CB3_NF-TTPS2	72.12	23.48	no	45.94	
CB3_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-CB3_NF-TTPS3	52.83	20.11	no	29.01	
CB4_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-CB4_NF-TTPS1	70.10	30.75	no	37.02	
CB4_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-CB4_NF-TTPS2	82.18	33.96	no	44.37	
LSB02_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-LSB02_NF-TTPS1	50.18	24.12	no	27.12	
LSB02_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-LSB02_NF-TTPS2	33.97	30.57	no	-	
LSB02_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-LSB02_NF-TTPS3	27.76	26.65	no	-	
LSB1_NF	Sculpin (SCP)	PFAS	1	1	23RMPNF-LSB1_NF-TSCP1	238.57	122.46	no	99.29	

StationCode	Fish	Analyses	Comp	Rep	CompositeID	Field Weight (g)	PFAS Jar Target (g)	PCB Jar Target (g)	ARCH Jar Target (g)	Lab Duplicate
LSB1_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-LSB1_NF-TTPS1	89.81	48.64	no	40.70	
LSB1_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-LSB1_NF-TTPS2	55.02	23.26	no	28.38	
LSB1_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-LSB1_NF-TTPS3	46.67	17.56	no	27.77	
RC1_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-RC1_NF-TTPS1	128.77	74.79	no	51.24	double PFAS jar
RC1_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-RC1_NF-TTPS2	73.37	30.43	no	41.18	
RC1_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-RC1_NF-TTPS3	43.98	20.87	no	20.79	
SB1_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-SB1_NF-TTPS1	142.67	56.88	no	82.63	
SB1_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-SB1_NF-TTPS2	117.36	44.39	no	68.635	
SB1_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-SB1_NF-TTPS3	76.67	31.04	no	40.60	
SB2_NF	Sculpin (SCP)	PFAS	1	1	23RMPNF-SB2_NF-TSCP1	504.95	259.16	no	241.63	double PFAS jar
SB2_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-SB2_NF-TTPS1	127.57	63.52	no	60.73	
SB2_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-SB2_NF-TTPS2	102.23	45.14	no	55.17	
SB2_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-SB2_NF-TTPS3	83.83	42.68	no	35.84	
SOSL15_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-SOSL15_NF-TTPS1	70.05	27.11	no	38.88	
SOSL15_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-SOSL15_NF-TTPS2	44.62	21.70	no	21.08	
SOSL15_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-SOSL15_NF-TTPS3	39.39	12.15	no	24.19	
SOSL40_NF	Sculpin (SCP)	PFAS	1	1	23RMPNF-SOSL40_NF-TSCP1	278.99	172.63	no	108.91	
SOSL40_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-SOSL40_NF-TTPS1	108.52	33.07	no	62.60	

StationCode	Fish	Analyses	Comp	Rep	CompositeID	Field Weight (g)	PFAS Jar Target (g)	PCB Jar Target (g)	ARCH Jar Target (g)	Lab Duplicate
SOSL40_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-SOSL40_NF-TTPS2	67.88	28.56	no	35.87	
SOSL40_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-SOSL40_NF-TTPS3	48.03	18.19	no	27.45	
SS1_NF	Topsmelt (TPS)	PFAS	1	1	23RMPNF-SS1_NF-TTPS1	111.52	50.42	no	56.02	
SS1_NF	Topsmelt (TPS)	PFAS	2	1	23RMPNF-SS1_NF-TTPS2	93.93	45.47	no	45.46	
SS1_NF	Topsmelt (TPS)	PFAS	3	1	23RMPNF-SS1_NF-TTPS3	80.89	41.96	no	36.30	