

PFAS Synthesis, Science and Monitoring Strategy

Diana Lin, PhD

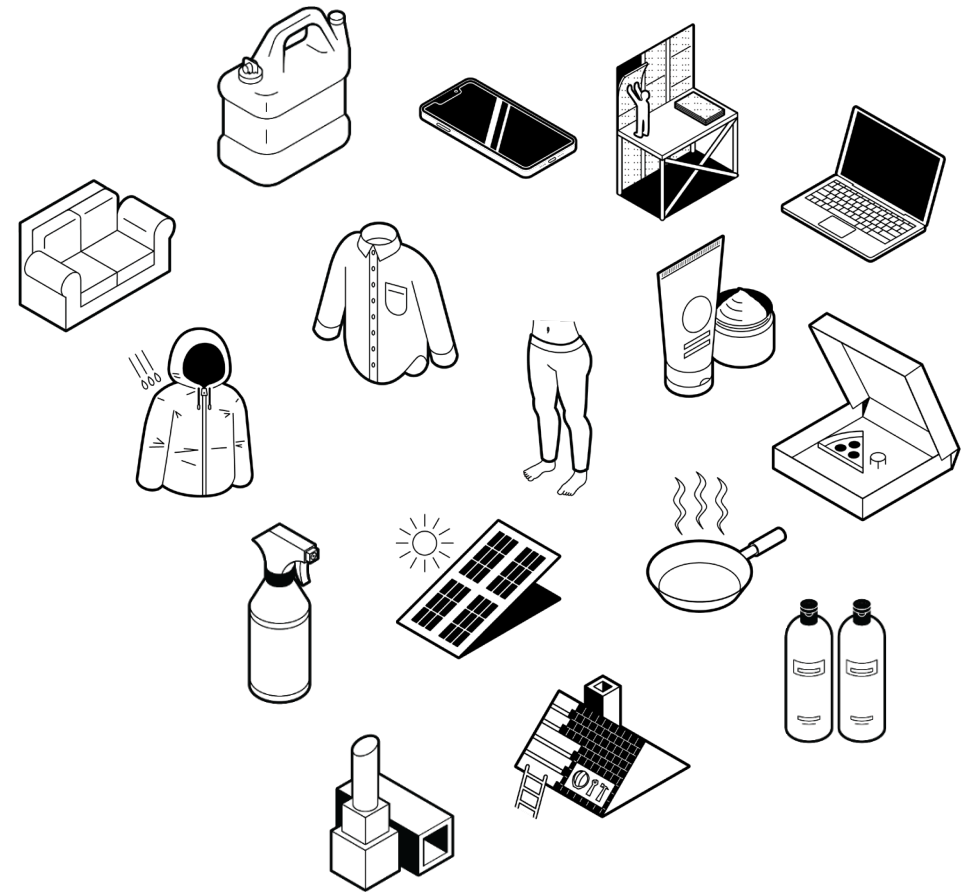
Miguel Méndez, Ezra Miller, Kayli Paterson, Jennifer Sun, Jennifer Dougherty, Martin Trinh, Adam Wong, Noah Rudko, Sierra Garcia, Rebecca Sutton

RMP Annual Meeting, October 21, 2026



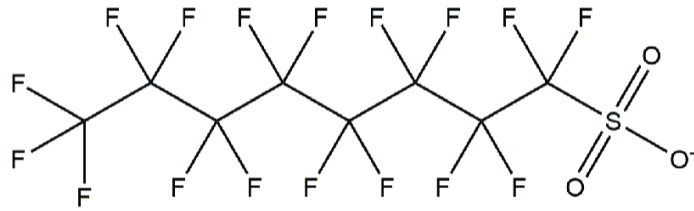
Per- and Polyfluoroalkyl Substances (PFAS)

- “Forever chemicals”
- Over 15,000 known compounds
- Highly persistent
- Bioaccumulative
- Toxic to aquatic life and humans

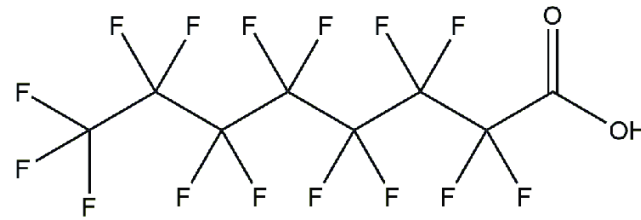


PFAS Chemistry

Long-chain

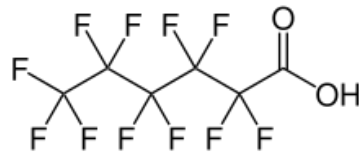


PFOS

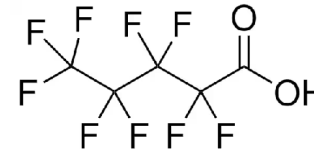


PFOA

Short-chain

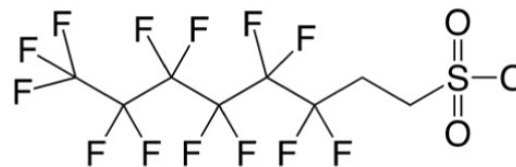


PFHxA



PFPeA

Precursors



6:2 FTS



“Precursor”



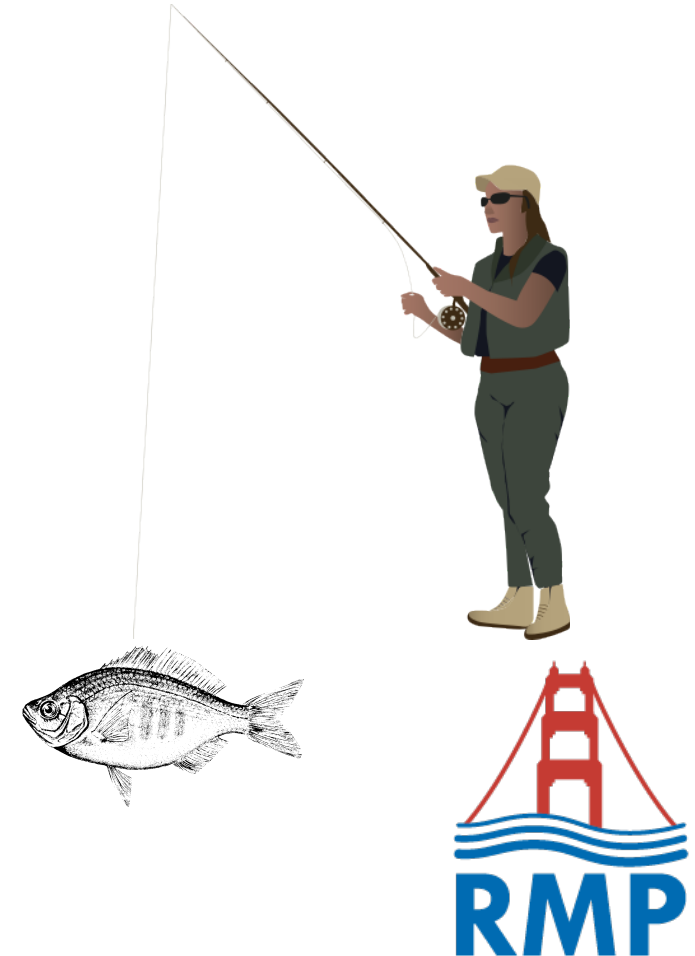
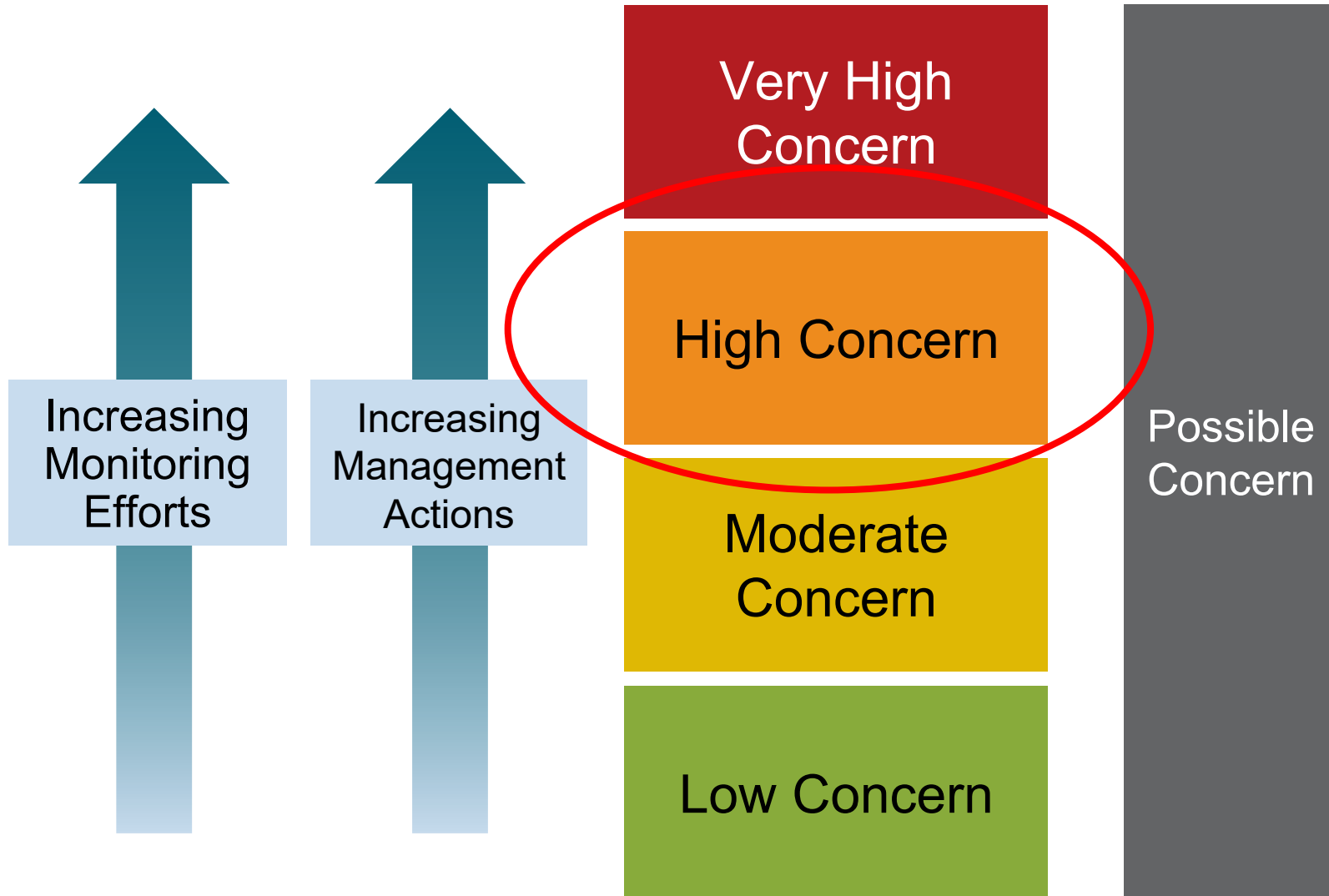
“Short”



“Long”



PFAS are of 'High Concern'



Final Report



RMP
REGIONAL MONITORING
PROGRAM FOR WATER QUALITY
IN SAN FRANCISCO BAY

sfei.org/rmp

PFAS in San Francisco Bay: Synthesis and Monitoring Strategy

2026 Revision

Miguel Méndez, Ezra Miller, Kayli Paterson, Jennifer Sun,
Jennifer Dougherty, Martin Trinh, Adam Wong, Sierra
Garcia, Rebecca Sutton, and Diana Lin

San Francisco Estuary Institute

CONTRIBUTION No. 1299 / October 2026

Recent Management Actions Targeting PFAS Source Products

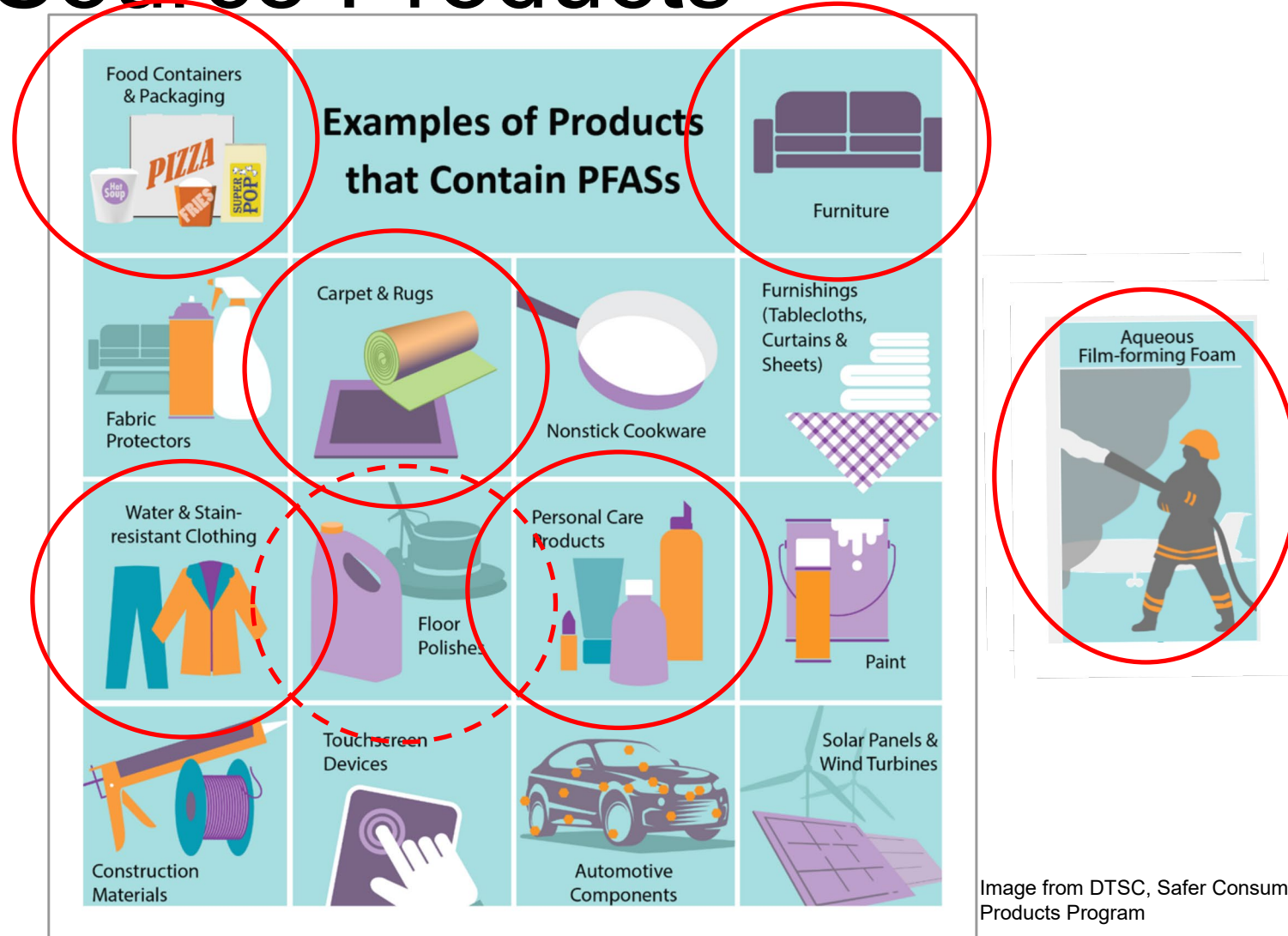


Image from DTSC, Safer Consumer Products Program

Current Project

PFAS Sources to Solutions:

Identifying and Preventing PFAS Pollution
in San Francisco Bay

PROPOSAL TO THE EPA WATER QUALITY IMPROVEMENT FUND 2023
SUBMITTED BY THE SAN FRANCISCO ESTUARY INSTITUTE with

Regional Monitoring Program for Water Quality in San Francisco Bay (RMP)
Department of Toxic Substances Control (DTSC)
Bay Area Clean Water Agencies (BACWA)
Bay Area Municipal Stormwater Collaborative (BAMSC) Member Programs
Indiana University Bloomington
University of Toronto



AUGUST 30, 2023

PROPOSAL TO THE EPA WATER QUALITY IMPROVEMENT FUND 2023

Applicant Name: San Francisco Estuary Institute

Address: 4911 Central Ave, Richmond CA 94804

UEI #: MP7VLMFNWEW7

Contact: Rebecca Sutton

Phone Number: (510) 746-7388

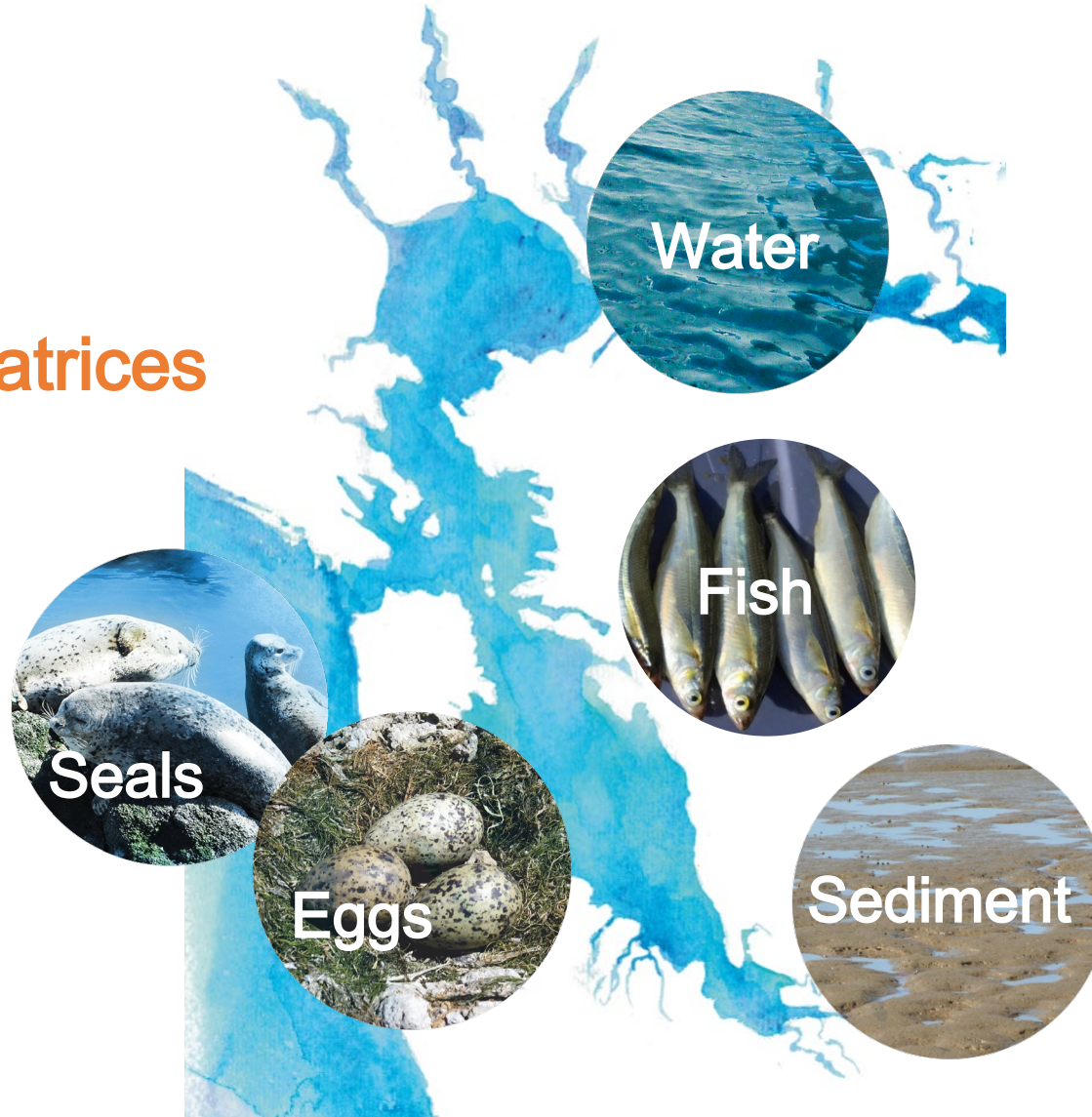
Email Address: rebeccas@sfei.org

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Estuary Institute

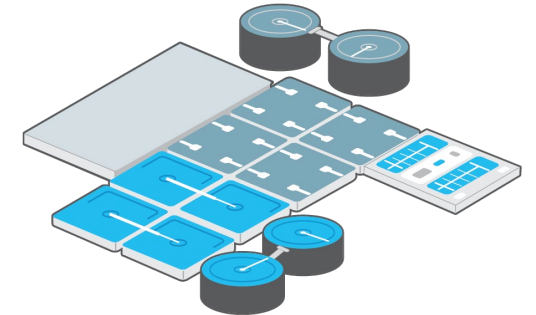


PFAS Synthesis: 2012-2025

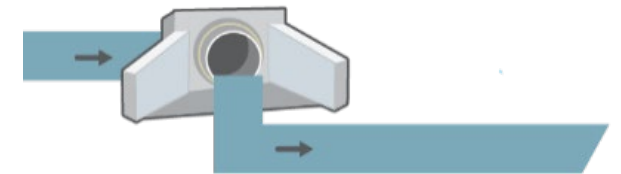
Bay Matrices



Pollution Pathways



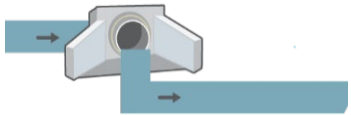
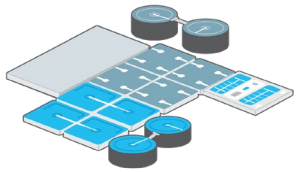
Wastewater Effluent



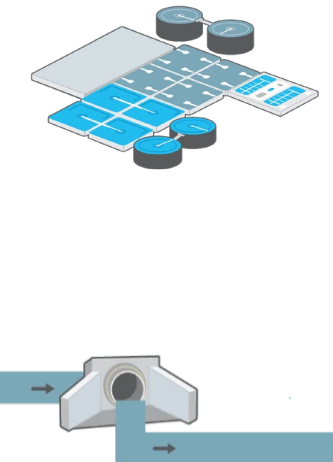
Urban Stormwater Runoff

Wastewater and Stormwater

PFAS Analytes	Effluent (ng/L)	Stormwater (ng/L)
PFOS	4.5 (<0.3–13)	6.6 (<0.4–81)
PFOA	6.0 (3.5–12)	6.9 (<0.4–110)



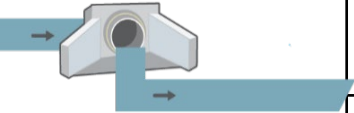
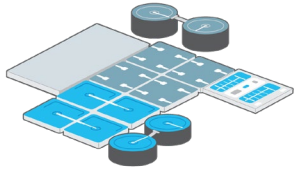
Wastewater and Stormwater



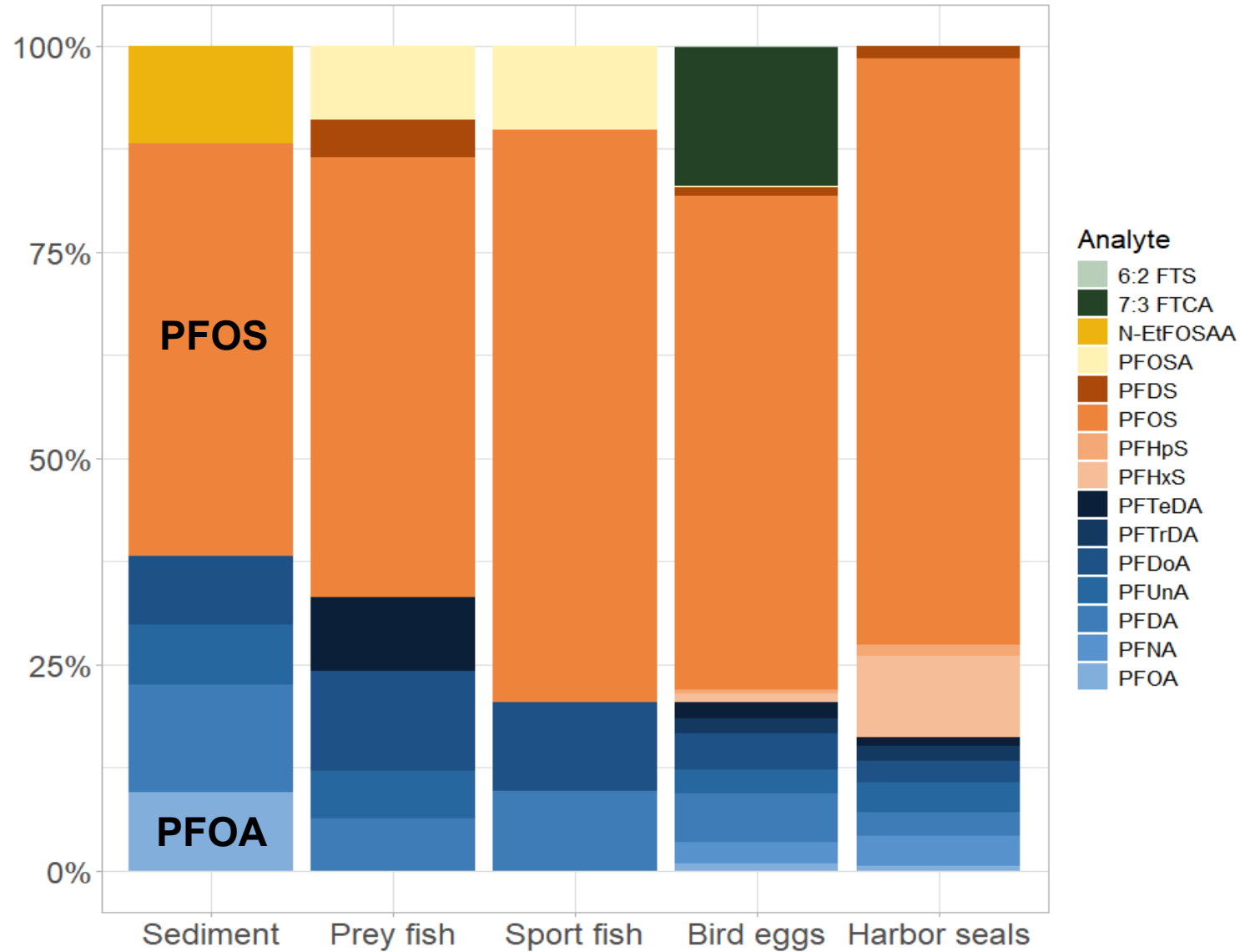
PFAS Analytes	Effluent (ng/L)	Stormwater (ng/L)
PFOS	4.5 (<0.3–13)	6.6 (<0.4–81)
PFOA	6.0 (3.5–12)	6.9 (<0.4–110)
PFHxA	16 (<0.3–30)	7.4 (<0.4–180)
PFPeA	7.7 (2.7–30)	5.7 (<0.4–41)

Wastewater and Stormwater

PFAS Analytes	Effluent (ng/L)	Stormwater (ng/L)	Bay Water (ng/L)
PFOS	4.5 (<0.3–13)	6.6 (<0.4–81)	2.6 (<0.4–20)
PFOA	6.0 (3.5–12)	6.9 (<0.4–110)	1.8 (<0.4–20)
PFHxA	16 (<0.3–30)	7.4 (<0.4–180)	2.5 (<0.4–25)
PFPeA	7.7 (2.7–30)	5.7 (<0.4–41)	2.0 (<0.8–28)



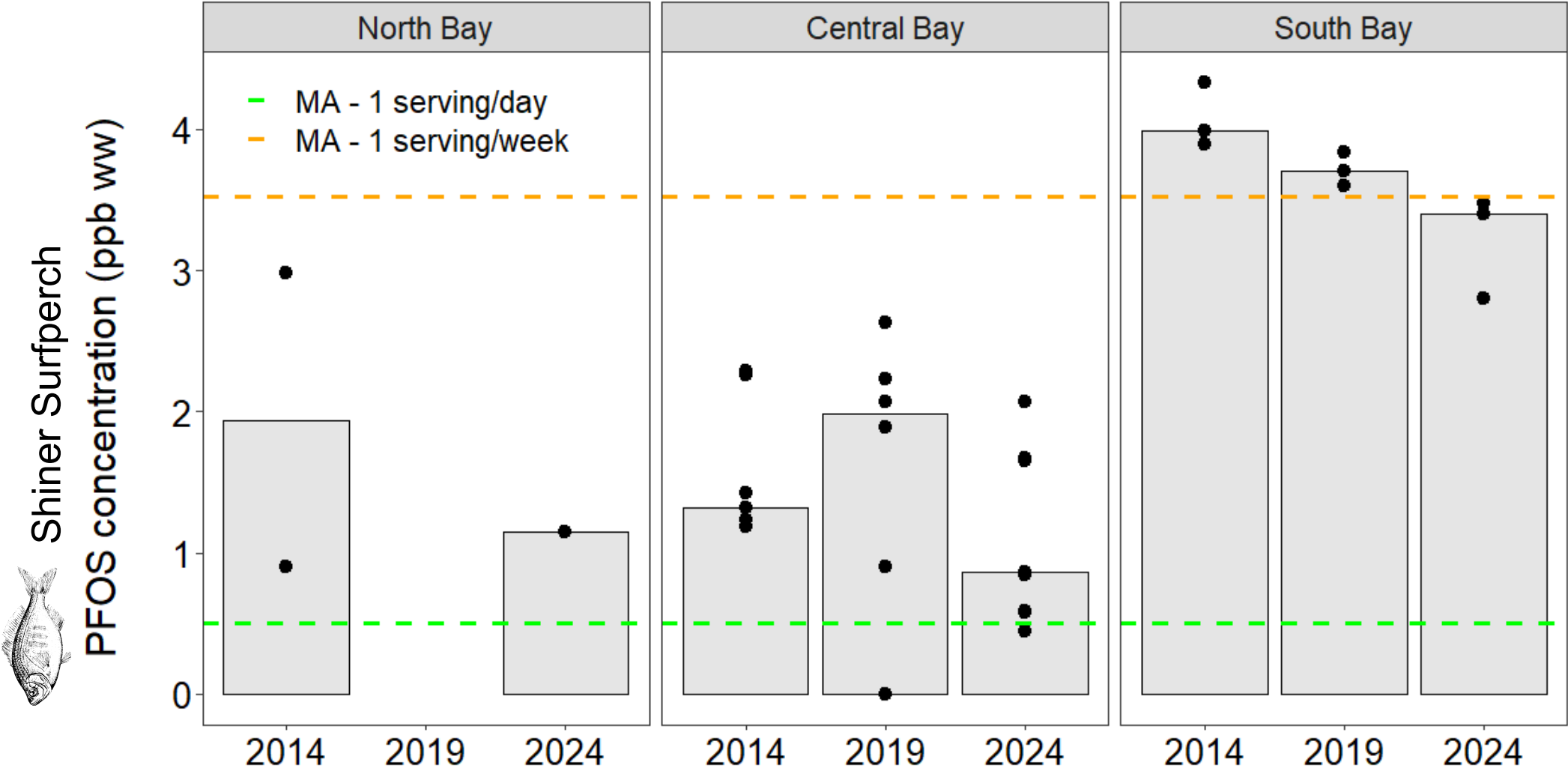
Bay Sediment and Biota



Elevated PFOS in South Bay

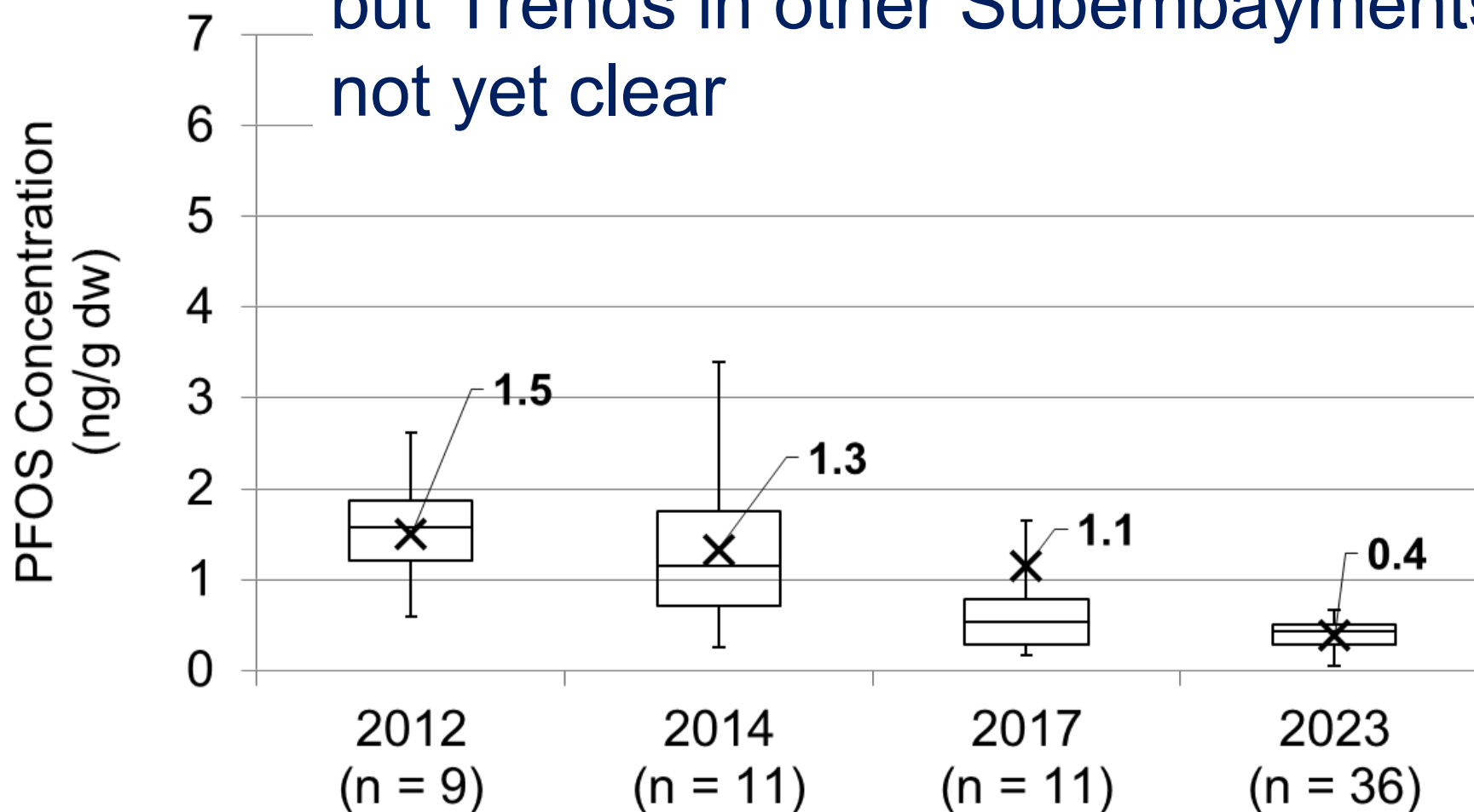


Elevated PFOS concentrations in South Bay

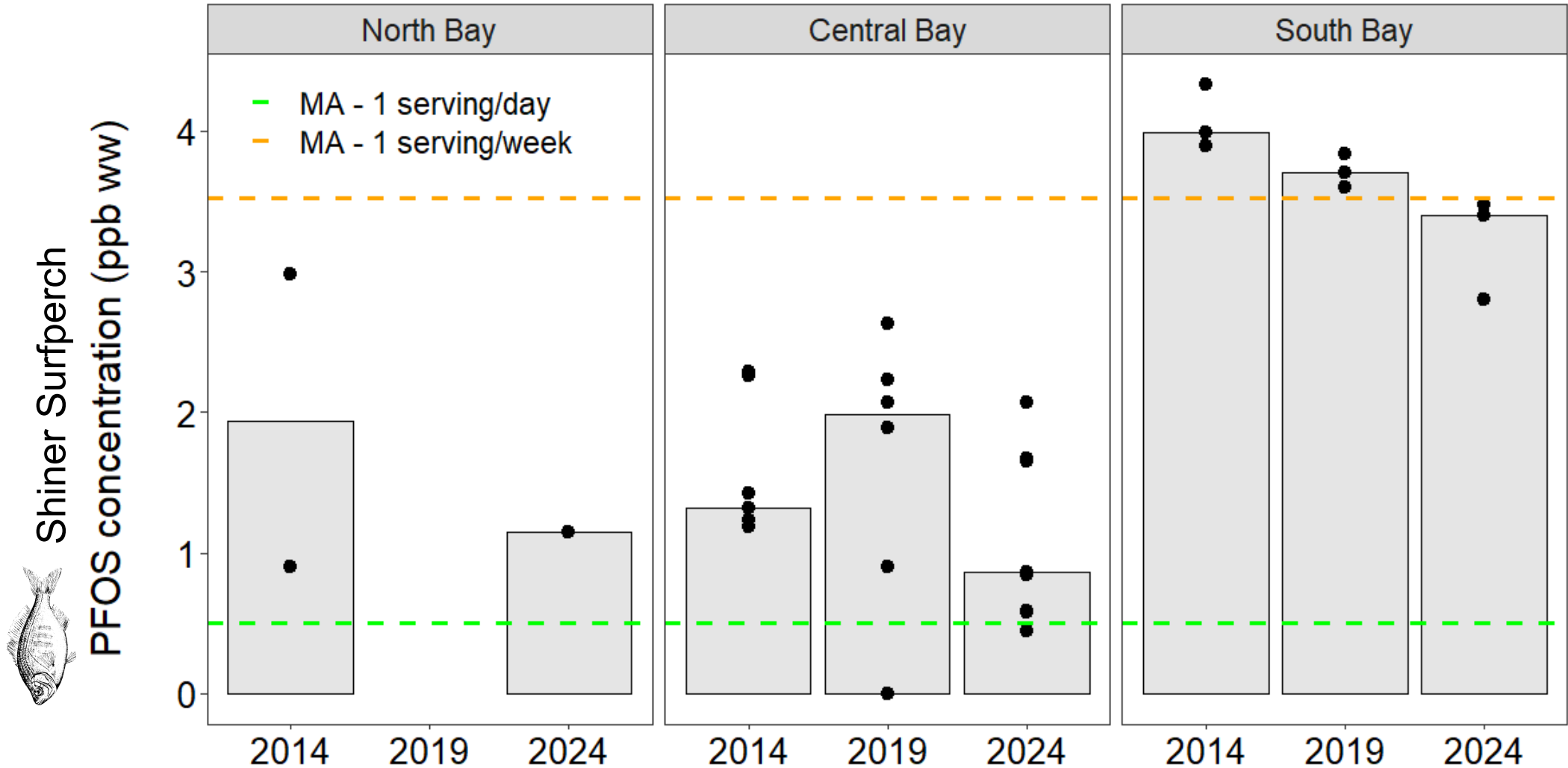


PFOS Decreasing in South Bay

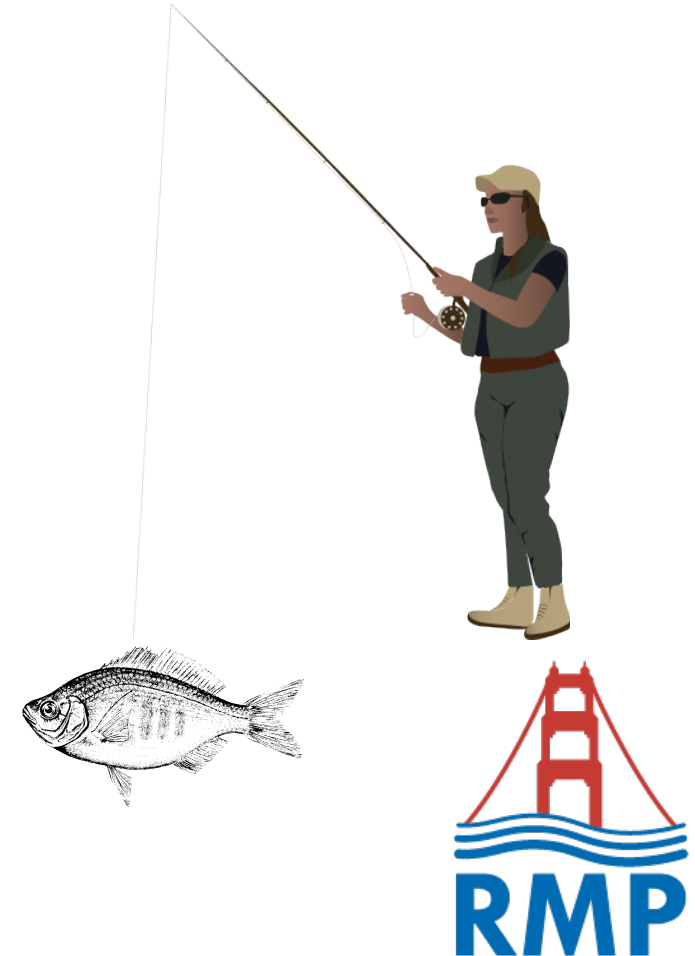
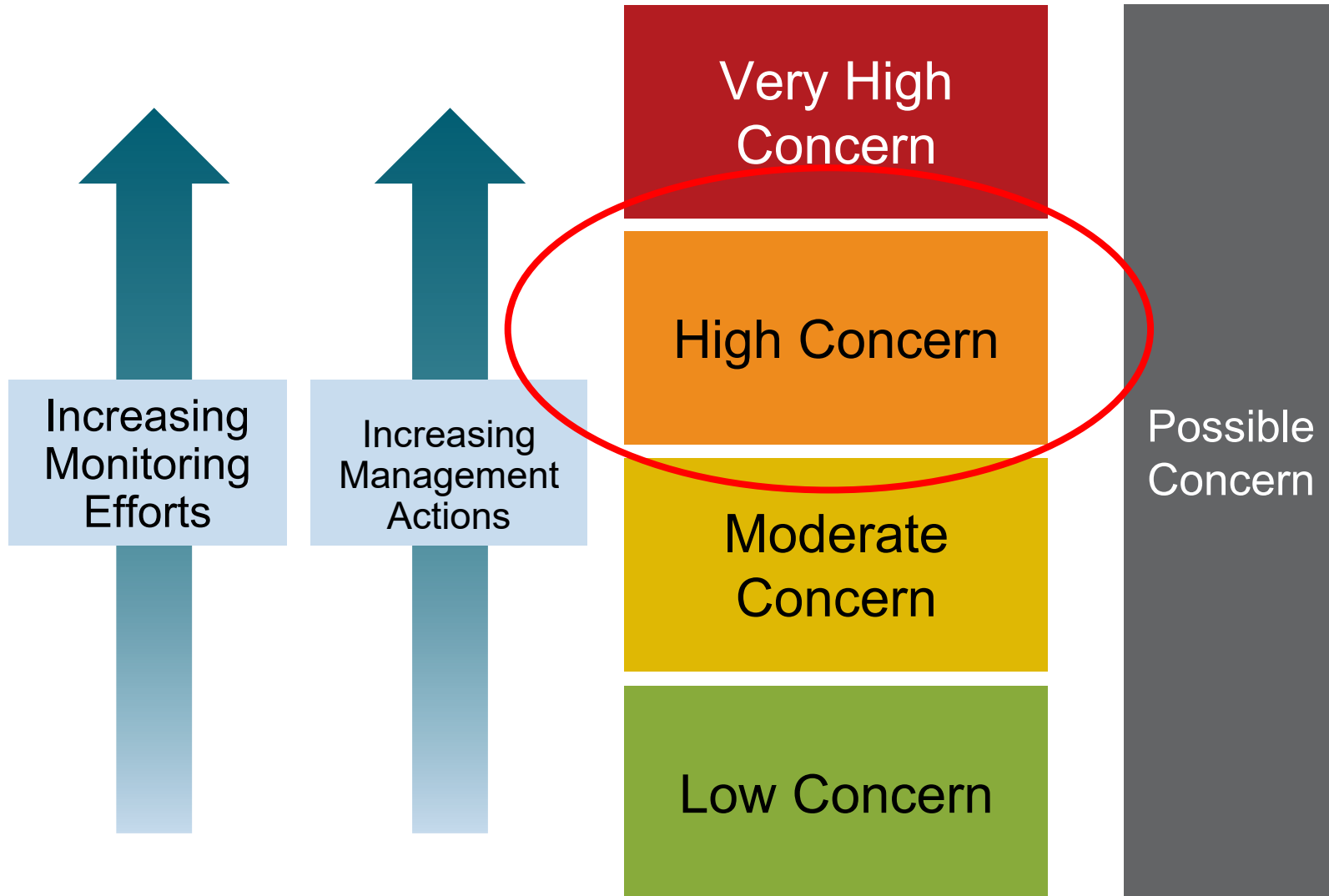
but Trends in other Subembayments are not yet clear



PFOS in Fish Drive Risks



PFAS are of 'High Concern'

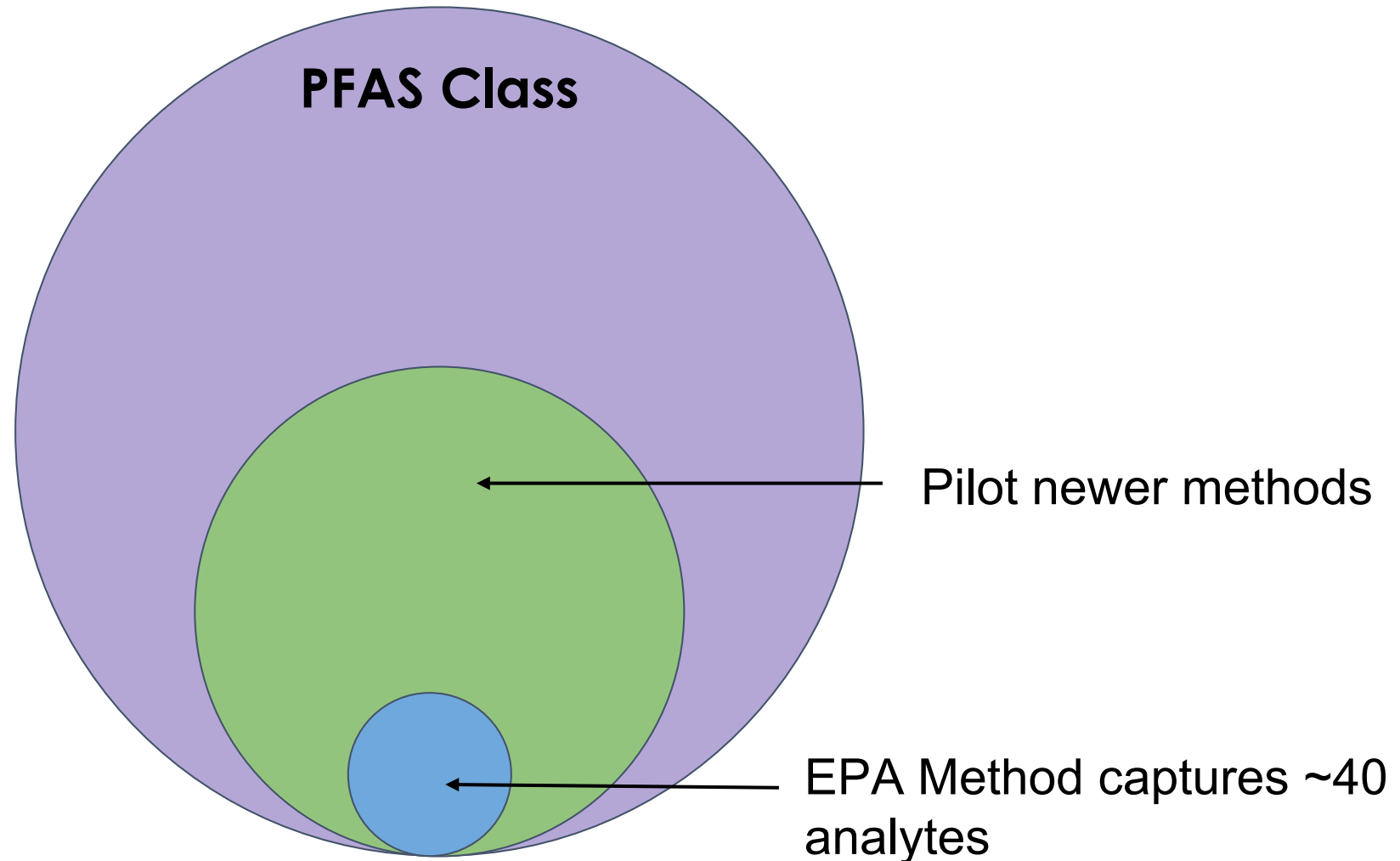


Science and Strategy (~5 years)



Anticipatory monitoring

1. Utilize both standardized and complementary analytical methods



2. Continue evaluating temporal and geographic trends

- Increase sport fish monitoring to every 3 years
- Increase prey fish monitoring



PROTECTING BAY FISHERS

Fish Monitoring, Consumption Surveys, and Exposure Reduction to Support Management of PFAS, PCBs, and Other Contaminants in San Francisco Bay

PROPOSAL TO THE EPA SAN FRANCISCO BAY GRANT PROGRAM SUBMITTED BY THE SAN FRANCISCO ESTUARY INSTITUTE with

San Francisco Bay Regional Water Quality Control Board
State Water Resources Control Board
Sequoia Foundation

San José State University Research Foundation
SGS AXYS Analytical Services Ltd.

All Positives Possible

Regional Monitoring Program for Water Quality in San Francisco Bay (RMP)

AND SUPPORTED BY

Bay Area Clean Water Agencies • California Department of Public Health •
California Office of Environmental Health Hazard Assessment



MARCH 3, 2026

PROPOSAL TO THE EPA SAN FRANCISCO BAY GRANT PROGRAM

Applicant Name: San Francisco Estuary Institute

Address: 4911 Central Ave, Richmond, CA 94804

UEI #: MP7VLMFNWEW7

Contact: Jay Davis

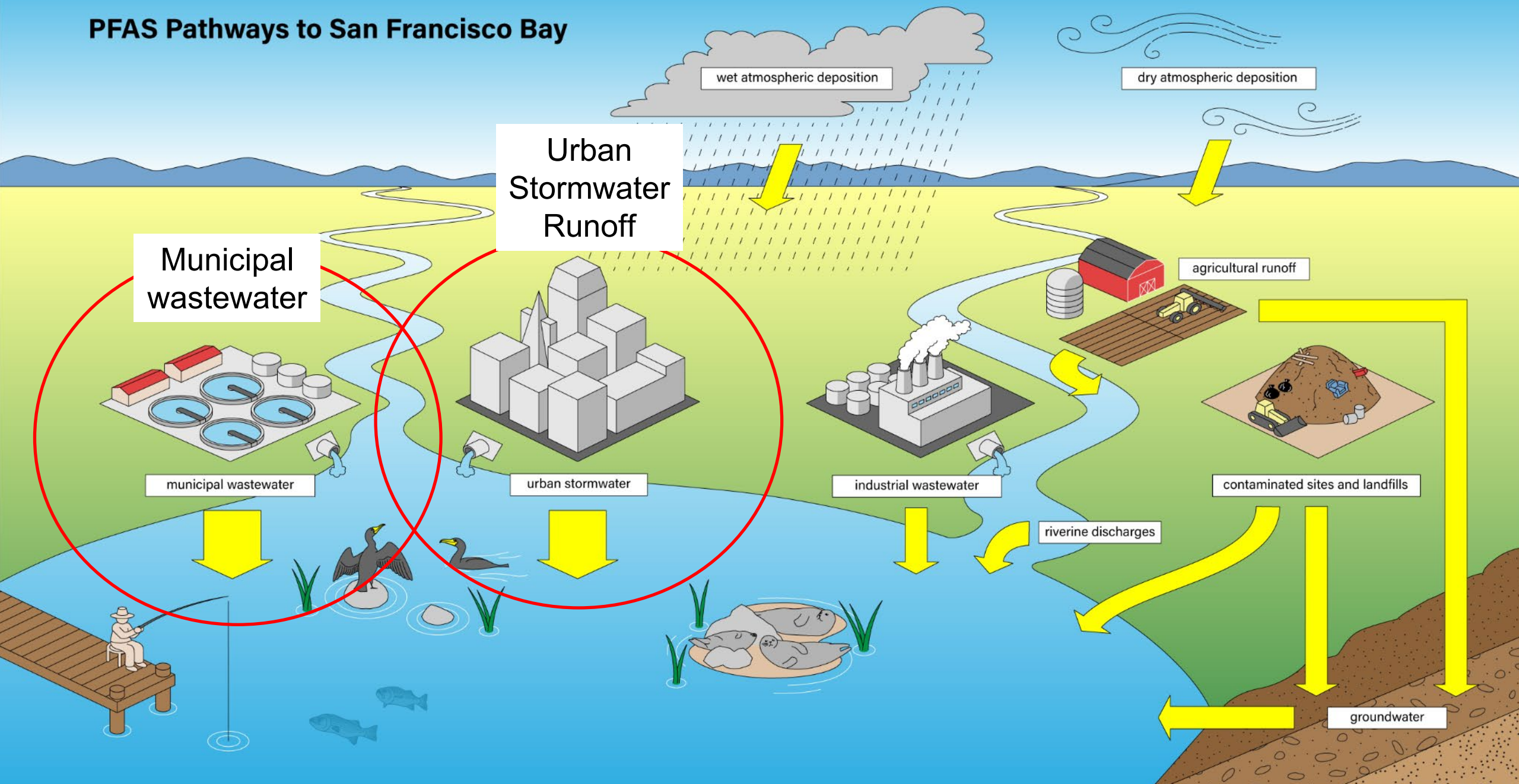
Phone Number: 510-746-7368

Email Address: jay@sfei.org

SFEI San Francisco
Estuary Institute

3. Continue pathways monitoring

PFAS Pathways to San Francisco Bay



4. Develop models to evaluate in-Bay recovery scenarios



- Stormwater loads
- In-Bay mass balance
- Bioaccumulation



Final Report

Fact Sheet
Coming Soon!



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Key Takeaways

- The RMP has an excellent foundation for PFAS monitoring in the Bay
- Some improvements observed in South Bay, which remains the most contaminated region
- By 2030: Expanding methods, monitoring, and modeling



Report



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