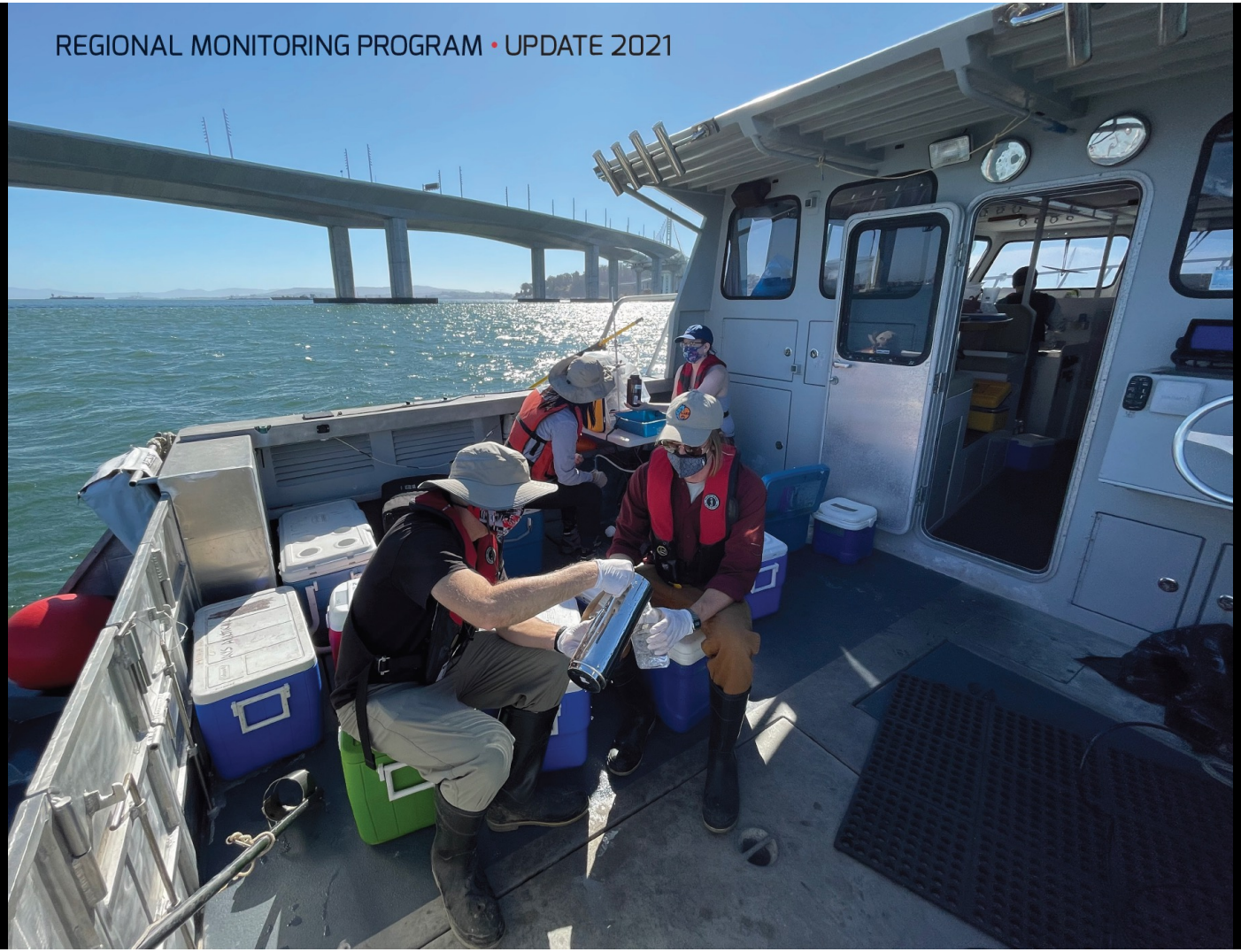
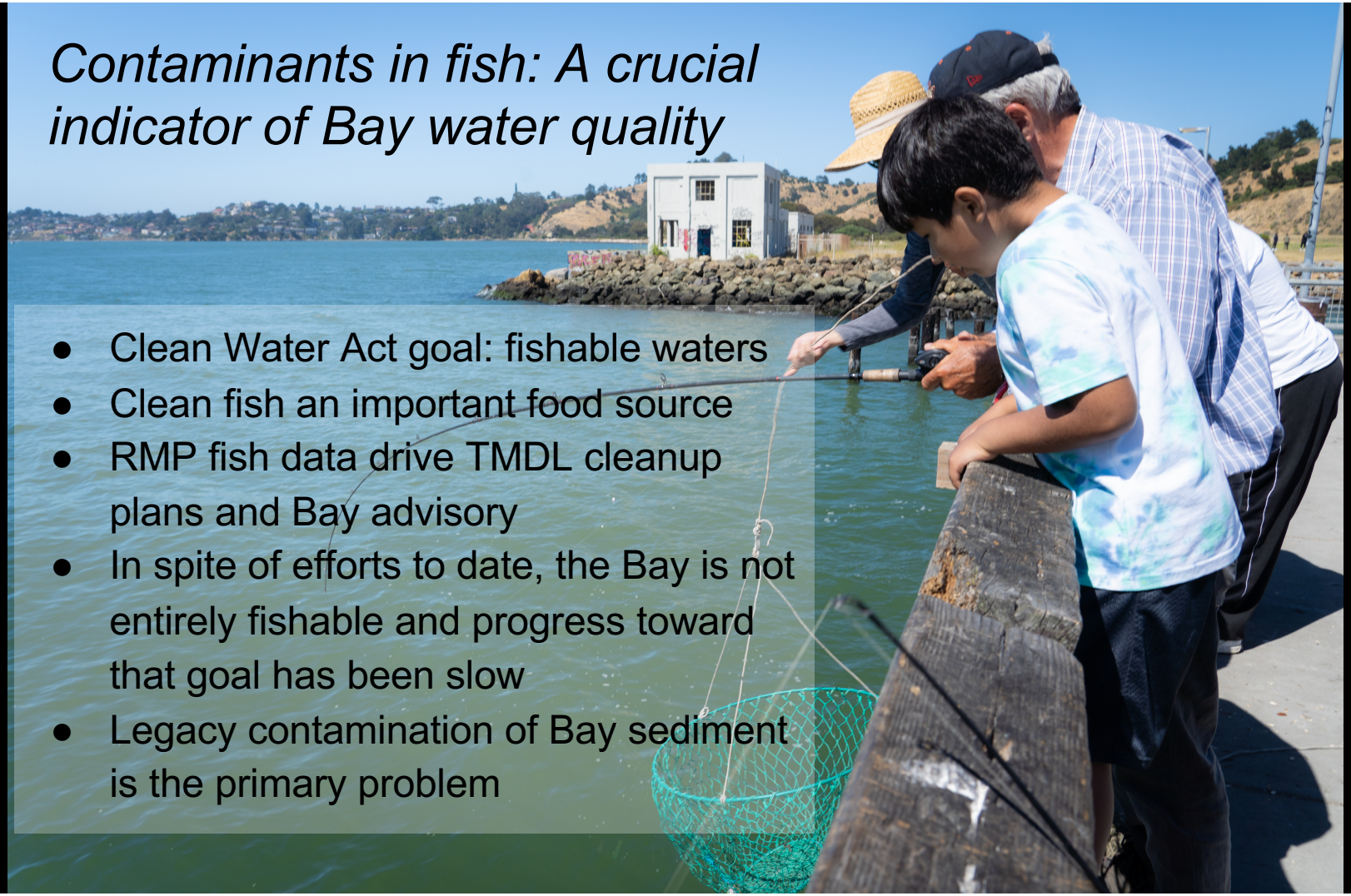

REGIONAL MONITORING PROGRAM • UPDATE 2021

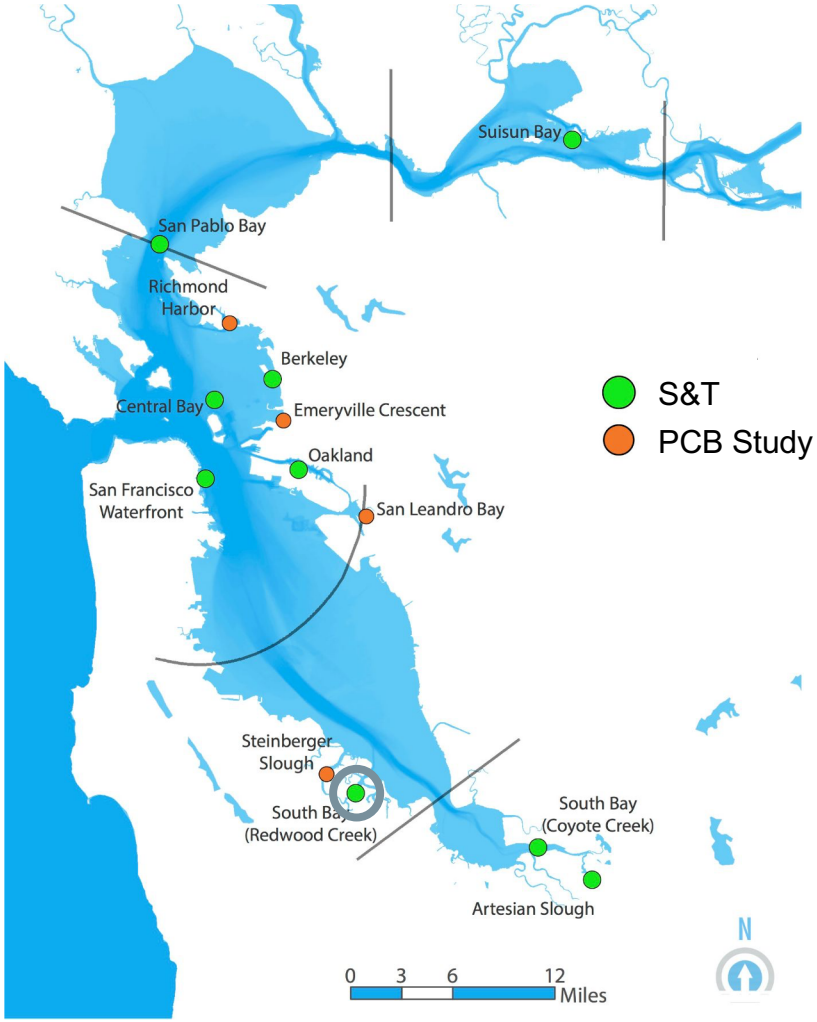
Contaminants in fish: A crucial indicator of Bay water quality



- Clean Water Act goal: fishable waters
- Clean fish an important food source
- RMP fish data drive TMDL cleanup plans and Bay advisory
- In spite of efforts to date, the Bay is not entirely fishable and progress toward that goal has been slow
- Legacy contamination of Bay sediment is the primary problem

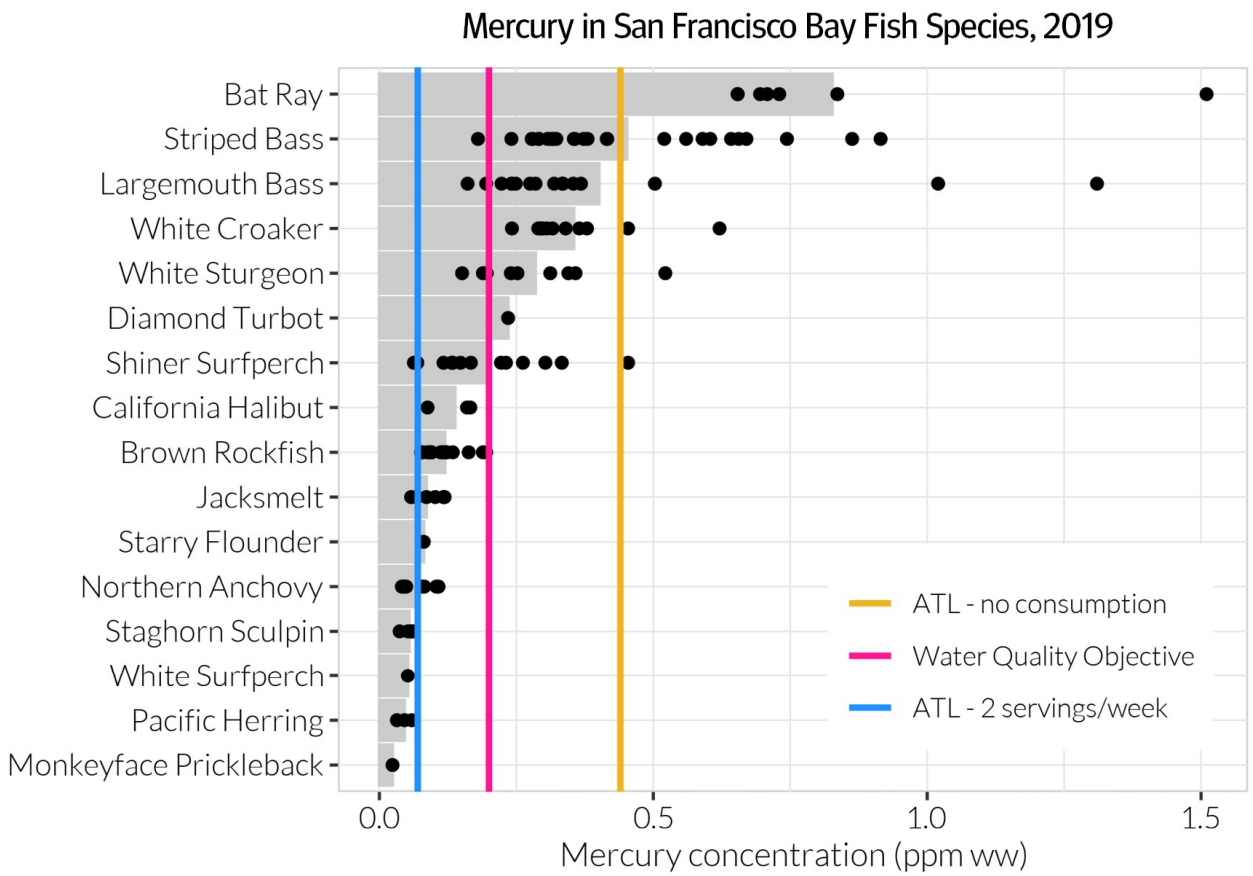
The Bay has one of the best fish contamination monitoring programs anywhere

- 8th round of Bay sport fish monitoring in 2019
- 5 year cycle
- 13 locations
- 16 species
- 1,306 fish
- 152 samples
- Many contaminants
- BUT there are still gaps



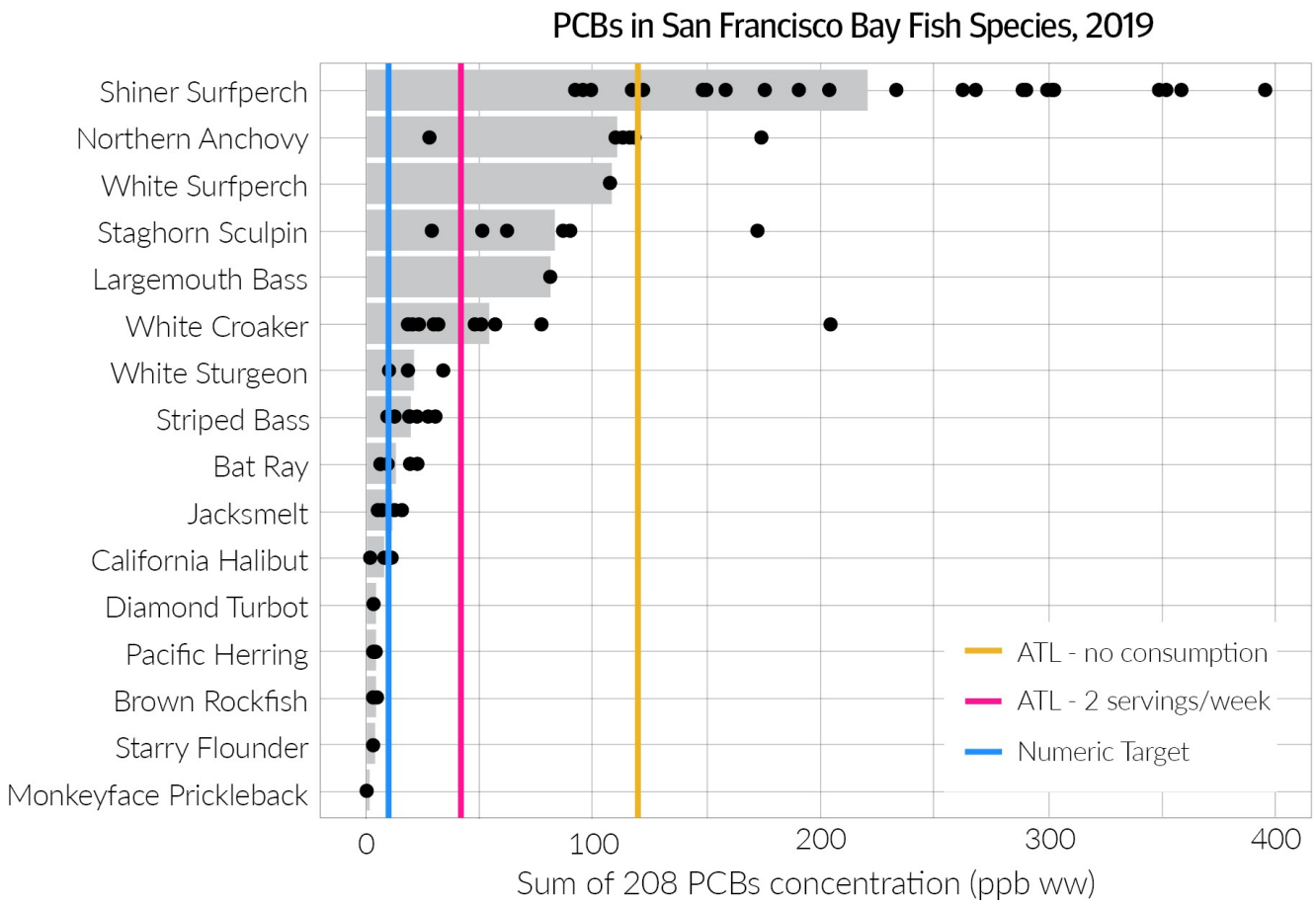
Mercury

- *Many species have average concentrations well above thresholds*
- *Striped bass concentrations haven't budged in* ***50 years***
- *Improvement will be slow due to regional nature of the problem*



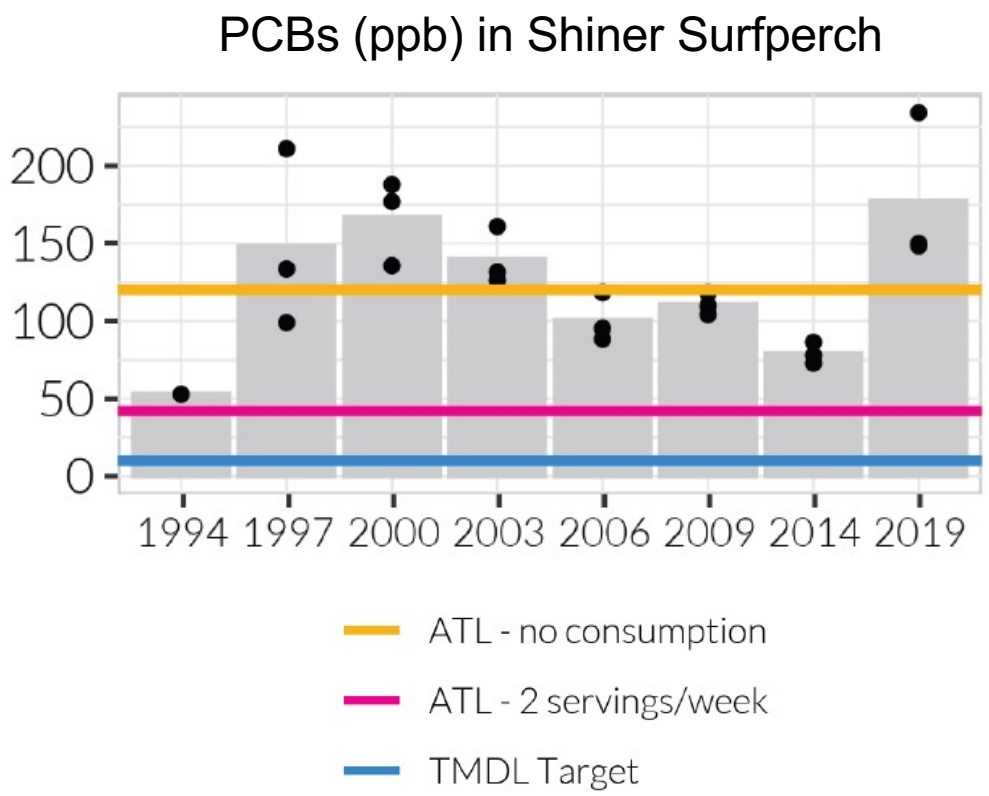
PCBs

- *Many species have average concentrations well above thresholds*



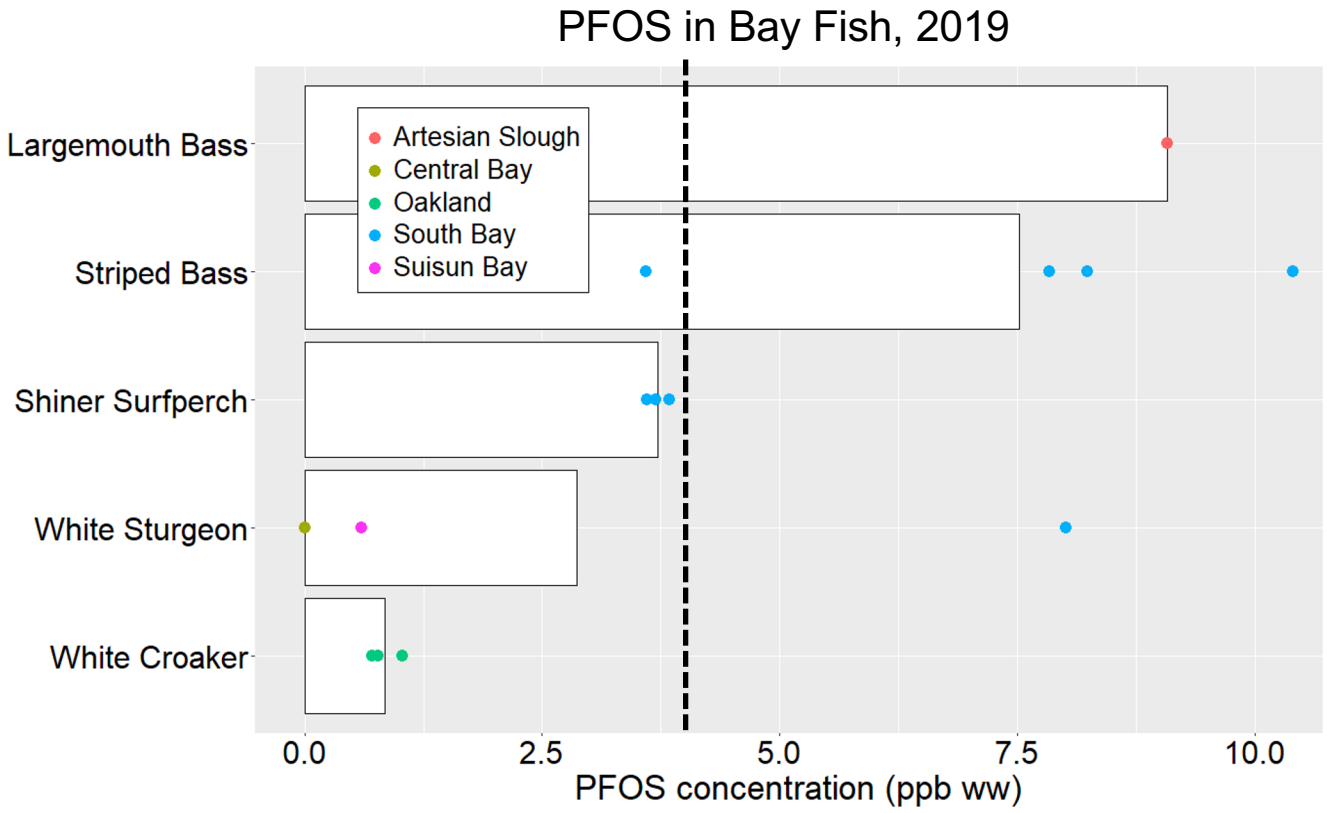
Long-term Trends: Redwood Creek, 1994-2019

- *Only **limited** signs of long-term decline for PCBs*
- *Due to combination of **continuing inputs** and contaminated sediment in Bay margins*
- *Preliminary modeling: controlling inputs will reduce impairment in some situations*
- *Need for robust modeling*



PFOS

- *One of the PFAS "forever chemicals"*
- *Relatively limited dataset*
- *Persisting over time at levels near or above thresholds established by other states*



Threshold shown is from New Jersey: general population, one serving/week - 3.9 ppb ww

Stormwater is a major focus of the RMP (page from the RMP Update)

PROGRAM AREA **UPDATE**

SMALL TRIBUTARY LOADING

BACKGROUND

Pollutants of concern (POCs) in urban stormwater include PCBs, mercury, copper, nutrients, pesticides, contaminants of emerging concern (CECs), and microplastics. To address information needs associated with these POCs, the Small Tributaries Loading Strategy (STLS), first developed in 2009, was updated in 2018 to include a modeling and trends component to help prioritize and coordinate the activities of the RMP and Bay Area Municipal Stormwater Collaborative permittees. STLS studies conducted over the past decade have focused on locating, quantifying, and managing PCBs, mercury, and other pollutants in the urban environment to support management actions.

Going forward, an increasing emphasis will be placed on CECs, along with tracking trends in POC loading, through a combination of monitoring and modeling. Since these emphases were not considered at the time of the last management question update (2015), in May 2021 the Sources, Pathways, and Loadings Workgroup (SPLWG) began discussing the need for a formal update of the management questions that guide the SPLWG.

USES OF PROGRAM AREA DATA FOR MANAGEMENT DECISIONS

- Refining pollutant loading estimates, including CECs, for future policy or management plan updates (collaboration with ECWG)
- Informing provisions of the current and future versions of the Municipal Regional Stormwater Permit (MRP)
- Identifying small tributaries to prioritize for management actions
- Informing decisions on the control measures for reducing pollutant concentrations and loads
- Tracking effectiveness of load reduction in small tributaries
- Estimating sediment loads to the Bay (collaboration with Sediment Workgroup)

RELATION TO PERMIT REQUIREMENTS

Addresses monitoring requirements specified in the Municipal Regional Stormwater Permit

- POC and CEC monitoring
- Wet weather pesticide and toxicity monitoring
- Implementation of control measures to achieve mercury and PCB load reductions
- Assessment of mercury and PCB load reductions from stormwater
- Planning and implementation of green infrastructure to reduce mercury and PCB loads
- Preparation of implementation plan and schedule to achieve TMDL allocations

PRIORITY QUESTIONS

1. What are the loads or concentrations of pollutants of concern from small tributaries to the Bay?
2. Which are the "high-leverage" small tributaries that contribute or potentially contribute most to Bay impairment by pollutants of concern?
3. How are loads or concentrations of pollutants of concern from small tributaries changing on a decadal scale?
4. Which sources or watershed source areas provide the greatest opportunities for reductions of pollutants of concern in urban stormwater runoff?
5. What are the measured and projected impacts of management action(s) on loads or concentrations of pollutants of concern from the small tributaries, and what management action(s) should be implemented in the region to have the greatest impact?

Note: Recent workgroup discussion pointed to the fact that some of these management questions may need revising in relation to changing emphases and greater cross-workgroup collaboration.

A large slate of stormwater studies are underway

- Status and Trends Re-design
- Pollutants of Concern Reconnaissance Monitoring
- PCB Studies in Priority Margin Areas
- Contaminants of Emerging Concern (CECs) in Stormwater
- Watershed Model Development
- Stormwater CEC Monitoring Strategy
- Tire Contaminant Monitoring Strategy
- CEC Modeling Review
- Stormwater Modeling and Monitoring Strategy
- Integrated Watershed-Bay Modeling Strategy
- CEC Stormwater Load Modeling Exploration

For more information

The RMP Update (including a summary article on the 2019 RMP fish monitoring)

- https://www.sfei.org/rmp/update

General information on the RMP

- https://www.sfei.org/programs/sf-bay-regional-monitoring-program

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My son's band's new song (Vampires by Hot Flash Heat Wave)

- https://youtu.be/i384yhdqQ64