



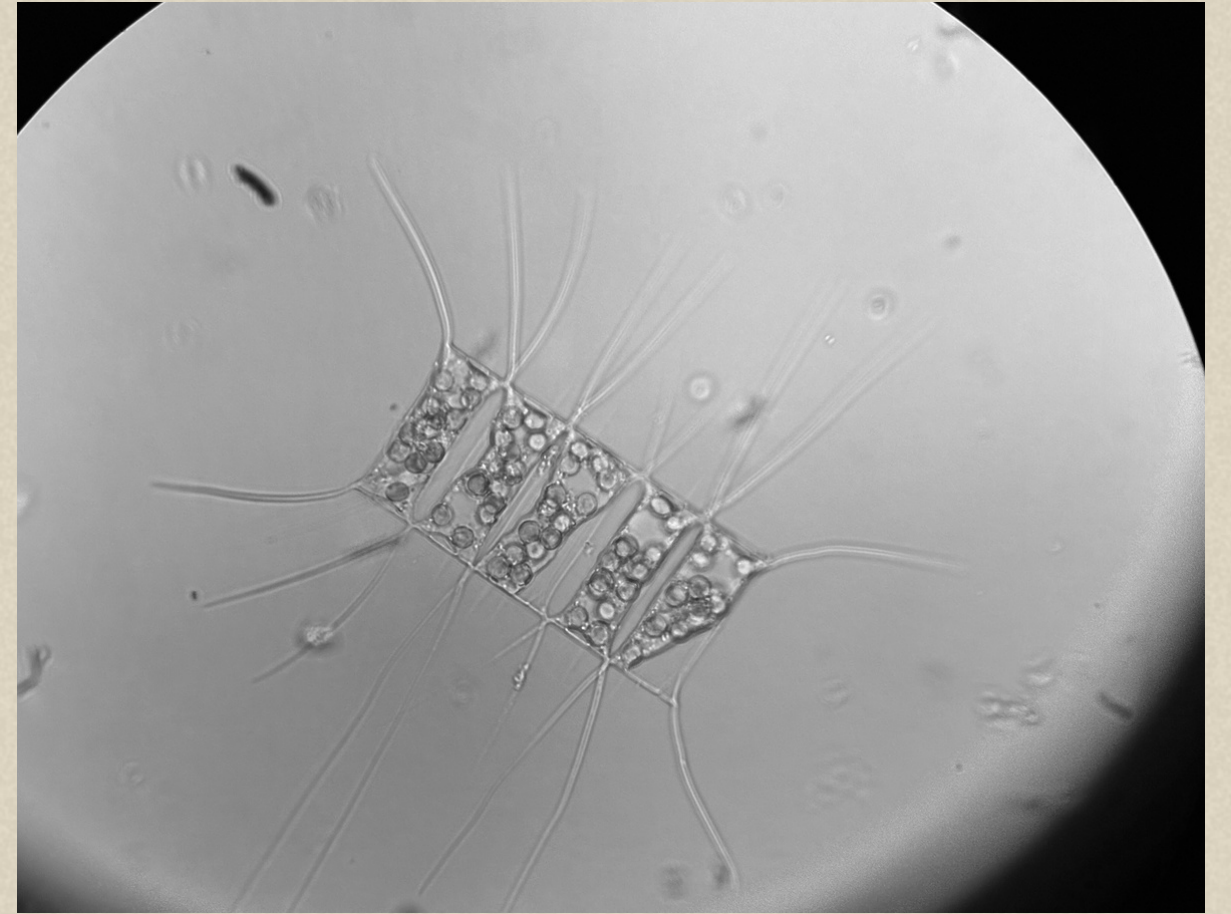
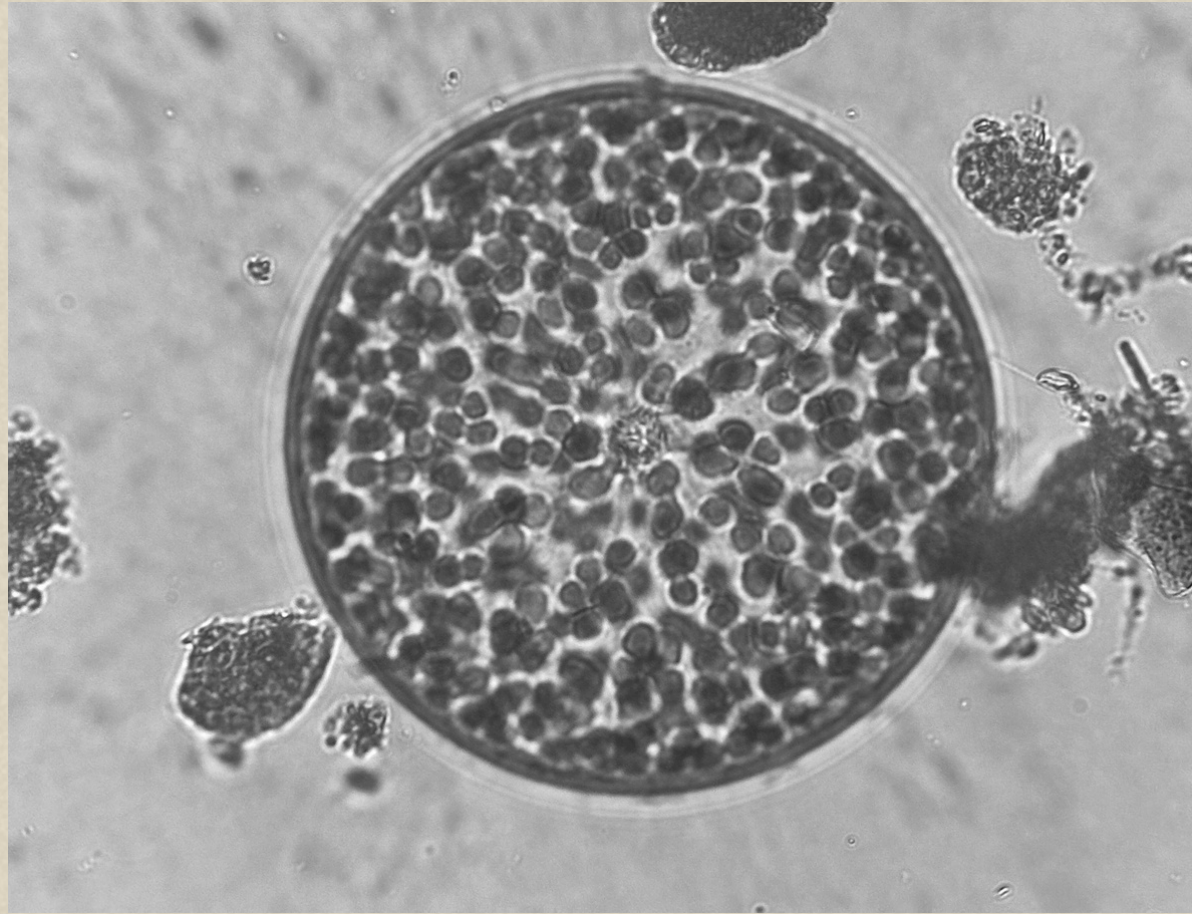
PRESENTED BY: CHERYL PATEL  
FIELD INVESTIGATOR & COMMUNITY SCIENCE COORDINATOR  
SF BAYKEEPER

10\29\2025

# COMMUNITY SCIENCE MONITORING FOR HARMFUL ALGAL BLOOMS IN **SF BAY**

State of the Estuary Conference  
Oakland, California





BACKGROUND

METHODS

RESULTS

NEXT STEPS

# OVERVIEW





ENVIRONMENTAL NON-PROFIT

SCIENCE, LAW, ADVOCACY

HOLDING POLLUTERS ACCOUNTABLE

# BAYKEEPER



# HARMFUL ALGAL BLOOMS

EXCESSIVEGROWTH



NEGATIVE COMMUNITY IMPACT



EXCESSNUTRIENT POLLUTION





# HARMFUL ALGAL BLOOMS

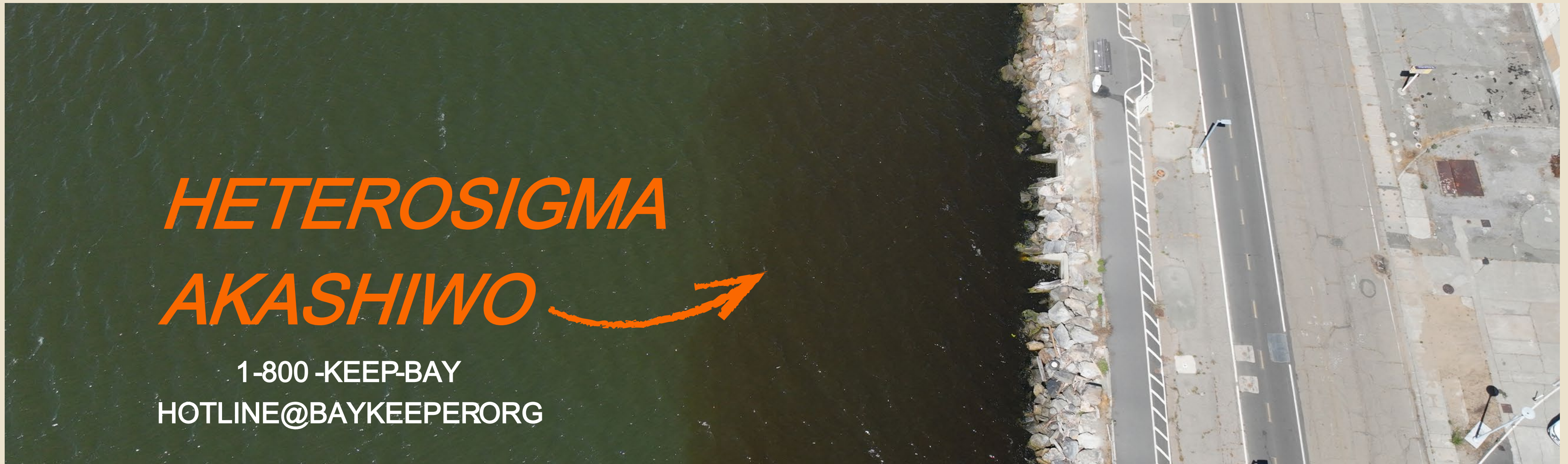
NUTRIENT MGMT STRATEGY

2022 & 2023 HAB EVENTS

COMMUNITY SCIENTISTS

*HETEROSIGMA  
AKASHIWO*

1-800 -KEEP-BAY  
HOTLINE@BAYKEEPERORG





1-800 -KEEP-BAY  
HOTLINE@BAYKEEPERORG

# 2022 SF BAY

## Harmful Algal Bloom



Jan Diamond

### TIMELINE

INITIAL REPORTS FROM  
COMMUNITY MEMBERS  
THROUGH BAYKEEPER  
HOTLINE

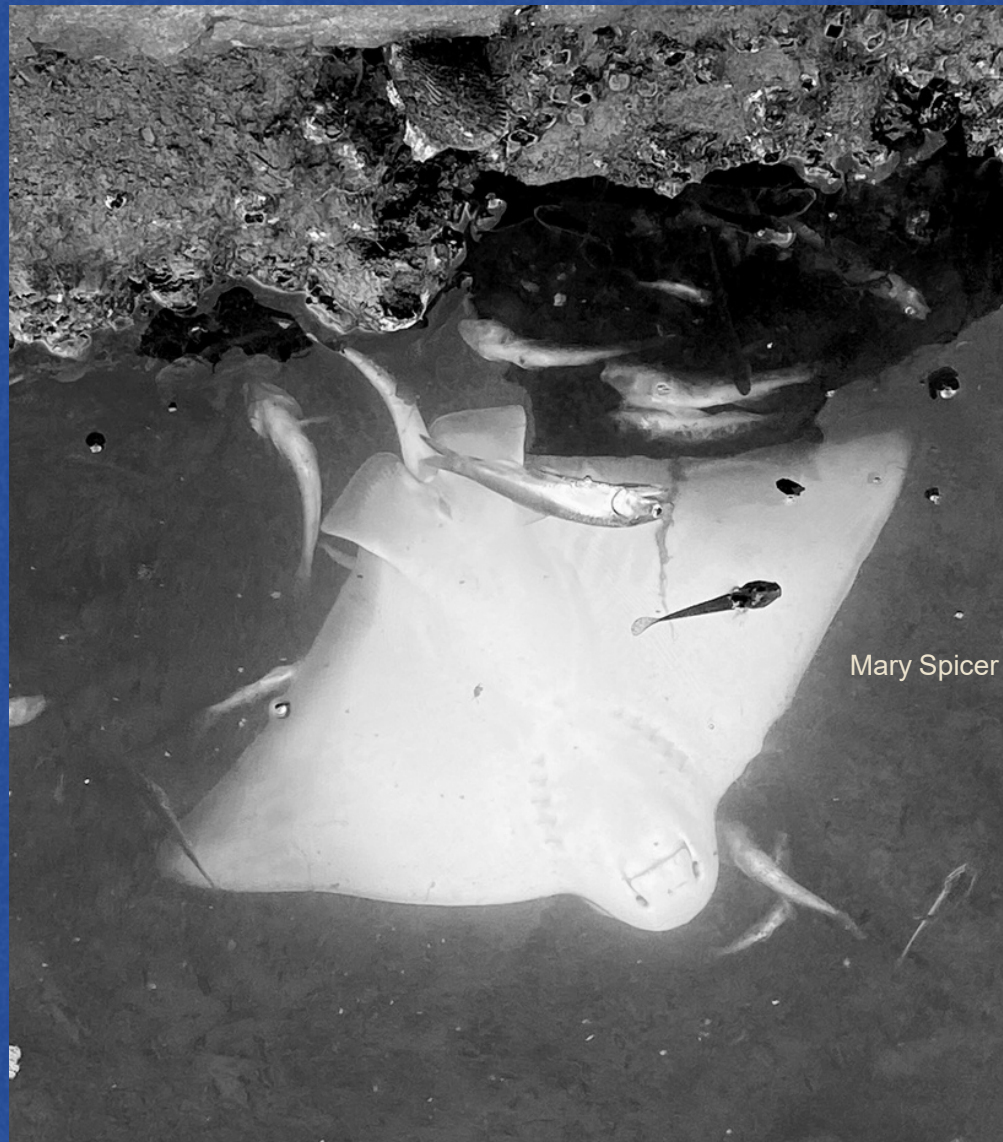
COMMUNITY  
SCIENTISTS SAMPLED  
WATER TO IDENTIFY  
BLOOMING ORGANISM

HOTLINE REPORTS  
OF DEAD FISH ALL  
AROUND SF BAY



# 2022 SF BAY

## Harmful Algal Bloom



### LESSONS

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BETTER  
COORDINATION  
AMONG SF BAY  
REGIONAL AGENCIES

BETTER  
COORDINATION AND  
COMMUNICATION  
WITH PUBLIC



# 2022 SF BAY

## Harmful Algal Bloom

### RESULT

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MONITORING &  
EVENT RESPONSE  
FOR HARMFUL  
ALGAL BLOOMS

COMMUNITY HAB  
MONITORING  
PROGRAM





1-800 -KEEP-BAY  
HOTLINE@BAYKEEPERORG

# WHY community science

HARNESS

PEOPLE POWER



JSF



1-800 -KEEP-BAY  
HOTLINE@BAYKEEPERORG

# WHY community science

ENGAGE

.....

## IMPACTED COMMUNITY



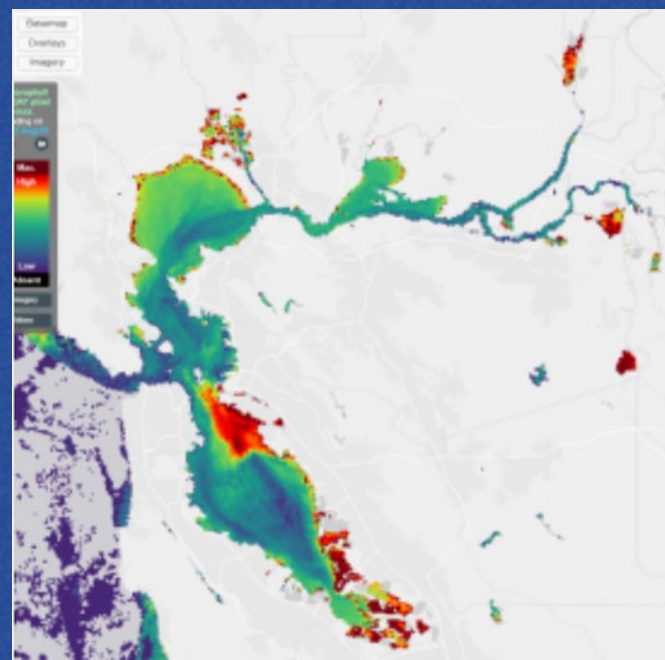
JSF



# WHY community science

ACCESS

## SHALLOW SHORELINES





1-800 -KEEP-BAY  
HOTLINE@BAYKEEPERORG

# WHY community science

ACCESS

.....

# HIDDEN EXPERTISE



JSF



# METHODS

## NOAA'S PHYTOPLANKTON MONITORING NETWORK

VOLUNTEER TRAINING

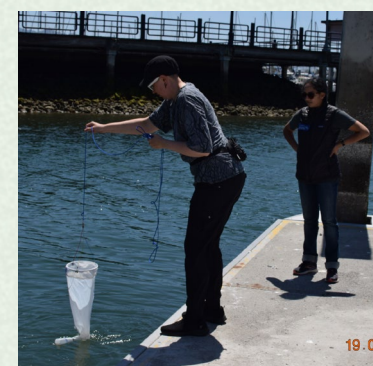
REPORT ELEVATED TAXA

FIELDWORK

QA/QC

MICROSCOPE ANALYSIS

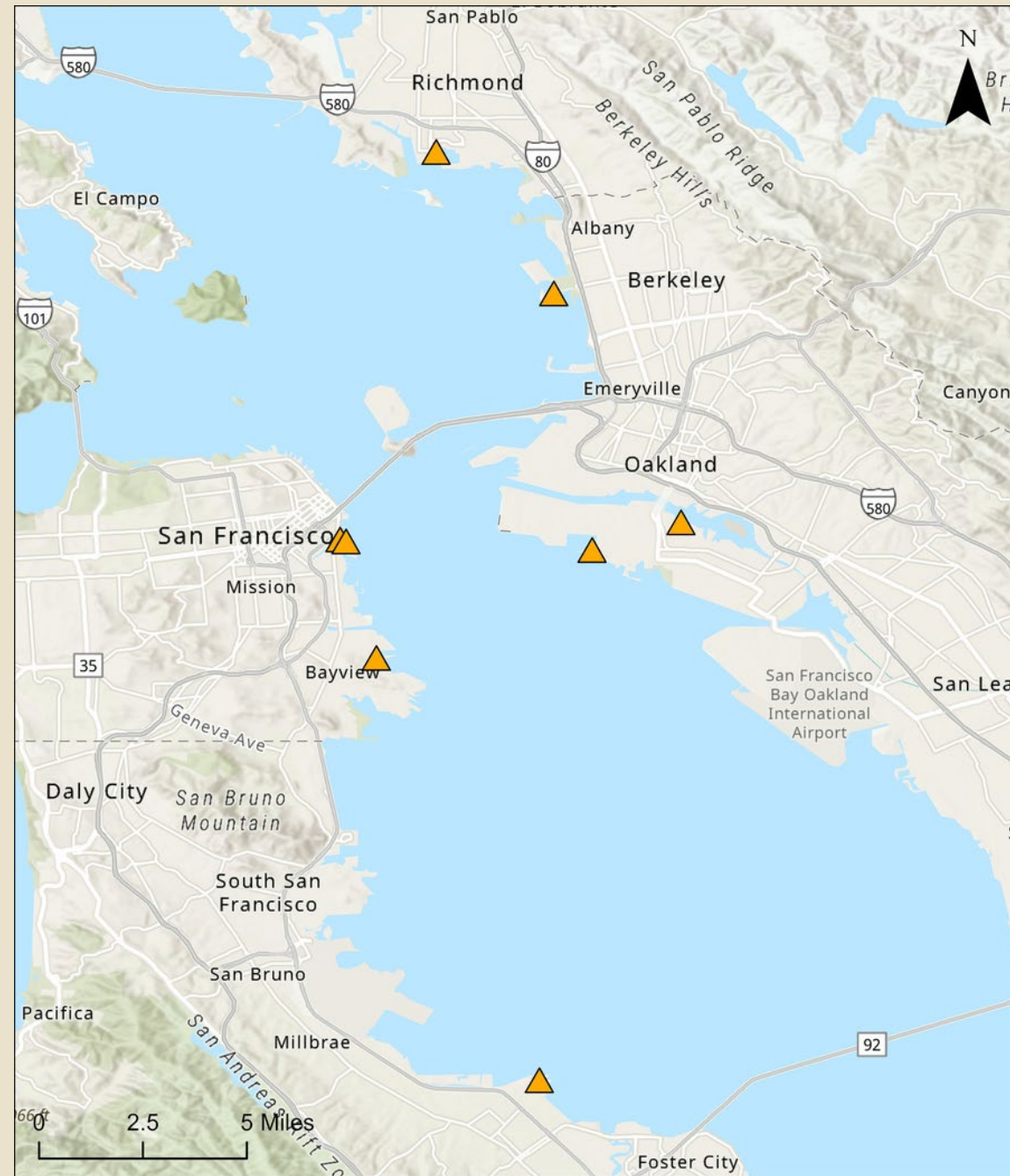
UPLOAD DATA





# METHODS

## SITE SELECTION



## 9 MONITORING SITES AROUND SF BAY

SAN FRANCISCO- 3

RICHMOND- 1

SAN MATEO- 1

BERKELEY- 2

ALAMEDA- 2





# METHODS

*AKASHIWOSANGUINEA*

*KARENIA*SPP.

*ALEXANDRIUM*SPP.

*KARLODINIUM*SPP.

*CHAETOCEROS*SPP.

*NOCTILUCA*SP.

*DINOPHYSIS*SPP.

*PROROCENTRUM*SPP.

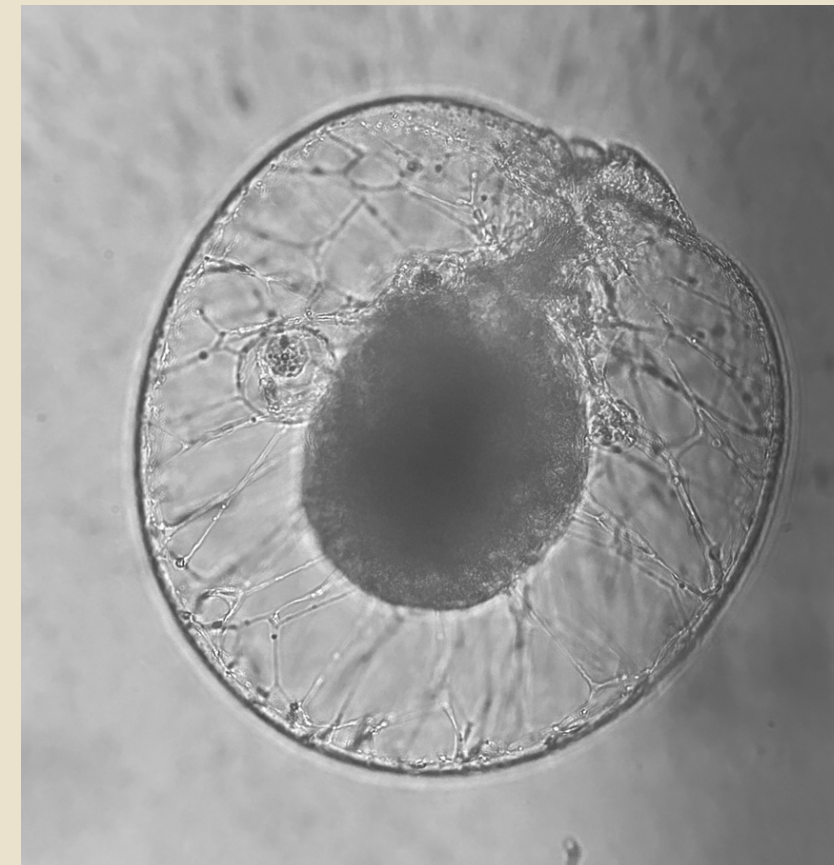
*HETEROCAPSAS*SPP.

*PSEUDONITZSCHIA* SPP.

*HETEROSIGMAS*SPP.

*MICROCYSTIS*SPP.

## TARGET HAB SPECIES





# METHODS

*AKASHIWOSANGUINEA*

*KARENIA* SPP.

*ALEXANDRIUM* SPP.

*KARLODINIUM* SPP.

*CHAETOCEROS* SPP.

*NOCTILUCA* SPP.

*DINOPHYSIS* SPP.

*PROROCENTRUM* SPP.

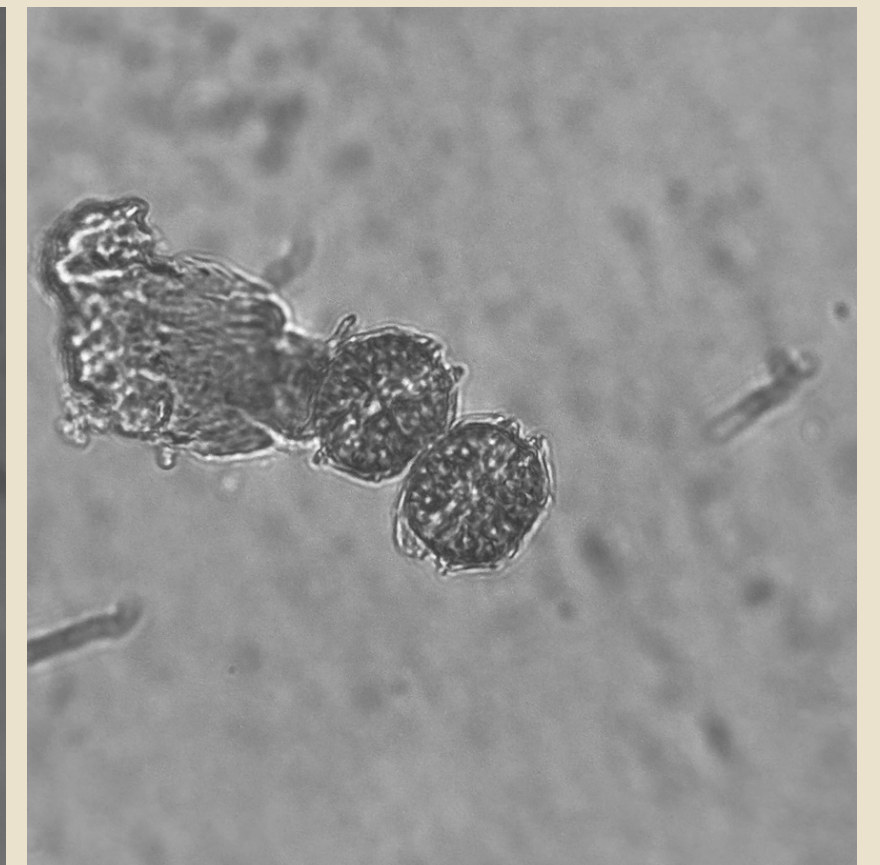
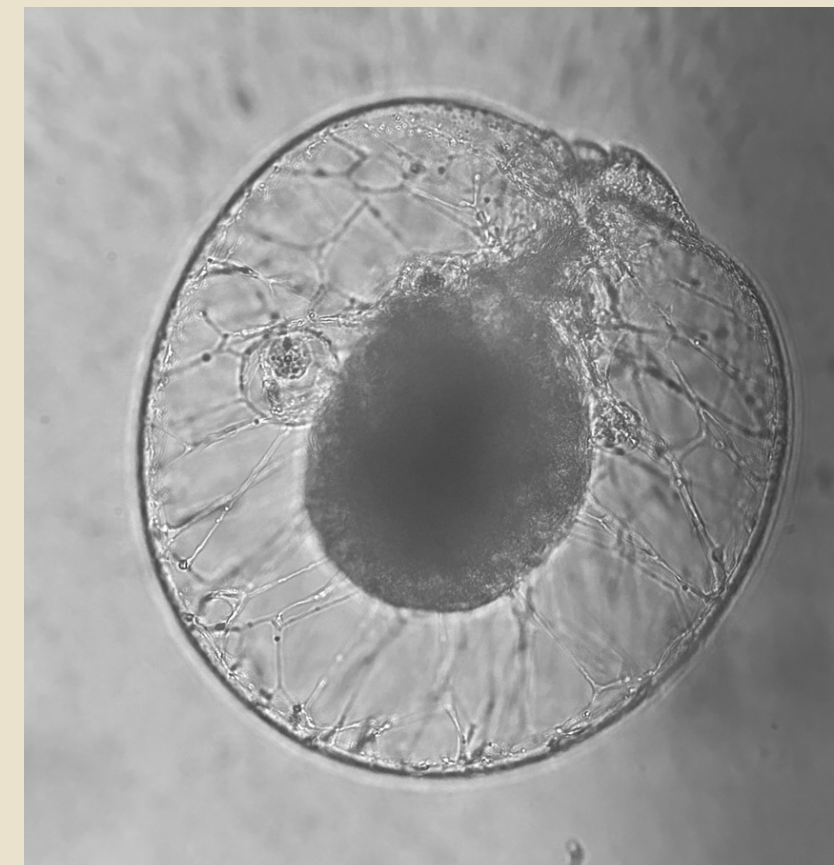
*HETEROCAPSAS* SPP.

*PSEUDONITZSCHIA* SPP.

*HETEROSIGMAS* SPP.

*MICROCYSTIS* SPP.

## TARGET HAB SPECIES





# METHODS



VOLUNTEER RECRUITMENT



TRAININGS



COORDINATION



PROGRAM EVALUATION





**9 VOLUNTEERS**



**332 SITE VISITS  
261 SUMMER SITE VISITS**



**332 PHYTOPLANKTON  
SAMPLES**

# RESULTS



1-800 -KEEP-BAY  
HOTLINE@BAYKEEPERORG



# RESULTS

2024

ALAMEDA SEAPLANE LAGOON

*HETEROSIGMA AKASHIWO* BLOOM





1-800 -KEEP-BAY  
HOTLINE@BAYKEEPER.ORG



# RESULTS

2024

EMERYVILLE MARINA

*HETEROCAPS* SP. BLOOM





An aerial photograph of Alameda, California, showing the city's industrial and residential areas, the San Francisco Bay Bridge, and the surrounding water. The image is split vertically by a dark blue band containing text.

# RESULTS

2025

ALAMEDA  
SEAPLANE LAGOON

ENCINAL BEACH

NO BLOOM DETECTED



1-800 -KEEP-BAY  
HOTLINE@BAYKEEPERORG

# RESULTS

2025

ENCINAL BEACH



NO DISCOLOREDWATER

Damon Tighe



1-800 -KEEP-BAY  
HOTLINE@BAYKEEPER.ORG

# RESULTS

2025

ALAMEDA  
SEAPLANE LAGOON

NO DISCOLORED WATER





# TAKE A



**Crowd sourcing is powerful**

**Valuable to monitor where HABs likely to originate**

**Trained volunteers help ground truth**

**Engage people with the Bay**





# NEXT S

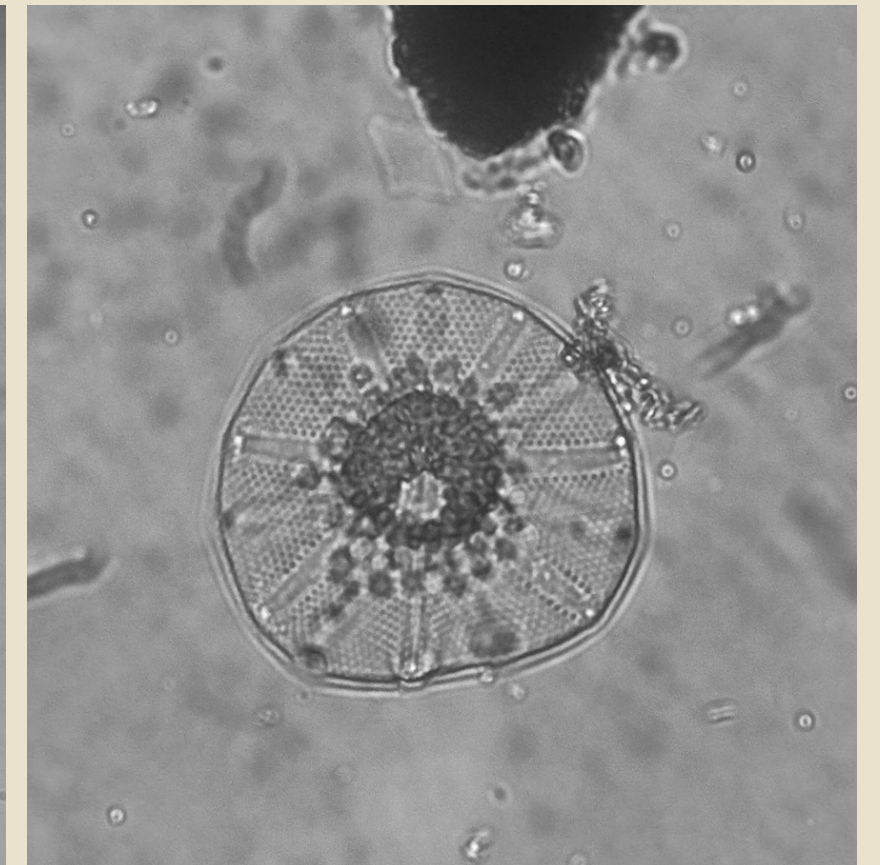
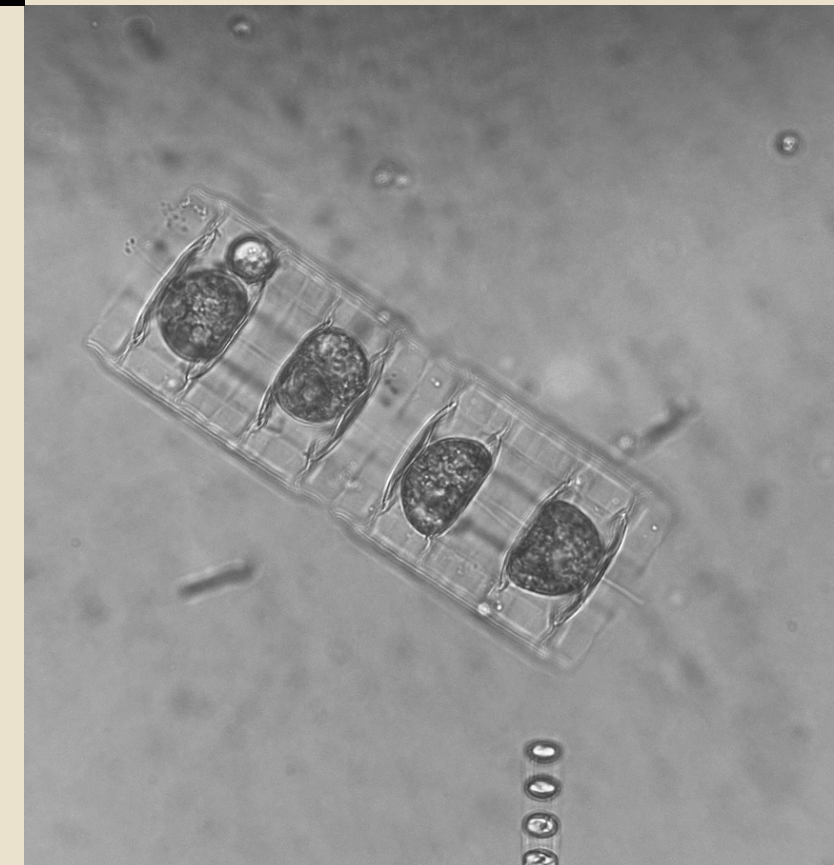


Volunteer retention

Proactive intern search

Microscope access and training

Backup plan for loss of PMN support







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SF BAYKEEPER

10\29\2025

# THANK YOU

## FUNDING SOURCES

NOAA

1-800 -KEEP-BAY

SF BAYKEEPER

HOTLINE@BAYKEEPERORG

RAYFELLOWSHIP

BAYKEEPERORG/REPORTPOLLUTION/

State of the Estuary Conference  
Oakland, California







# SITES

SOUTH BEACH HARBOR

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SOUTH BEACH FISHING PIER

---

HERON'S HEAD PARK

---

COYOTE POINT MARINA

---

RICHMOND MARINA

---

BERKELEY MARINA

---

BERKELEY SMALL BOAT LAUNCH

---

ALAMEDA SEAPLANE LAGOON

---

SAFE HARBOR MARINA VILLAGE





# RESULTS



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9 OUT OF 12 HAB TARGET SPECIES

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*CHAETOCERO* ELEVATED IN EAST BAY

---

LOW *HETEROSIGMA* SIGHTINGS

---

*DINOPHYSIS* MORE LOCAL IN 2025

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*PSEUDONITZSCHIA* SHOWS UP IN JULY

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*NOCTILUCA* ONLY IN SF SAMPLES

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*ALEXANDRIUM* MORE WIDESPREAD 2025

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