

RMP

2019 ANNUAL MEETING

RMP Highlights and Expanding Partnerships

Melissa Foley



RMP
REGIONAL MONITORING
PROGRAM FOR WATER QUALITY
IN SAN FRANCISCO BAY

sfei.org/rmp

New faces



Dr. Melissa Foley
Ecologist

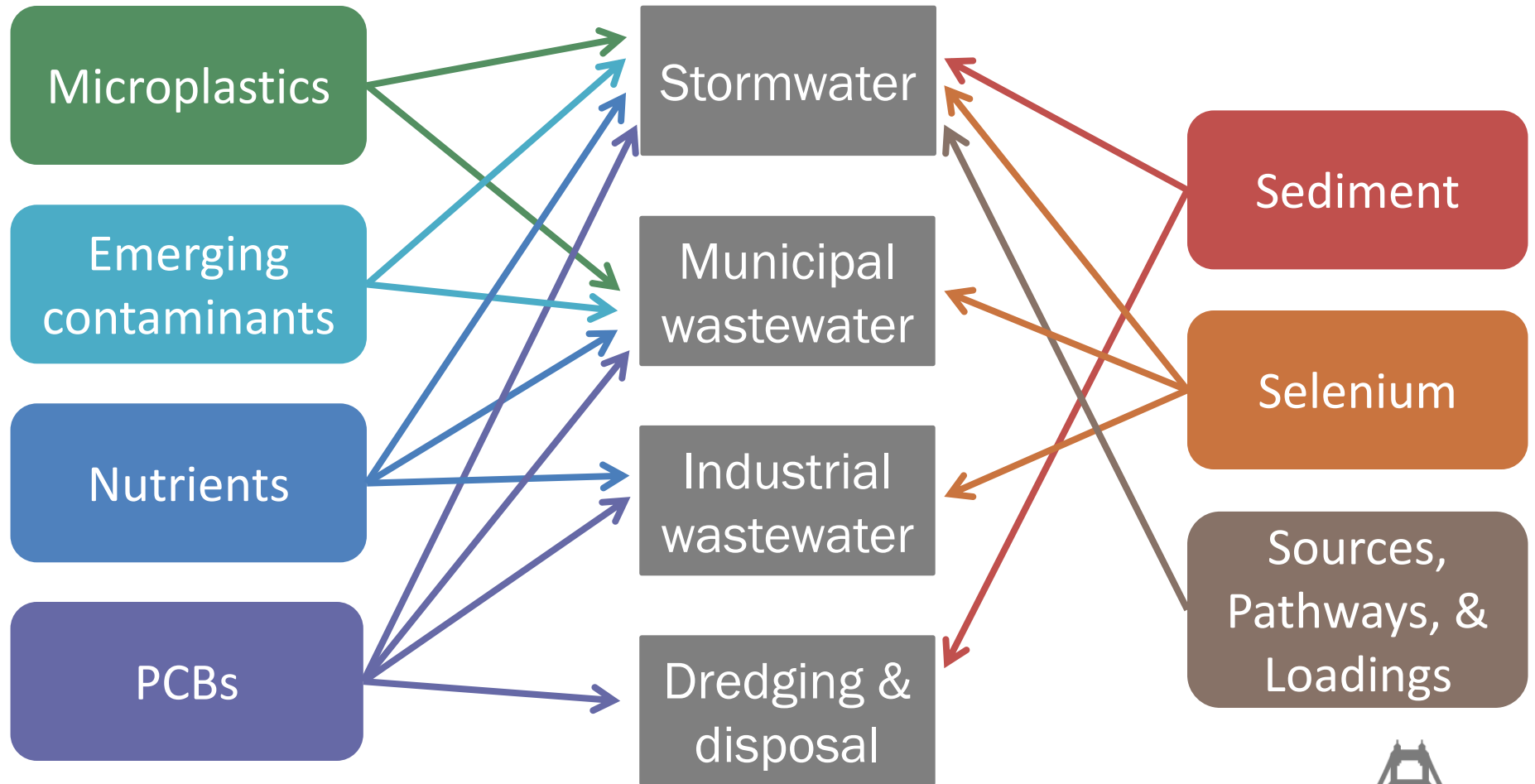


Dr. Liz Miller
Toxicologist



2019 RMP highlights

Pathways and RMP special studies



Pathways and RMP special studies

Microplastics

Emerging
contaminants

Nutrients

PCBs



**LIGHTNING
ROUND**

Sediment

Selenium

Sources,
Pathways, &
Loadings



Microplastics highlights

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Sources,
Pathways, &
Loadings



Microplastics abundant in SF Bay



Bay Monitoring



Water



Fish



Sediment



Pollution Pathways



Wastewater
(BACWA)



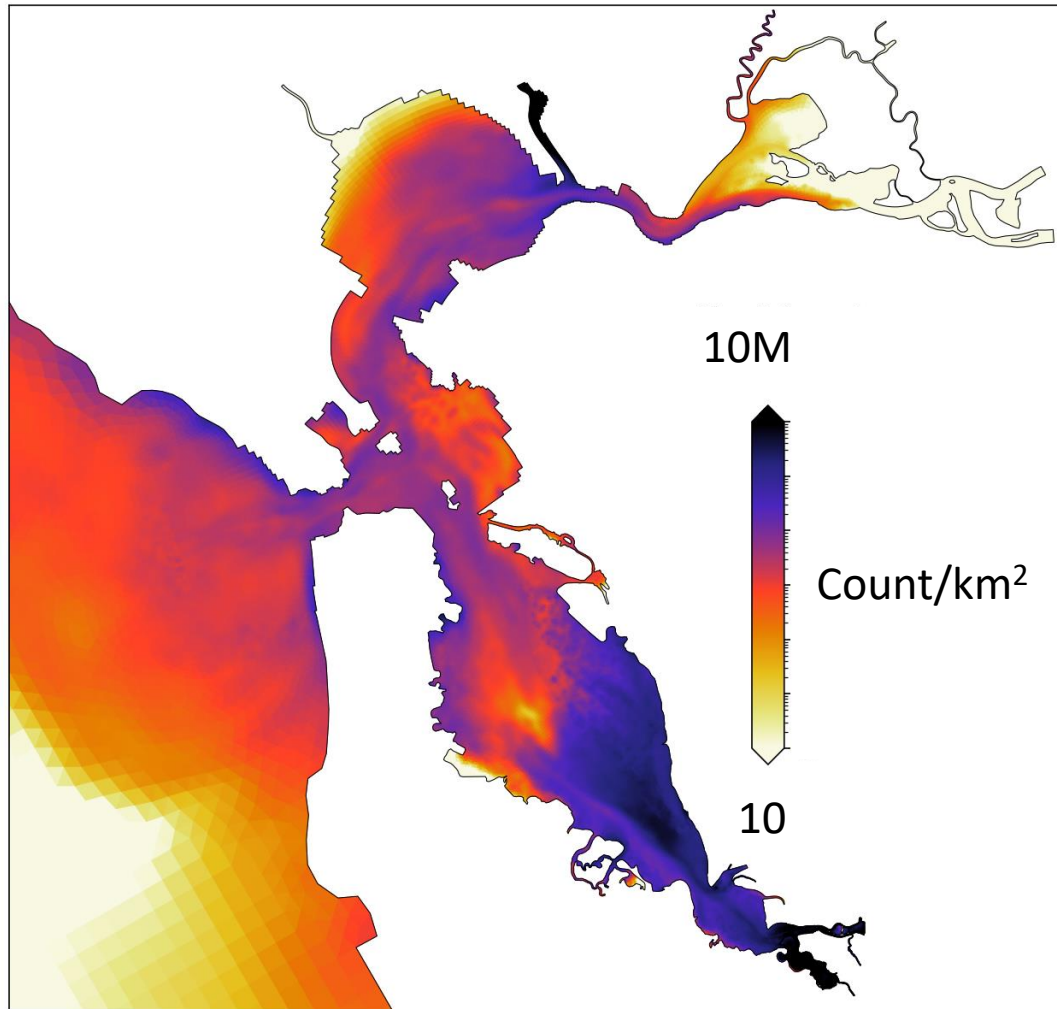
Stormwater
(BASMAA)

Transport
Model

Fate depends on buoyancy



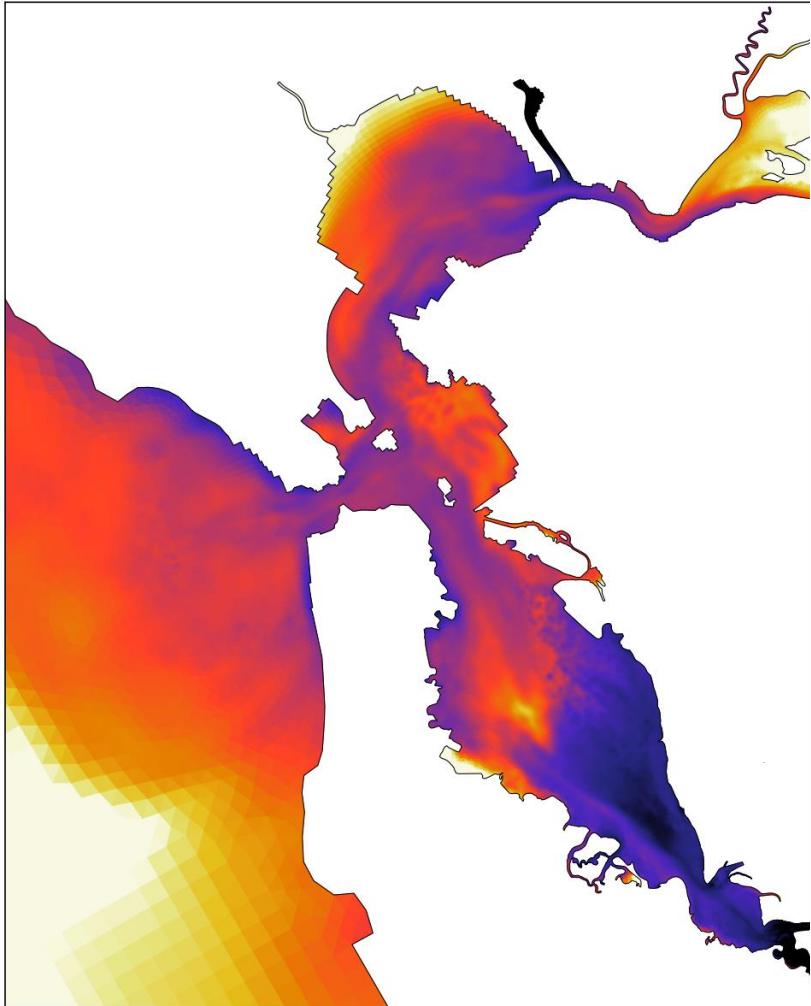
Floating particles



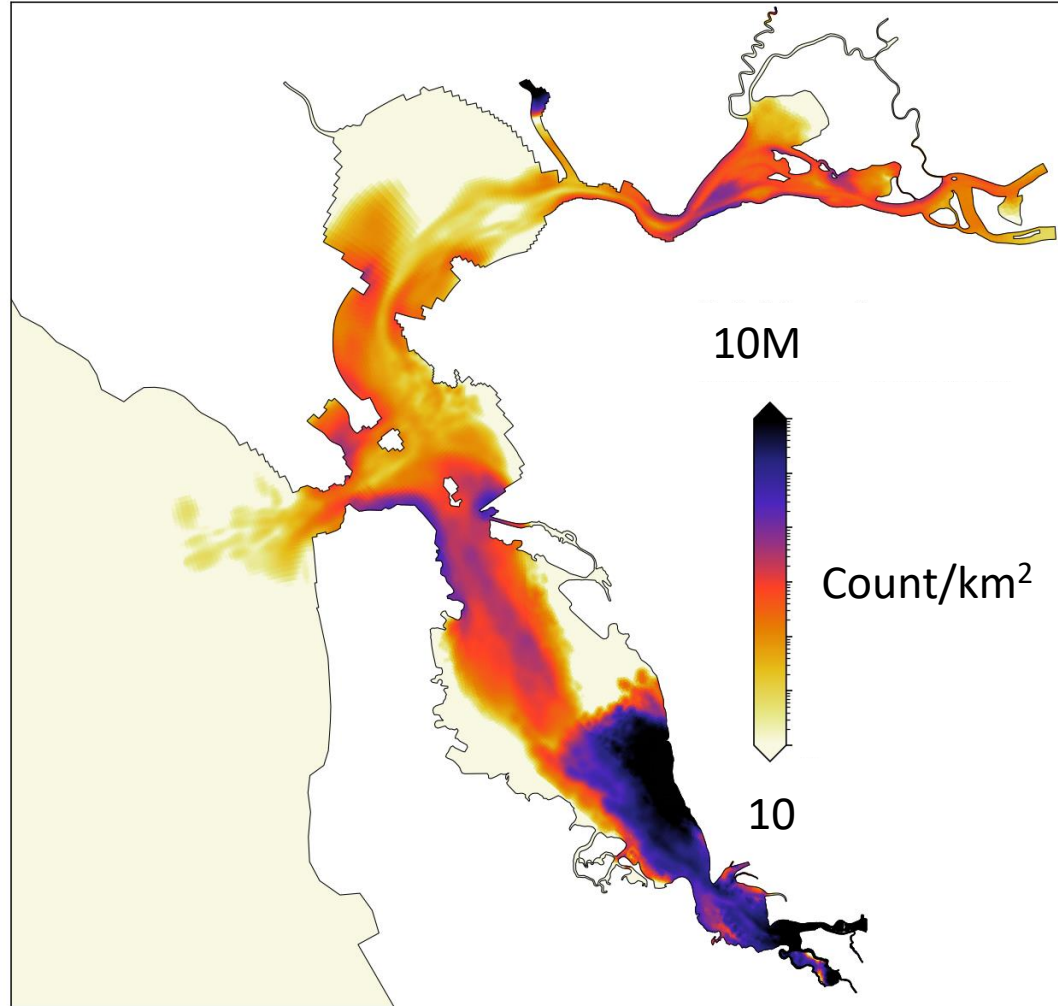
Fate depends on buoyancy



Floating particles



Sinking particles



Many outlets for this research



CHAPTER 2
Microparticles and Microplastics
IN BAY AREA STORMWATER by Alicia Gilbreath



Science-Supported Solutions and Policy Recommendations



Authors: Carolyn Box (5 Gyres)
Anna Cummins (5 Gyres)

September 2019

The Mercury News
WEDNESDAY, OCTOBER 2, 2019

SMALLER THAN 5 MILLIMETERS EACH

Plastic tide: 7 trillion bits wash into bay every year

New study reveals that storm drains are the largest source of the toxic confetti

IMPEACHMENT INQUIRY

Pompeo, House chairmen clash

Secretary of state rejects Dems' demands to interview State Department officials

By Michaela Finkler and Lara Lohr
The New York Times

WASHINGTON — The Trump administration and the leaders of the House impeachment inquiry into President Donald Trump clashed Tuesday over Democrats' demands to depose State Department officials who are witnesses in their growing investigation, trading an exchange of underhanded tactics.

INSIDE
President Trump and allies reject \$125-million in funding for aid. A4
Secretary of State Mike Pompeo pushed back to a

WILD & SCENIC® FILM FESTIVAL
where activism gets inspired

JANUARY 16-20 2020

ENVIRONMENTAL
Science & Technology

Discriminating Mercury Sources in Fish Across Land Use Gradients Using Mercury Isotopes

ACS Publications
www.acs.org

Emerging contaminants highlights

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Elevating the status of CECs



High Concern moderate or high impact	None currently
Moderate Concern low impact	PFOS, PFOA, Long-Chain Carboxylates Alkylphenols, Alkylphenol Ethoxylates Fipronil, Imidacloprid, Bisphenols Organophosphate Esters, Microplastics
Low Concern limited impact	PBDEs and HBCD Pharmaceuticals, Pyrethroids* Personal Care & Cleaning PBDDs / PBDFs
Possible Concern uncertainty as to impact	Alternative Flame Retardants Other PFAS (Fluorinated Chemicals) Pesticides, Plastic Additives Siloxanes, SDPAs, UV-BZTs, others

Microplastics a growing concern

CECs

EU taking a precautionary approach

- Widely detected
- Production is increasing
- Fragmentation ongoing
- Very persistent
- Extremely difficult to clean up
- Impacts on aquatic species uncertain

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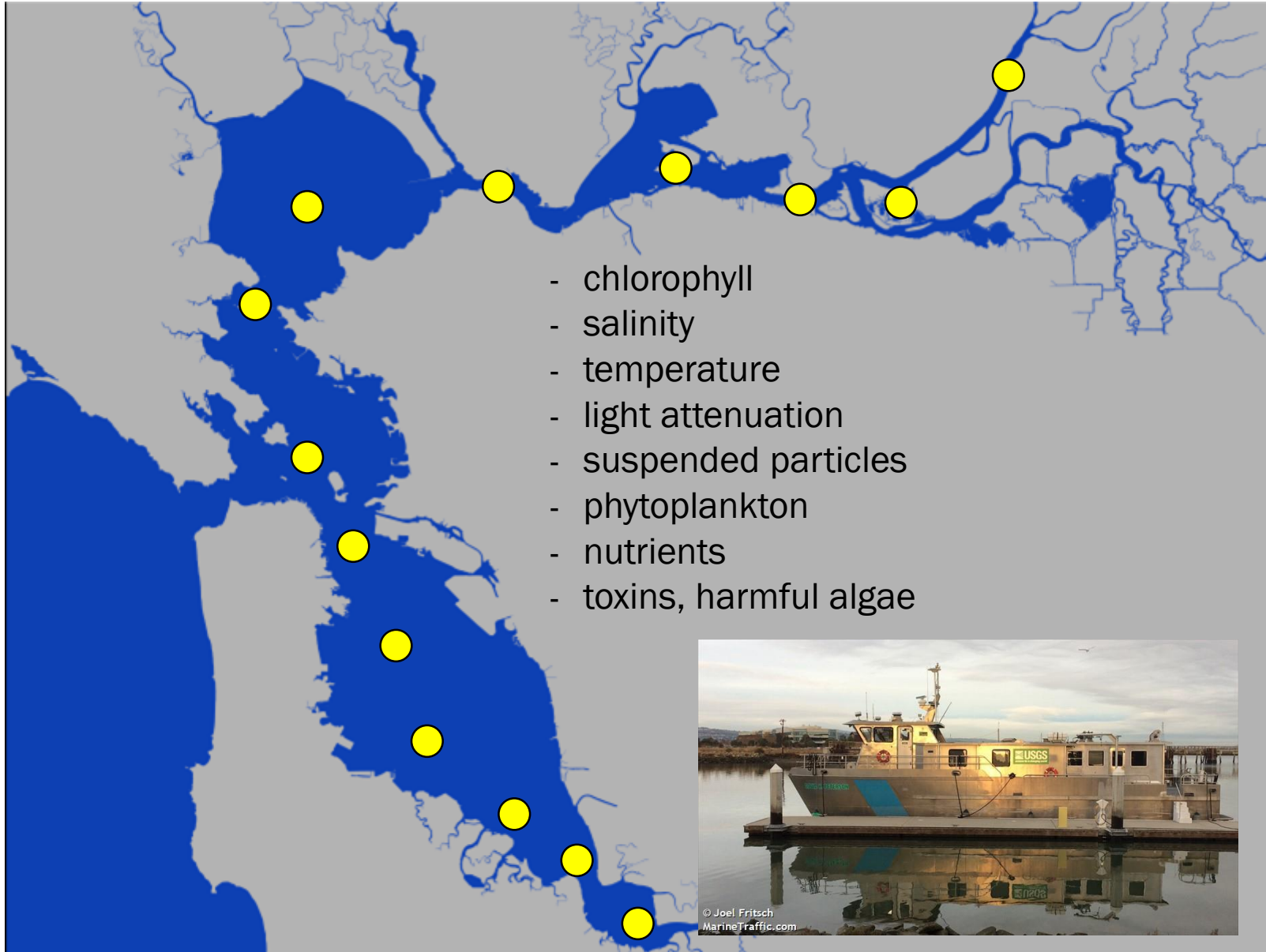
Selenium

Sources,
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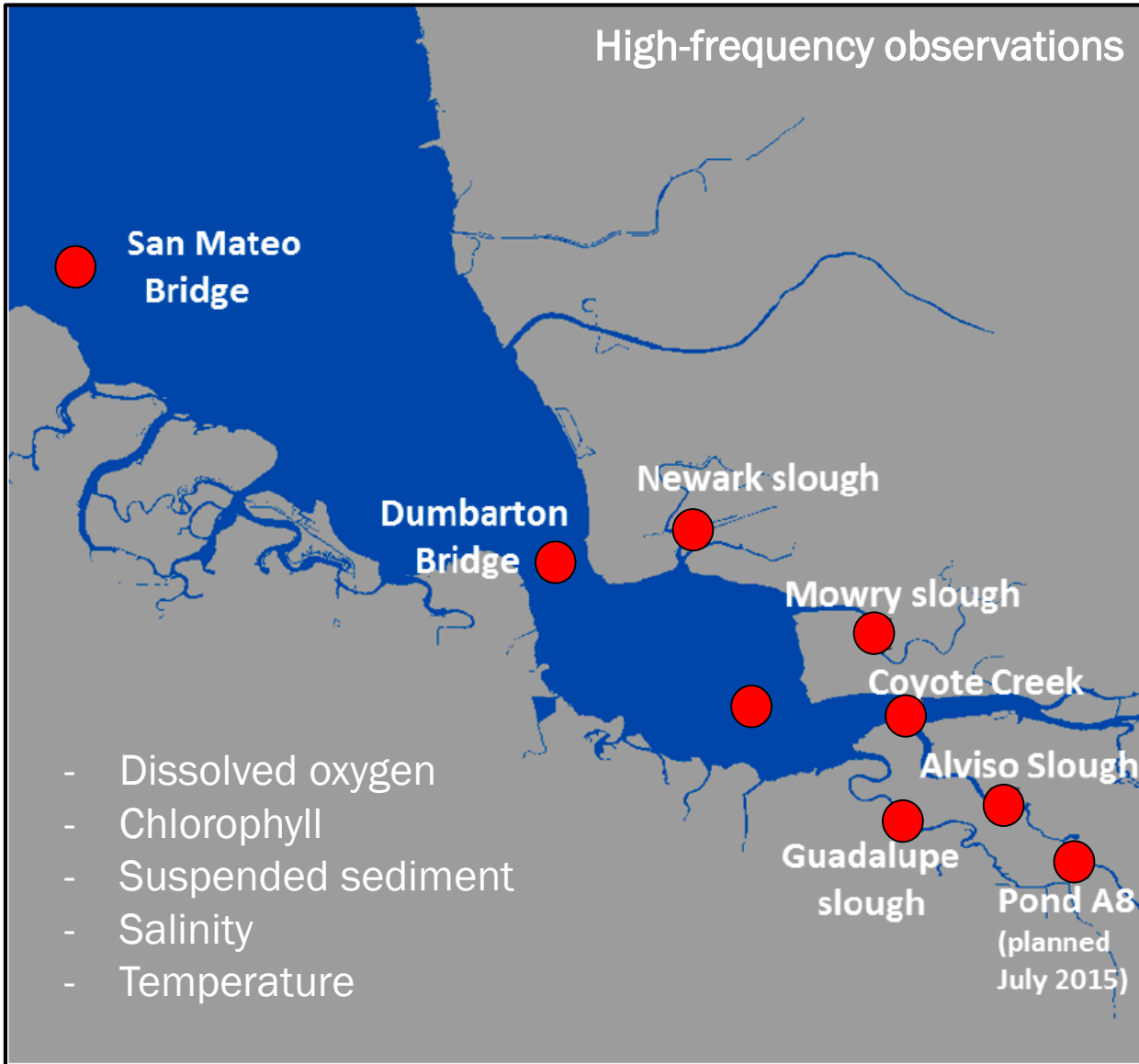


Bay cruises will continue!

Nut



Continuous data in South Bay



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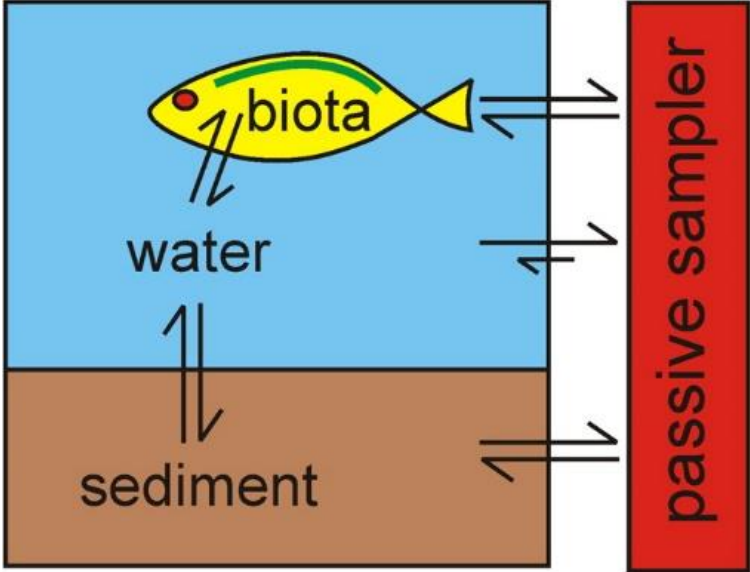
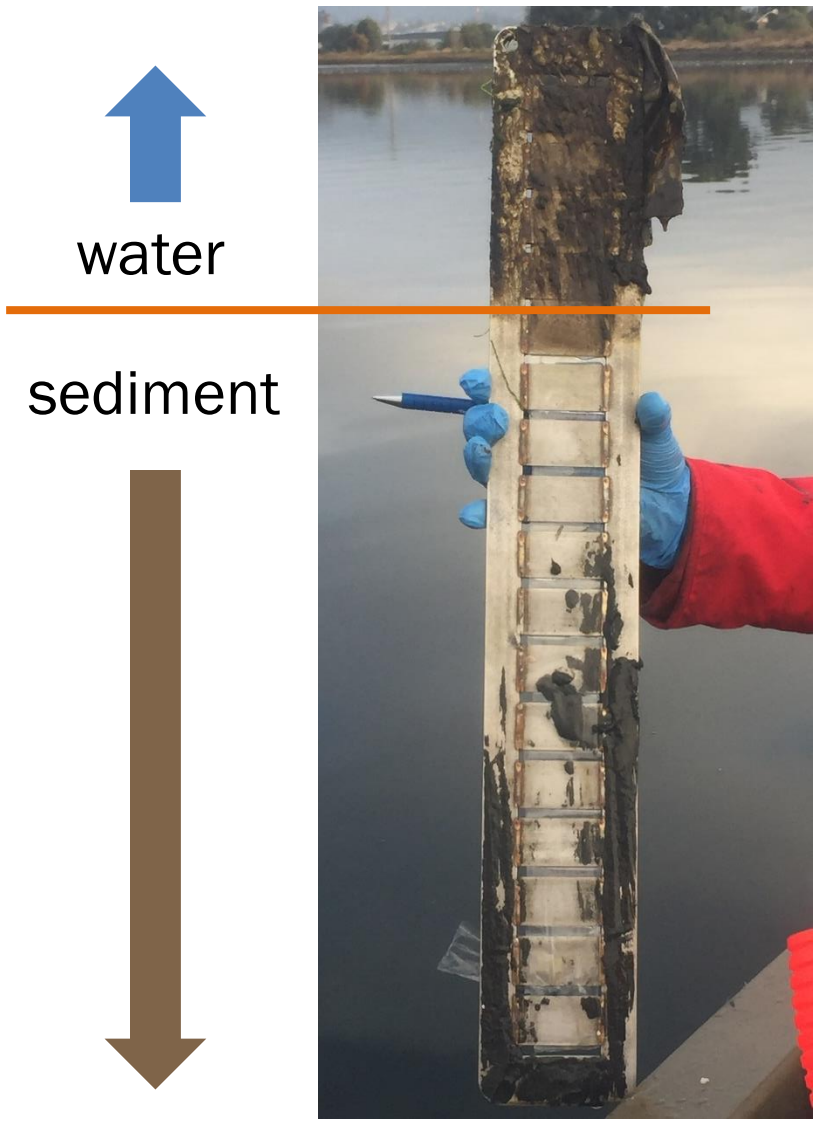
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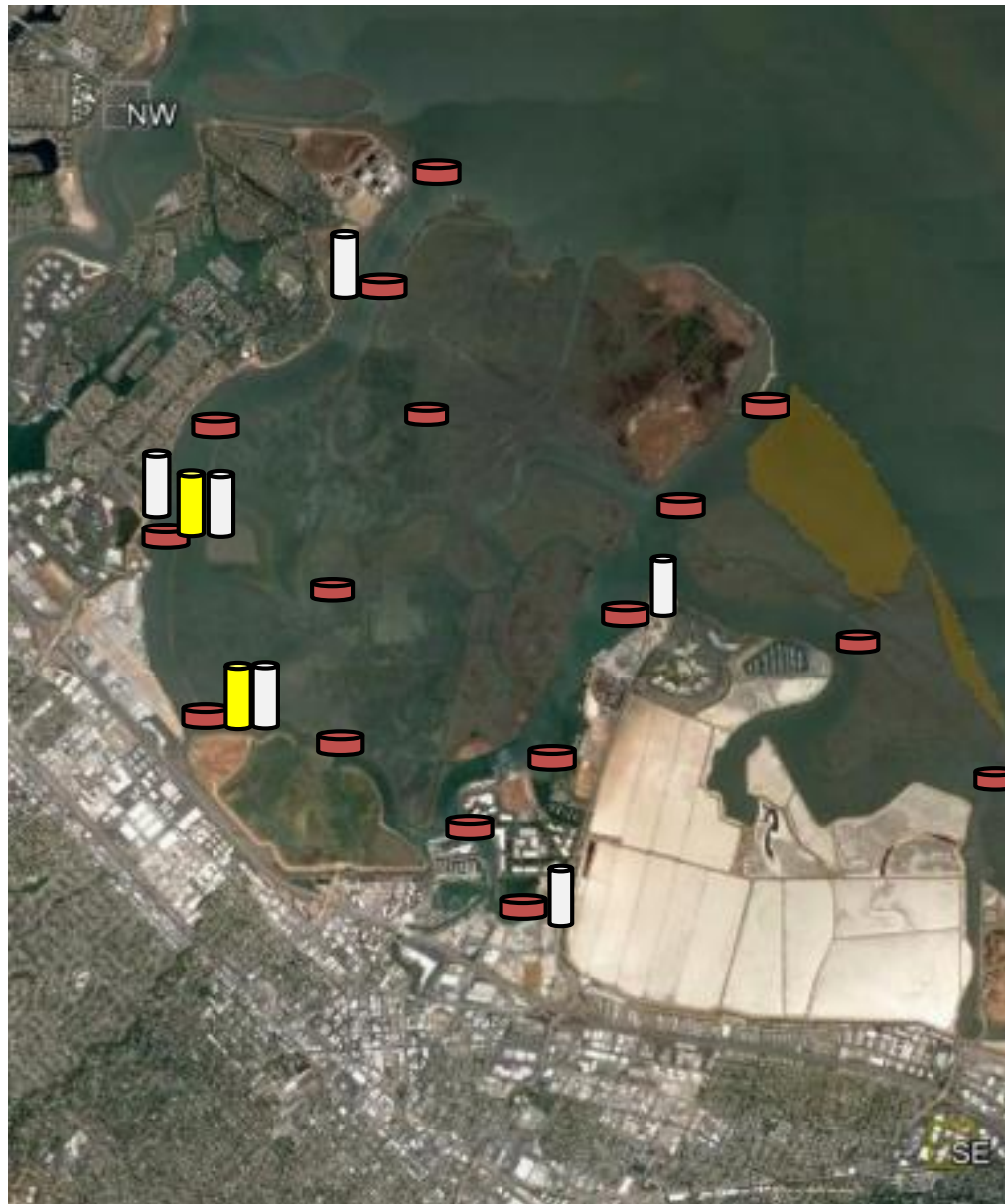


Passive PCB sampling



Characterizing Steinberger Slough

PCBs



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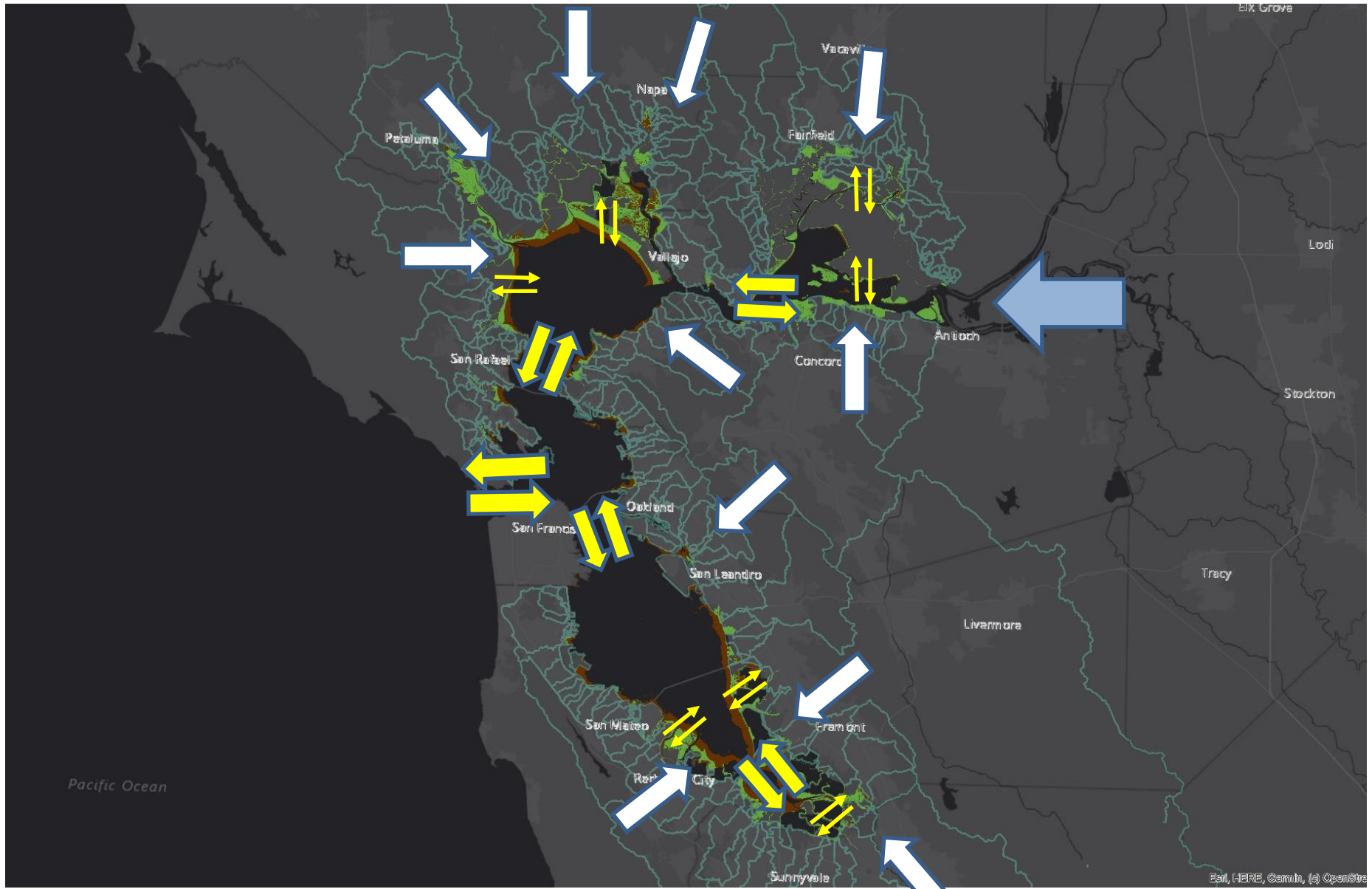
Sediment

Selenium

Sources,
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Sediment dynamics in the Bay



Coordinating to fill the gaps



Bay RMP

Wetland RMP

BCDC

Healthy Waters
Resilient
Baylands



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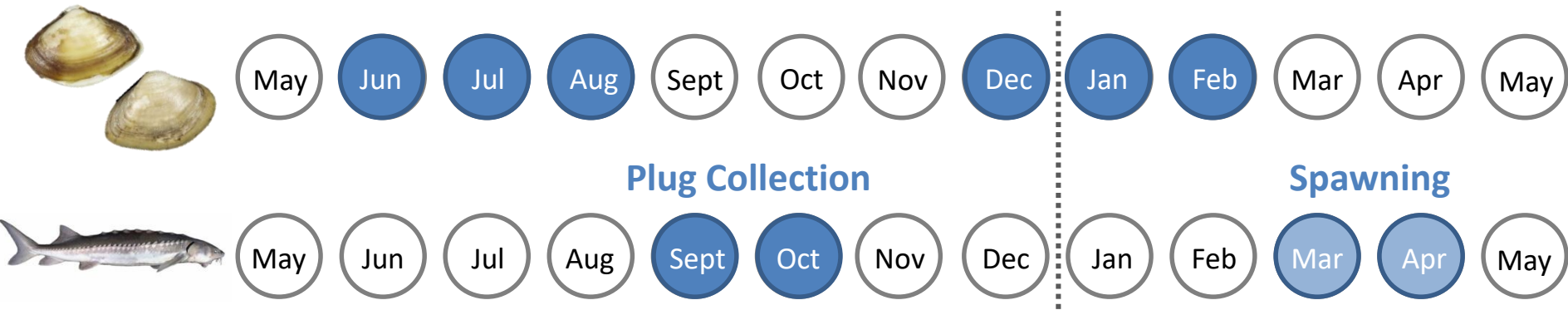
Sources,
Pathways, &
Loadings



North Bay selenium monitoring



- Continuation of USGS sampling
- Coordinated clam and water sampling
- Sturgeon muscle plug collection with CDFW tagging efforts



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Sources,
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Watershed modeling

SPL



Meteorology

Water diversion

Topography

Land use

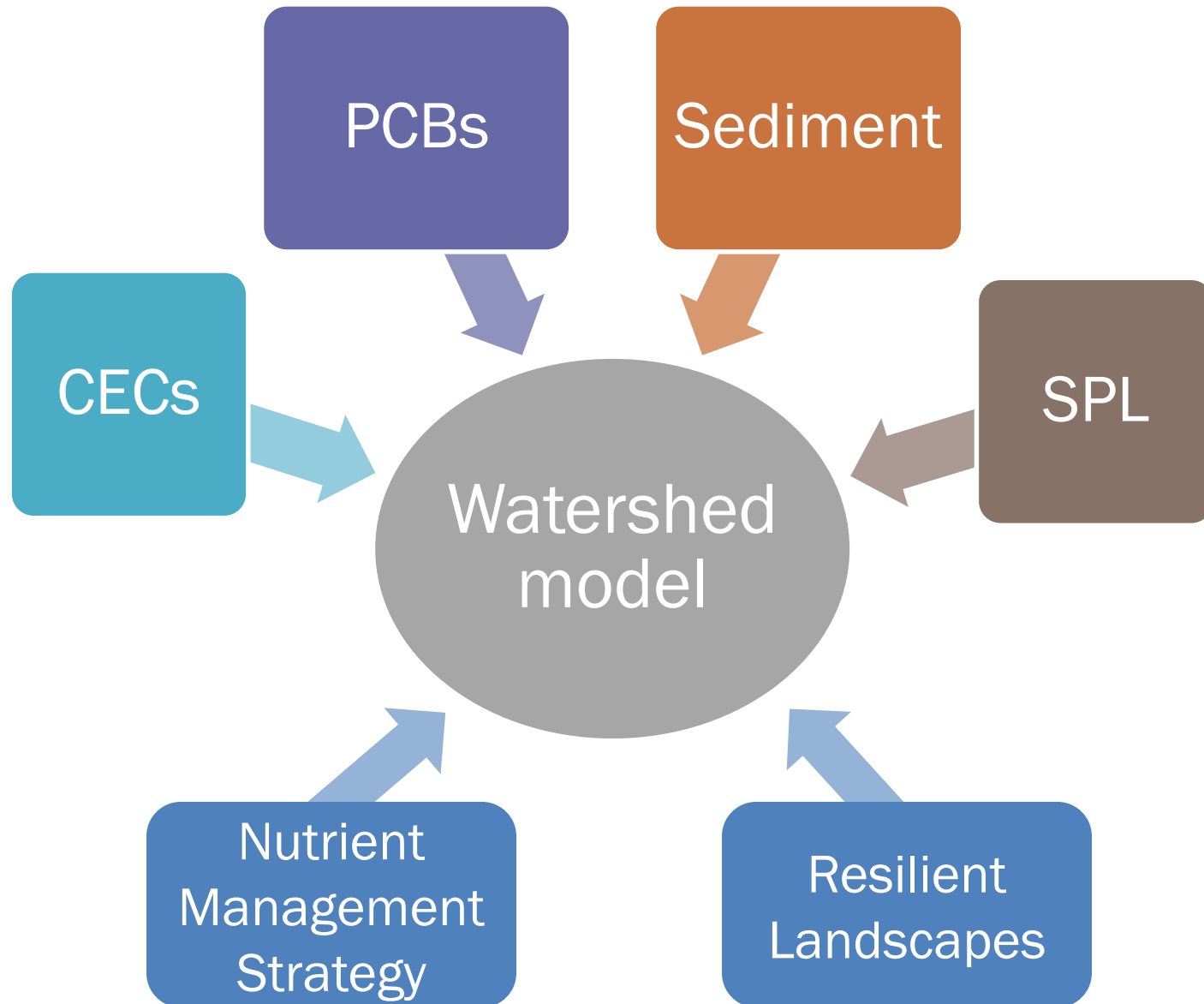
hydrology

sediment

pollutants of concern

Workgroup collaboration

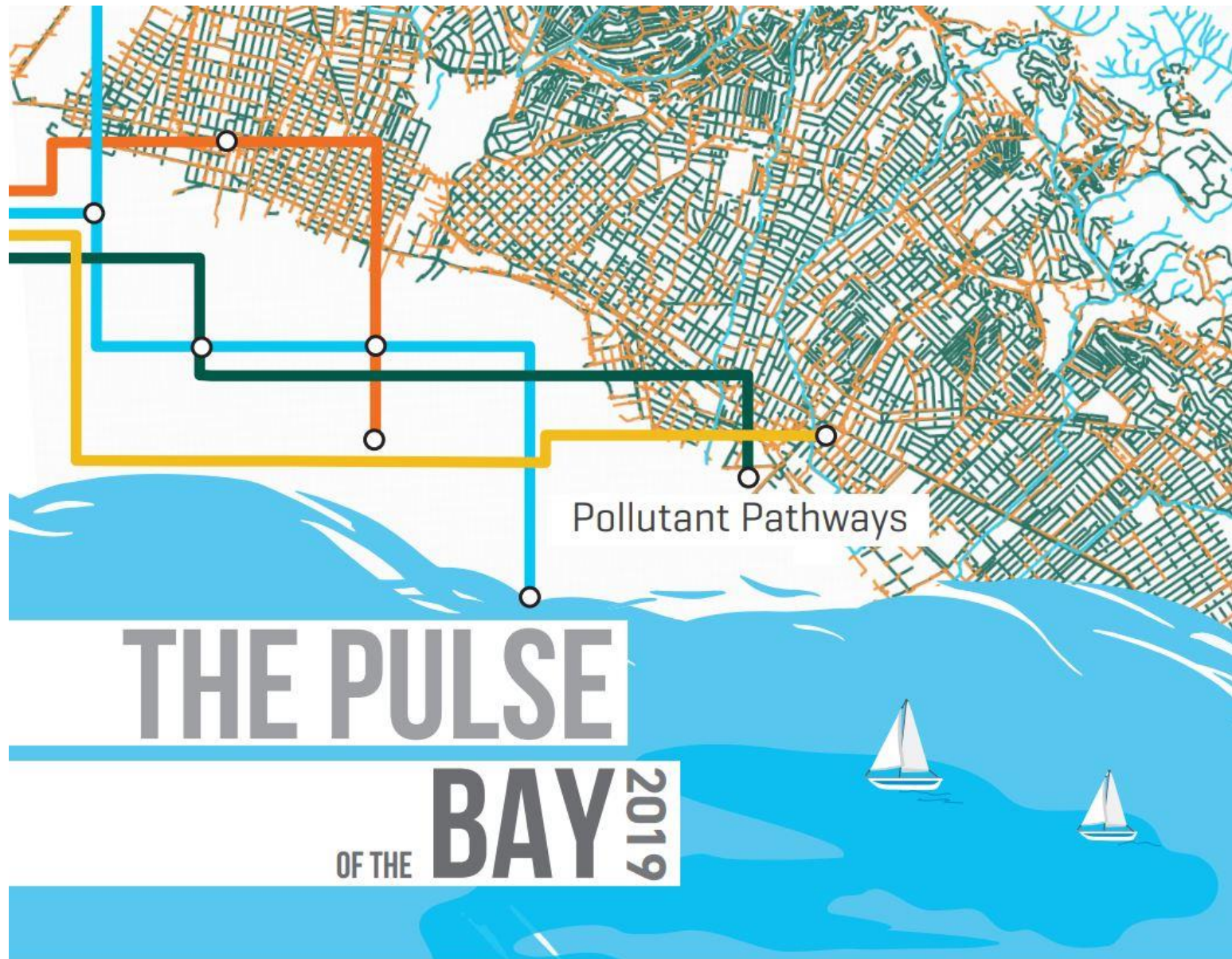
SPL



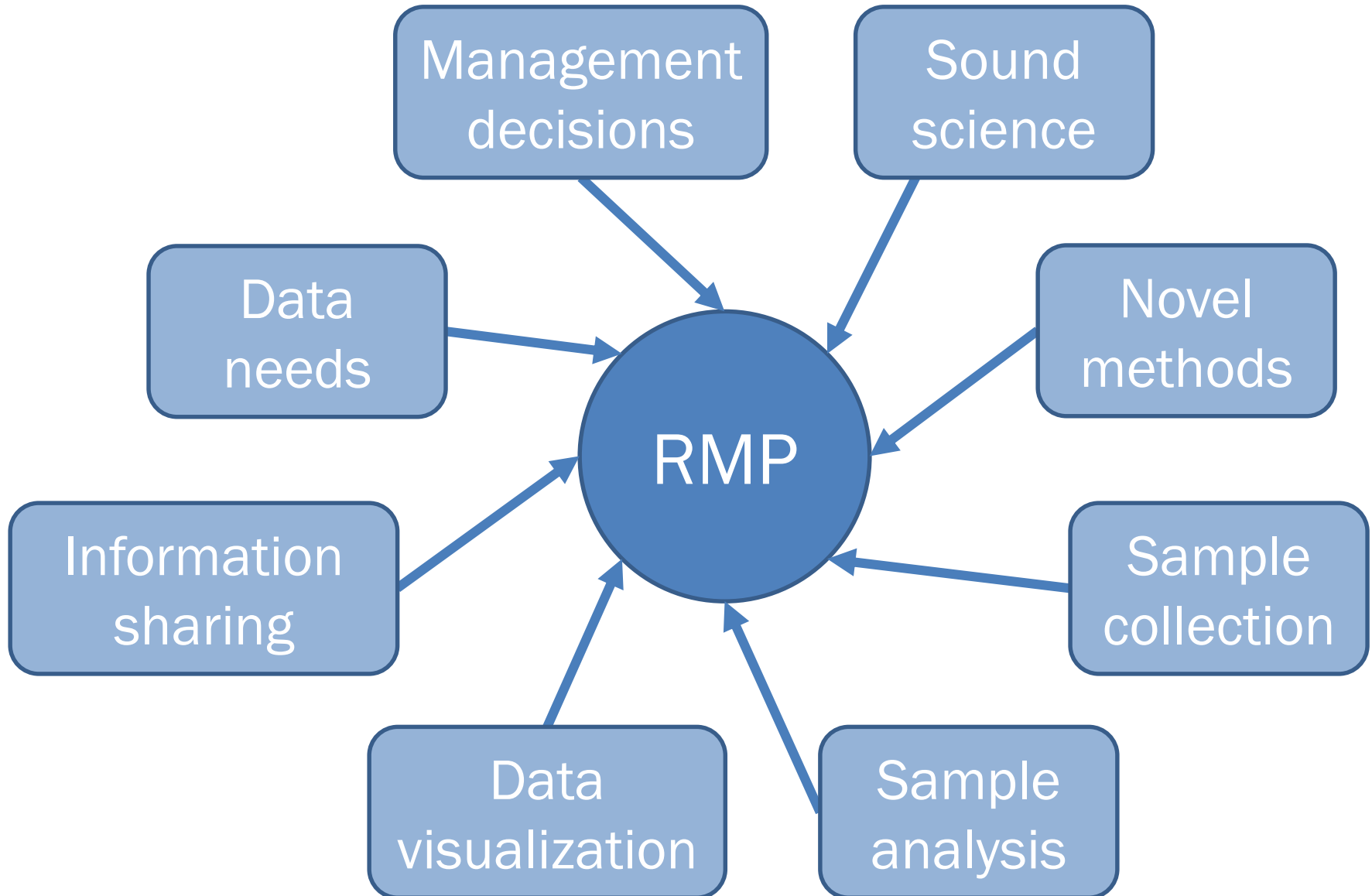
Pathways and RMP special studies



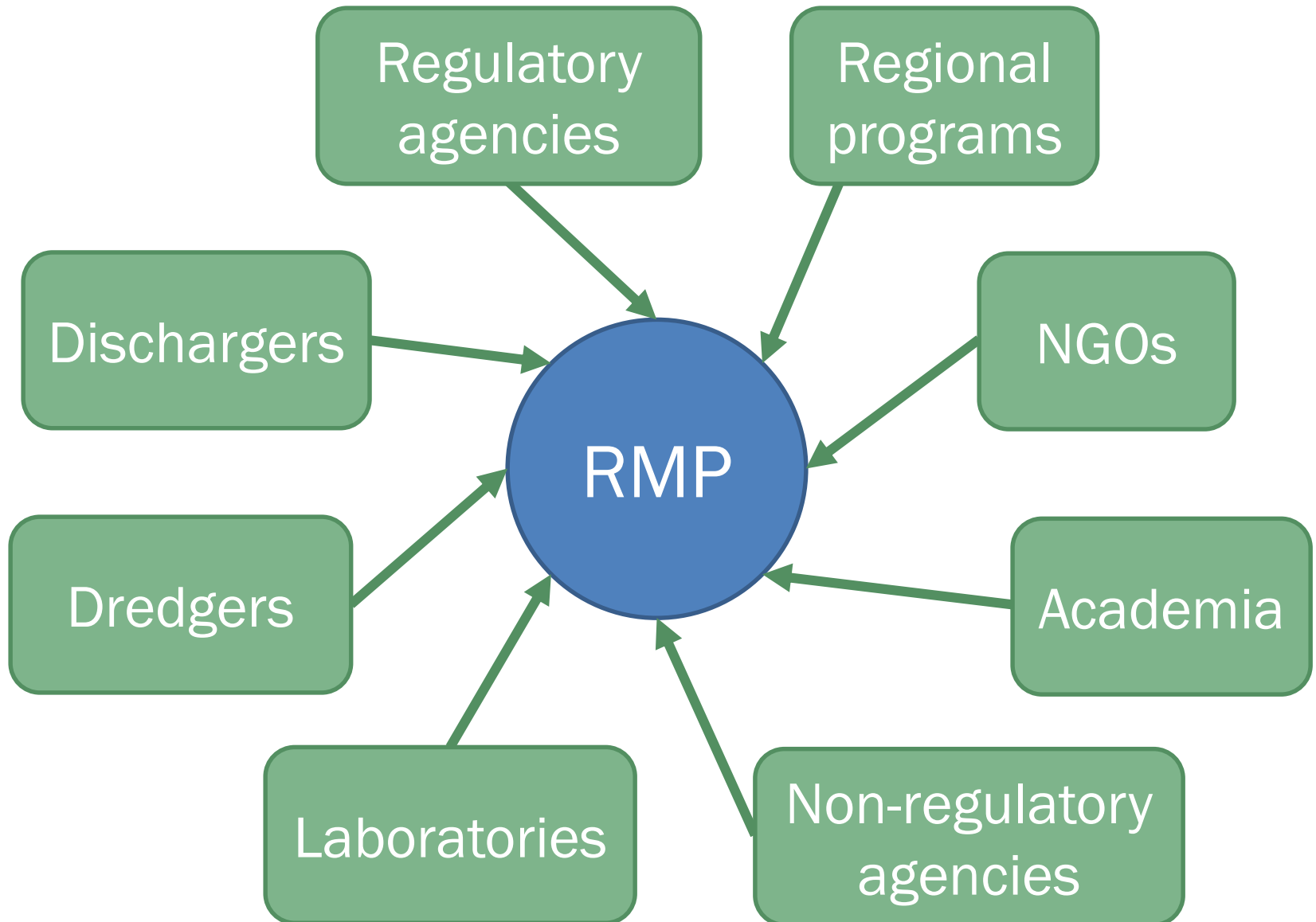
Many more studies...



Partnerships are key to the RMP

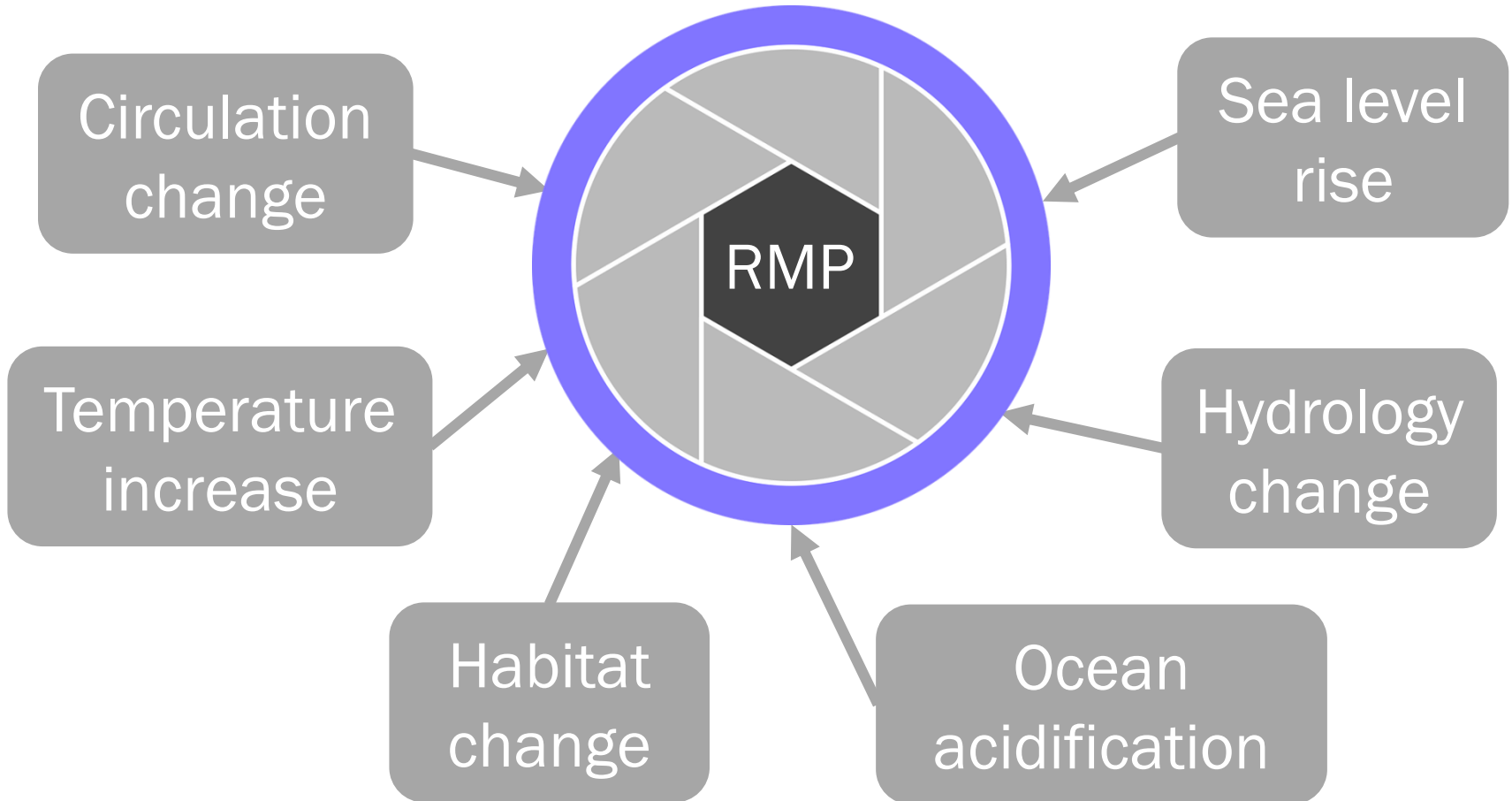


Partnerships are key to the RMP

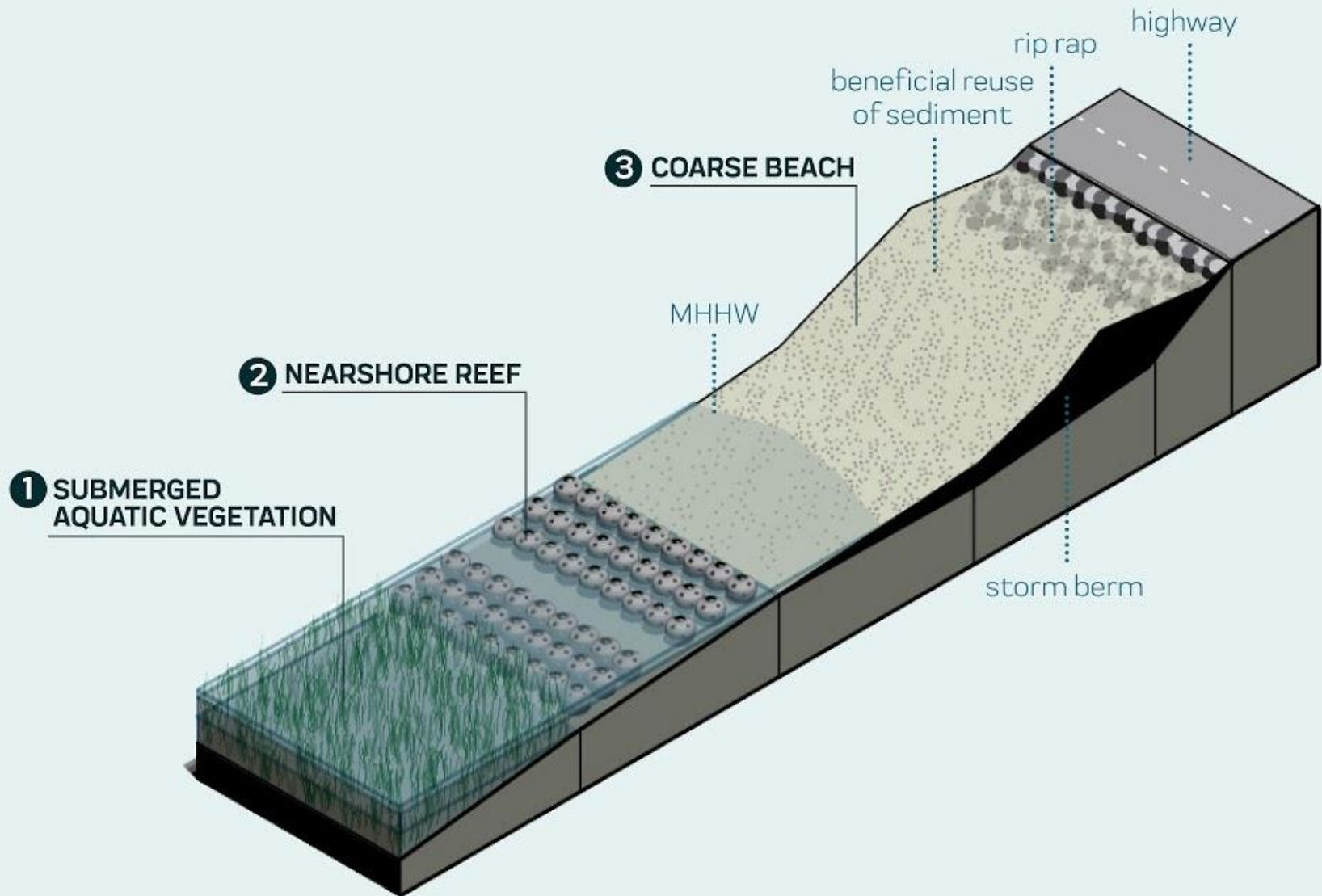


Expanding our partnerships

Climate change

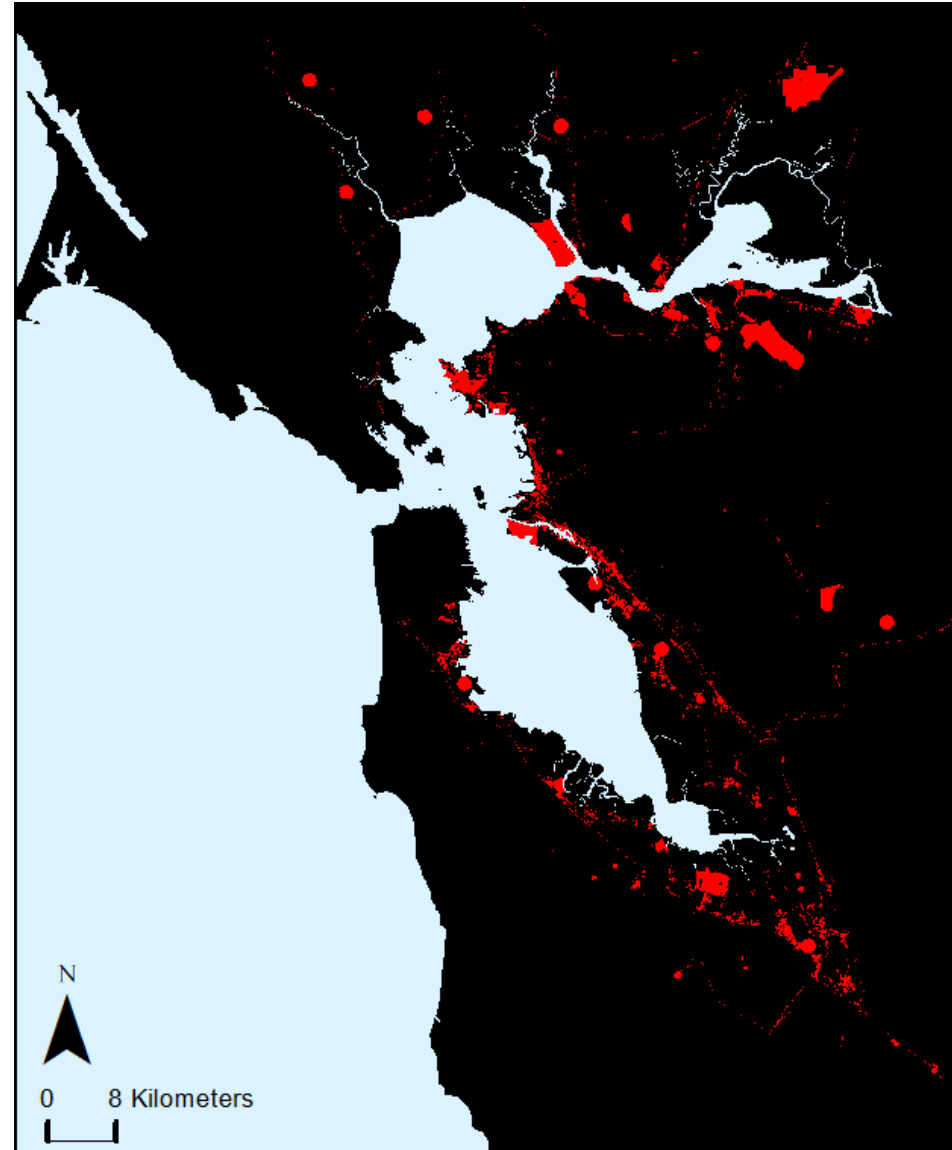


Adaptation AND clean water?

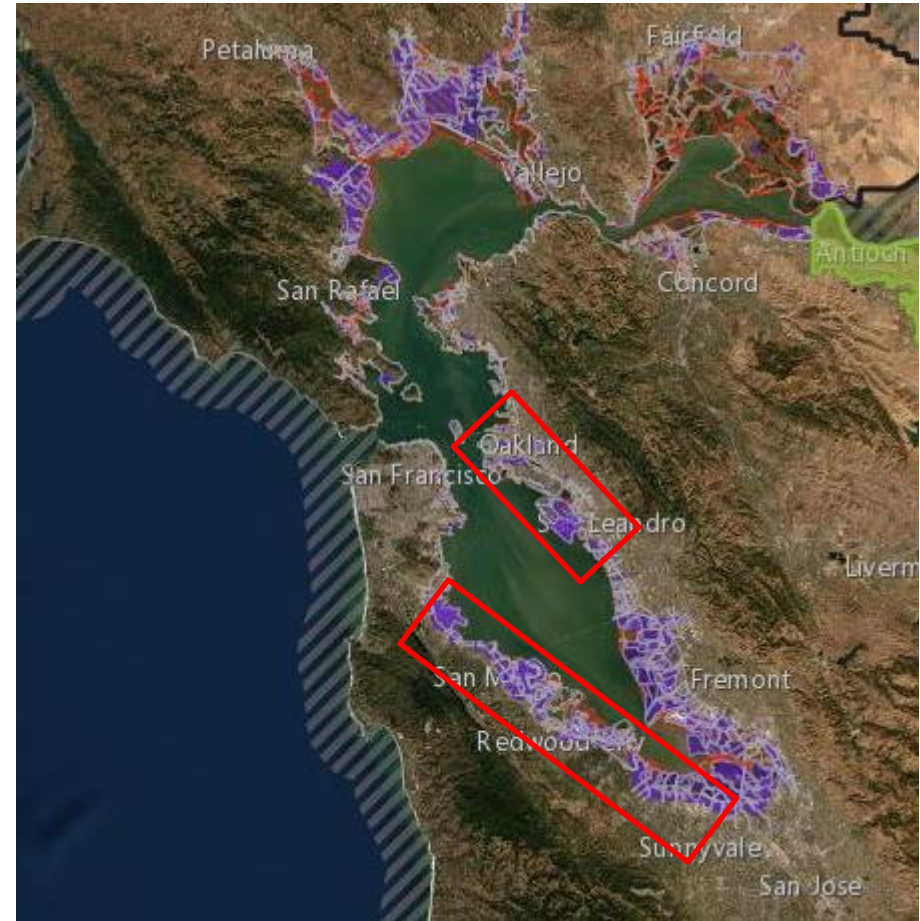
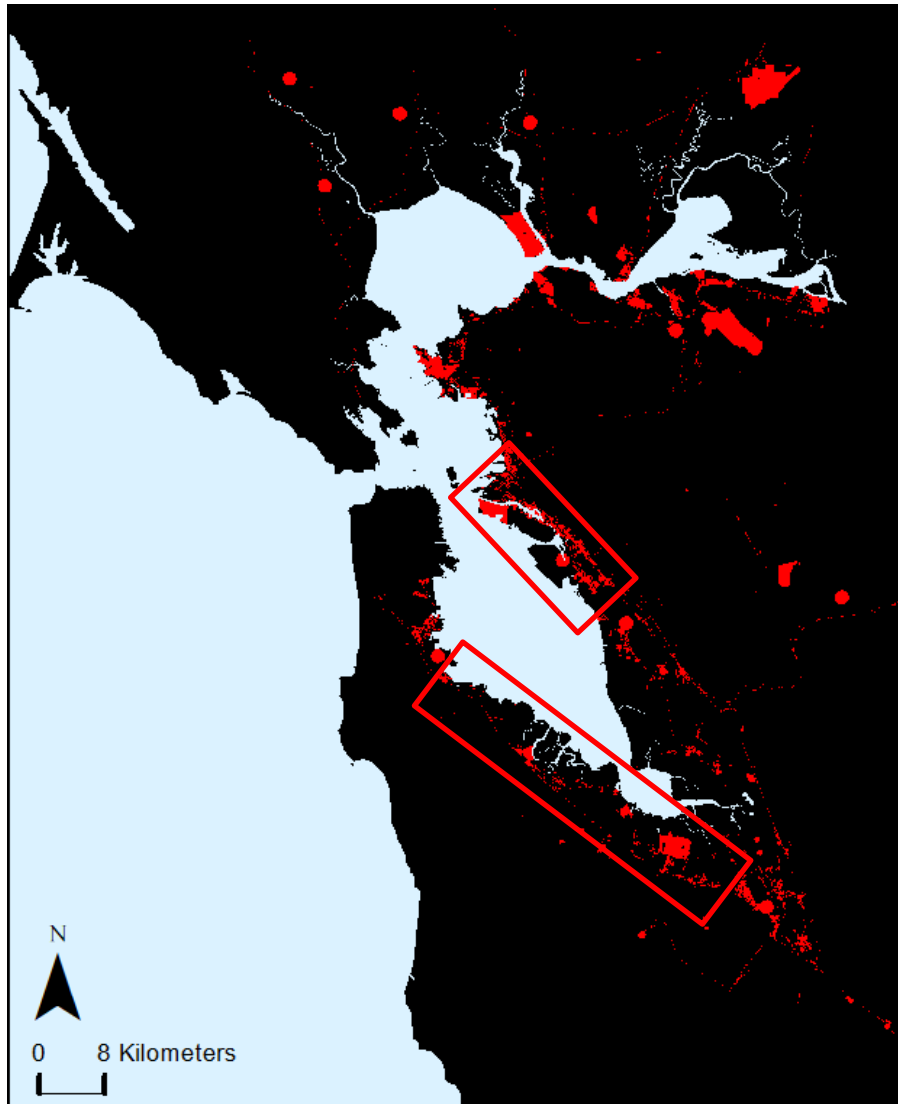


SLR, storms, and water quality

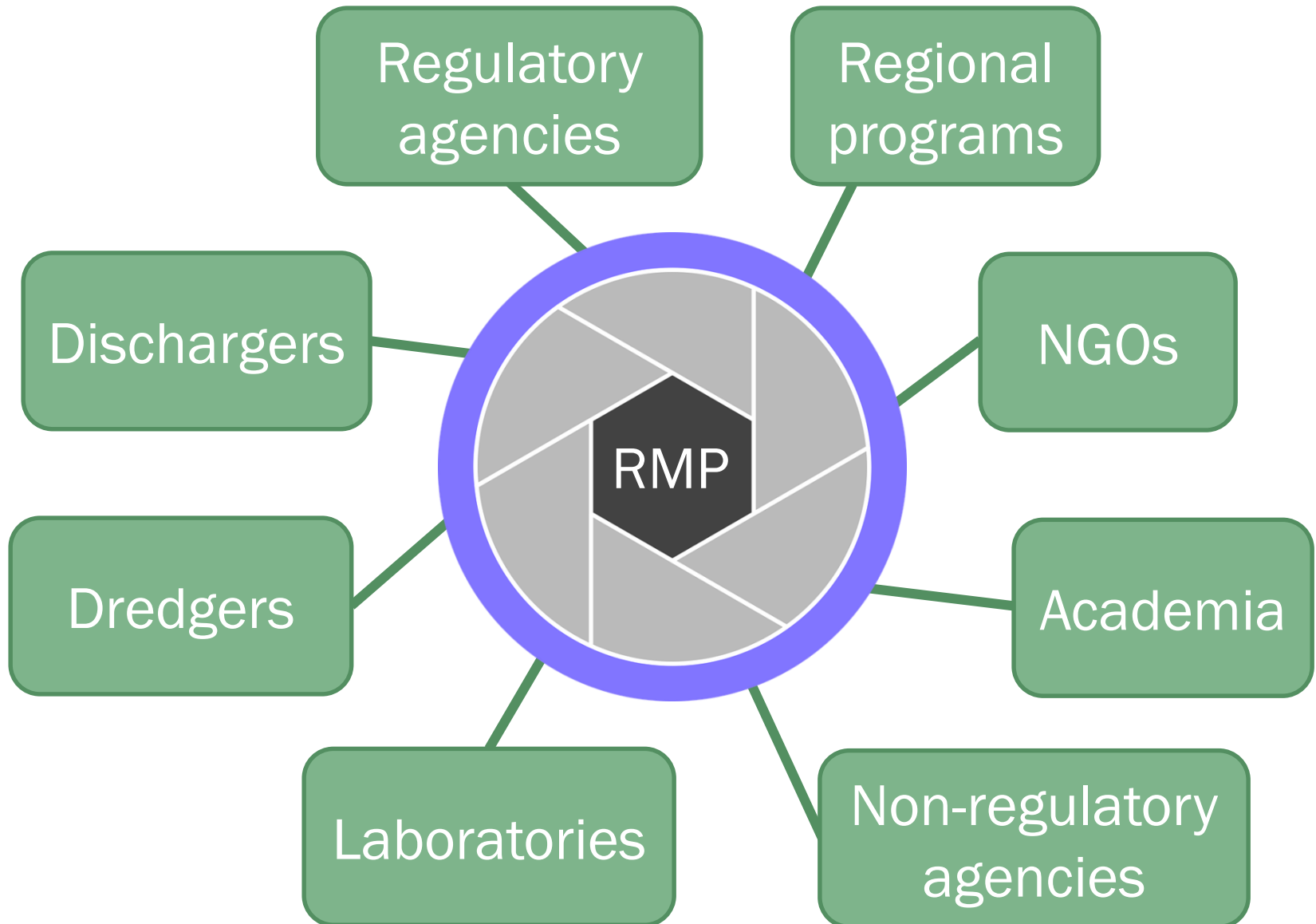
Sea level rise
+ Increased storminess
Possible inundation
of industrial areas



SLR, storms, and water quality



Evolving work and partnerships



It takes a village...

SFEI:

Ruth Askeveld
Michaela Bazo
Shira Bezalel
Nina Buzby
Warner Chabot
Jay Davis
Anna De Lopez
Scott Dusterhoff
Amy Franz
Alicia Gilbreath
Letitia Grenier
Cristina Grosso
Steve Hagerty
Tony Hale
Matt Heberger
Jen Hunt
Biruk Imagnu
Erika King
Diana Lin
Jeremy Lowe
Lester McKee
Katie McKnight
Liz Miller
Ellen Plane
Amy Richey
Derek Roberts
April Robinson
John Ross
Linda Russo
Meg Sedlak
Dave Senn
Ila Shimabuku
Rebecca Sutton
Randy Turner
Don Yee

Steering Committee:

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Shannon Alford
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Heather Peterson
Lisa Sabin
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Yuyun Shang
Chris Sommers
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Simret Yigzaw

Science Advisors:

Bill Arnold
Marcus Beck
Brian Bergamaschi
Jane Caffrey
Dan Cain
Jim Cloern
Anna-Marie Cook
Miriam Diamond
Lee Ferguson
Jim Fitzpatrick
Frank Gobas
Jim Hagy
Larry Harding
Jim Hobbs
Tom Jobes
Tamara Kraus
Kara Lavender Law
Levi Lewis
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Kelly Moran
Derek Muir
Rebecca Murphy
Harry Ohlendorf
Chelsea Rochman

Dave Schoellhamer
Heather Stapleton
Martha Sutula
Perry de Valpine
Dan Wang
Pat Wiberg

Workgroups:

Lisa Austin
Barbara Baginska
Simona Balin
Aaron Bever
Scott Bodensteiner
Dale Bowyer
Peter Carroll
Yeo-Myoung Cho
Beth Christian
Scott Coffin
Joe Dillon
Nate Dodder
Maureen Downing-Kunz
Teresa Fregoso
Brenda Goeden
Josh Gravenmier
Roxeanne Grillo
Dave Halsing
Fred Hetzel
Eunha Hoh
Bruce Jaffe
Andy Jahn
Bill Johnson
Jessie Lacy
Daniel Livsey
Sam Luoma
Michael MacWilliams
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Margaret Monahan
Jan O'Hara
Lucile Paquette
Brian Ross
Jim Scanlin
Robert Schlipf
Jennifer Siu
Robin Stewart
Jennifer Teerlink
Christina Toms
Paul Work
Scott Wright

Partners:

Todd Albertson
David Bell
Autumn Bonnema
Carolynn Box
Sean Campbell
Da Chen
Stephen Clark
Anna Cummins
Pete Dal Ferro
Lorien Fono
Richard Grace
Melinda Kelly
Natalie Lynch
Jenny McKee
Dan Powers
Paul Salop
Marco Sigala
Chris Vallee
Linda Wanczyk
Steve Weisberg
David Williams
Charles Wong
Holly Wyer

Labs:

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CalTest
Eurofins
MLML
MPSL
Pacific EcoRisk
Southeast Lab SFPUC
SGS-AXYS
UC Davis

Funders:

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City of Burlingame
City of Calistoga
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Central Marin Sanitation Agency
Delta Diablo
East Bay Dischargers Authority
East Bay Municipal Utility District
Fairfield-Suisun Sewer District

Las Gallinas Valley Sanitary District
City of Millbrae
Mountain View Sanitary District
Napa Sanitation District
Novato Sanitation District
City of Palo Alto
City of Petaluma
City of Pinole/Hercules Rodeo Sanitary District
San Francisco International Airport
City and County of San Francisco
City of San Jose
City of San Mateo
Sausalito-Marin City Sanitary District
Sewerage Agency of Southern Marin
City of South San Francisco/San Bruno
Sonoma County Water Agency
Silicon Valley Clean Water
City of Sunnyvale
City of St. Helena
Marin County Sanitary District #5, Tiburon
Union Sanitary District
Vallejo Flood and Wastewater District
West County Wastewater District
Town of Yountville
U.S. Navy, Treasure Island
C&H Sugar Company
Chevron Products Company
Crockett Cogeneration
Eco Services Operations Corporation
Phillips 66 Company
Shell Martinez Refinery
Tesoro Golden Eagle Refinery
USS-POSCO Industries
Valero Refining Company
Alameda County Clean Water Program
California Department of Transportation
City and County of San Francisco

Contra Costa Clean Water Program
Fairfield-Suisun Urban Runoff Management Program
Marin County Stormwater Pollution Prevention Program
Santa Clara Valley Urban Runoff Pollution Prevention Program
San Mateo Countywide Water Pollution Prevention Program
Vallejo Sanitation & Flood Control District
Belvedere Cove Access Channel
Benicia Port Terminal Company Pier 95
Chevron Richmond Long Wharf
City of Benicia Marina
Glen Cove Marina
Marina Dredge Neighbors
Phillips 66 Company Rodeo Terminal
Port of Oakland
Port of Redwood City
Port of San Francisco
San Francisco Yacht Club
U.S. Coast Guard Environmental Division
Vallejo Yacht Club

**THANK YOU.
BELIEVE ME, LIKE ME, YOU'RE
FANTASTIC. SO GREAT.
VERY, VERY AWESOME.**





melissaf@sfei.org

www.sfei.org/sf-bay-regional-monitoring-program