

**Joint Meeting of the Boards  
Aquatic Science Center and San Francisco Estuary Institute**

**Friday, December 11, 2015 Time: 10:00 am – 2:00 pm**

**San Francisco Estuary Institute  
4911 Central Avenue, Richmond, CA 94804**

**Number: 1.415.655.0381 - Access Code: 664-310-209#**

**DRAFT - AGENDA**

*Joint Business*

1.	<p><b>Call to Order</b>  <b>SFEI Roll Call and Determination of Quorum</b>  <b>ASC Roll Call and Determination of Quorum</b>  <b>Review and Approval of Agenda – ASC Board</b>  <b>Review and Approval of Agenda – SFEI Board</b></p>	<p>10:00 am          Jim Fiedler</p>
2.	<p><b>Public Comment</b></p>	<p>10:10 am          Jim Fiedler</p>
3.	<p><b>Action: Consent Items</b>  <i>Attachment 1 – Sept. 11, 2015 Meeting Minutes and Action Items – <a href="#">page 3</a></i>  <b>Desired Outcome:</b> Approval of Consent Items          - Vote by ASC Board          - Vote by SFEI Board</p>	<p>10:15 am          Jim Fiedler</p>
4.	<p><b>Executive Director Report</b>  <i>Attachment 2 – Executive Director's Report – <a href="#">page 7</a></i>          a. News Stories on Three Reports <a href="#">page 11</a>          b. Microplastics Factsheet <a href="#">page 25</a>          c. SFEI/ASC Winter 2015 Newsletter <a href="#">page 29</a></p>	<p>10:35 am          Warner Chabot</p>
5.	<p><b>Program Report</b>          Program Updates on:          d. Baylands Goals Report - Letitia Grenier          e. Microplastics - Rebecca Sutton          f. Green Plan IT - Jing Wu &amp; Jennifer Hunt          g. SF Bay Nutrients - Emily Novick &amp; Phil Bresnahan</p>	<p>10:50 am          Program Directors</p>
6.	<p><b>Report on Executive Committee of Nov 20, 2015</b>  <i>Attachment 3 – Draft Minutes of Nov 20, 2015 Meeting – <a href="#">page 35</a></i>  <i>Attachment 4 – Board Member Roster – <a href="#">page 37</a></i>  <b>Desired Outcome:</b> Confirm Executive Committee Actions</p>	<p>11:50 am          Jim Fiedler</p>
7.	<p><b>Board Member Reports</b></p>	<p>Noon          Board Members</p>

8.	<b>Adjourn Joint Business Meeting and Call ASC Meeting to Order</b>	Noon
	<b>LUNCH</b>	12:10 – 12:40 pm

***San Francisco Estuary Institute Business Meeting***

<b>SFEI 1.</b>	<b>Action: Operations and Program Plan Update</b> <i>Attachment 5 – October 2015 Financials – <a href="#">page 39</a></i> <i>Attachment 6 – Updated FY16 Q2 Program Plan – <a href="#">page 43</a></i> <b>Desired Outcome:</b> Accept Financials and Approve Program Plan	12:40 pm Warner Chabot Lawrence Leung
<b>SFEI 2.</b>	<b>Adjourn SFEI Meeting</b>	1:10 pm

***Aquatic Science Center Business Meeting***

<b>ASC 1.</b>	<b>Action: Operations and Program Plan Quarterly Update</b> <i>Attachment 7 – Updated FY16 Q2 Program Plan – <a href="#">page 47</a></i> <b>Desired Outcome:</b> Approve Program Plan - Vote by ASC Board	1:20 pm Warner Chabot Lawrence Leung
<b>ASC 2.</b>	<b>Adjourn ASC Meeting</b>	1:40 pm

**SFEI Future Agenda Items:**

Consider Business model options  
Board Retreat

**ASC Future Agenda Items:**

Ethics training

**(Proposed) 2016 Board Meeting Dates**

**March 4 (or 11<sup>th</sup>)**

**June 24**

**September 9**

Attachment 1

***Draft***

Action Items and Meeting Minutes of the  
Aquatic Science Center and the San Francisco Estuary Institute  
Board of Directors

September 11, 2015

**Action Items**

#	Action Item	Who?	When?	Status
1	Board Retreat date			
2	Add overhead multiplier to ASC Project Description table	Lawrence Leung		

**Draft Meeting Minutes of the  
Aquatic Science Center and the San Francisco Estuary Institute  
Board of Directors  
September 11, 2015**

Directors Present:

Director Name	Board Position	Representation	Affiliation	ASC	SFEI
Pamela Creedon (called in)	SFEI Secretary	Regulatory- RB5	Central Valley Regional Water Quality Control Board	X	X
Jim Fiedler	Chair	Management	Santa Clara Valley Water District	X	X
Ann Hayden	Member		Environmental Defense Fund	X	X
Jim Kelly	Member	Management	GM Contra Costa County Sanitary District - retired	X	X
Skyli McAfee	Member		The Nature Conservancy	X	X
Adam Olivieri	Member	RMP, Science	EOA, Inc.		X
Laura Pagano	Member	RMP, BACWA	San Francisco Public Utilities Commission, Wastewater Enterprise	X	X
Darrin Polhemus	Alt for Vicky Whitney	Regulatory - SWRCB	State Water Resources Control Board	X	
Alan Ramo	Member	Environmental	Golden Gate University - Retired		X
Barbara Salzman	Member	Environmental	Marin Audubon Society	X	X
Prabhakar Somavarapu	Member	Management	Sacramento Regional County Sanitation District, Sac Area Sewer District	X	X
Kirsten Struve	Alt for Dave Williams	RMP - BACWA	City of Palo Alto	X	
Dave Tucker	Member	Management	City of San Jose - Retired	X	X
Tim Vendlinski	Member (non-voting)	Regulatory - EPA	EPA Pacific Southwest Region	X	X
Bruce Wolfe	Member	Regulatory - RB2	San Francisco Bay Regional Water Quality Control Board	X	X

**Others Present:**

Warner Chabot, Executive Director, SFEI  
 Jay Davis, Program Director, Bay Regional Monitoring Program, SFEI  
 Phil Trowbridge, RMP Program Manager, SFEI  
 Chuck Striplen, Associate Environmental Scientist, SFEI  
 Lawrence Leung, Associate Finance Director, SFEI  
 Joanne Cabling, Admin Assistant, SFEI

## Joint Business Meeting

- 1. Call to order, determination of quorum, review and approval of agenda for Joint Board and individual ASC and SFEI business.** - The Meeting was called to order at 10:10 AM. The agenda was approved.
- 2. Introduction to New Board Members**  
Each present board member gave an introduction about themselves to the new board members. The new board members, Skyli, Ann and Jim also introduced themselves.
- 3. Public Comment** - None
- 4. Action: Consent Items** - June 26, 2015. Meeting Minutes and Action Items were presented to the Board. Motion to approve was moved by Dave Tucker, seconded by Laura Pagano. Board approved. Jim Kelly, Ann Hayden and Skyli McAfee abstained from voting.
- 5. Executive Director's Report** - Warner Chabot gave a brief overview on SFEI-ASC's external accomplishments and internal programs including Russian River RMP, North Coast Watershed Monitoring, Bay and Delta Reports and collaboration with BCDC.
- 6. Program Updates** - Phil Trowbridge presented an overview of the Regional Monitoring Program. Warner Chabot and Chuck Striplen presented RB1's request for advice for the North Coast Water Monitoring and small agricultural operations. Board members discussed the pros and cons of the the proposed project.
- 7. Discuss SFEI-ASC Contracting with State Agencies** - Warner Chabot gave a brief overview of how Prop 1 would impact funding from State Agencies and the overall financial health of SFEI-ASC. This includes looks for other sources of funding.
- 8. Executive Session - Discussion of Executive Director Performance Evaluation**
- 9. Adjourn Joint Business Meeting**
- 10. ASC 1 - Operations and Program Plan Update** - Lawrence Leung gave an update on new ASC projects. Motion to approve was moved by Dave Tucker, seconded by Jim Kelly. Board approved.
- 11. ASC 2 - Adjourn ASC meeting. Call SFEI meeting to Order.**
- 12. SFEI 1 - Operations and Program Plan Update.** - Lawrence Leung presented the FY14/15 Financial Summary to the Board. Motion to approve was moved by Barbara Salzman seconded by Prabhakar Somvarapu. Board approved.
- 13. SFEI 2 - ADJOURN SFEI MEETING at 1:20 PM**



**To: Board of Directors**  
**From: Warner Chabot**  
**Re: Executive Director's Report**

**Summary** – SFEI has experienced a very successful, but intensely busy 3 months. The following is a summary of our progress

1) **Three Major Reports - *Pulse of the Bay*, *State of the Estuary* and *Baylands Goals & Climate Change***: SFEI was the primary author of three essential reports on the current status and future of the San Francisco Bay and Delta.

- Our ***PULSE of the Bay***, conducted for the 23<sup>rd</sup> year of the Regional Monitoring Program was a cornerstone of September's "State of the Estuary" conference.
- We were the primary author of the ***State of the Estuary*** report, on behalf of the San Francisco Estuary Partnership.
- Finally, SFEI provided the lead scientist and lead author (Letitia Grenier), for ***Baylands Goals and Climate Change*** report. This report was an effort of 21 agencies and organizations (under the leadership of the Coastal Conservancy. The document provides a blueprint for region wide leadership to achieve a goal of 100,000 acres of restored tidal wetlands in S.F. Bay by 2030 to address the twin challenges of sea level rise and coastal flooding from extreme weather.
- **SFEI Briefings for Elected official staff** – SFEI has conducted briefings on the ***Baylands Goals*** report for local and state elected officials as well as editorial writers. This includes presentations to:
  - **Bay Area Regional Collaborative** – ABAG, BCDC, MTC and the AIR Board,
  - **San Francisco Exploratorium** – With SF City Planning and SPUR
  - **West Contra Costa Mayors and Supervisors**
  - **Bay Planning Coalition**
  - **Sacramento Legislators & Staff** - We plan to work with Assemblyman Tony Thurmond to provide a Sacramento briefing to Bay Area legislators and their staff.
- **Extensive Media coverage** – All three reports have received extensive media and editorial coverage, with SFEI being the most quoted and referenced experts in these news reports.
- **Editorial Coverage** – We've assisted NGO leaders and state officials to prepare and publish guest editorials on the issues raised by the above three reports.
- **Editorial Board meeting** – We recently joined the Bay Area Council, Coastal Conservancy and Save the Bay in briefing for the SF Chronicle's Editorial Board. An editorial is expected before Christmas.

- **John King, the Chronicle's Architecture & Urban Design Critic** – We've also collaborated with the SF Chronicle's John King, to produce several stories related to the challenges of sea level rise for urban and agricultural shorelines around the Bay and Delta.
- **New York Times (Tuesday) Science Section** – The NY Times has sent a reporter to SFEI to interview Robin Grossinger and to write a piece focused on Robin's landmark, Historical Ecology work.
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## 2) Plastic Microbeads

- A small \$10,000 study and science poster on plastic microbeads in S.F. Bay, conducted as part of the Regional Monitoring program, has generated a surprising level of news coverage.
- **Senator Feinstein** - Senator Feinstein's office contacted SFEI and requested a briefing. We met with her Deputy California Director and offered in response to her request, offered a series of options for her engagement on the issue. At her request, we also offered a list of possible S.F. Bay Field trips that she or her staff could take to better understand aquatic issues in and around SF Bay. - Governor signed a bill to ban (We were led to believe that the Senator encouraged him to do so.)
- **Governor's Action** – Soon after our meeting with the Senator, the Governor signed a bill to phase out plastic microbeads in personal care products sold in California.
- **Meetings with the EPA** – We've also been invited to provide a briefing on the microbead topic for Jared Blumenfeld, the EPA's Western Region Director.

## 3) Sediment Management in S.F. Bay

- **Bay Planning Coalition** – SFEI was invited to present the status of our sediment related work to a recent annual workshop on sediment management by the Bay Planning Coalition. We outlined our work on **Sedi-Match**, a project to link sediment dischargers with wetlands restoration projects.
- **BCDC** – SFEI is also working with BCDC on the appropriate science for their revised Bay Fill policy.

**4) Flood Control – SFEI will** coordinate with Carl Morison on Annual BAFPA to identify science issues and policy issues to address key Flood control issues.

**5) 'Resiliency By Design' Competition** – BCDC and the San Francisco City Planning Department are partnering with the Rockefeller Foundation to propose an international design competition for shoreline development on the San Francisco Bay shoreline. The completion is modeled after a "post-Superstorm Sandy" competition that developed new, resilient shoreline plans to address sea level rise in New York. The Bay Area completion will promote similar 'resilient designs' for approximately ten locations around the edge of San Francisco Bay. SFEI is participating in the initial discussion of a regional stakeholders group. We have proposed to develop an Ecological Primer to be

provided to all design teams to ensure that they start with essential information on the basic ecological issues and available environmental data on local resources and processes.

- 6) **Drone Research with SCCWRP** – We’re in discussions with SCCWRP (S. CA Coastal Watershed Research Project), to explore joint projects that will use evolving drone technology for innovative monitoring and research purposes.
- 7) **New Hires** – We have added six new employees since the September Board meeting, two each in the three program areas (Clean Water, Resilient Landscapes and Environmental Informatics).

Clean Water	Resilient Landscapes	Environmental Informatics
Philip Bresnahan Rusty Holleman	Erica Spotswood Emily Clark	Lawrence Sim Lorenzo Flores

- 8) **Brown Bags** – We have increased our use of special “Brown Bag” guest speaker lunches for staff. These lunches bring both SFEI staff and outside experts from academic and other institutions to brief staff on emerging issues. Past lunches have covered issues from drone technology, to groundwater management to innovative regional planning issues.
- 9) **SFEI Business Model Options** – Most of SFEI’s revenue comes from the RMP, State and Federal grants and contracts. The allowable overhead limits on state and federal grants continue to be restricted. This greatly limits our ability to engage in these programs and to maintain financial stability. Therefore, we are continuing our efforts to:
  - a) Discuss these limitations with state officials,
  - b) Explore options to expand SFEI’s business opportunities in the philanthropic and private sector to diversify our revenue stream.
- 10) **Quarterly Newsletter** – Our Winter Newsletter went out this week. A copy is attached.

**Attachments:**

- A) News Stories & Editorials on Bay/Delta reports – Pgs.11 to 24
- B) Fact Sheets on Microplastics in S.F. Bay – Pgs. 25 to 28
- C) SFEI Winter Newsletter – Pgs. 29 to 34

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# San Francisco Chronicle

## S.F. Bay shows signs of progress in biennial report

By Peter Fimrite, Wednesday, September 9, 2015

The erstwhile murky waters of San Francisco Bay are mostly clean enough to swim in, and the fish are essentially edible if you can shrug off the mercury and PCBs left over from mining and industry, a state-of-the-bay report revealed Thursday.

### Bad beaches



Source: San Francisco Estuary Institute John Blanchard / The Chronicle

The Pulse of the Bay report released by the [San Francisco Estuary Institute](#) compiled data on water quality, habitat, chemicals and bacteria into its biennial report, which also predicted water quality and the general outlook for the bay 50 years from now.

The results show that water quality is generally fair to good, but pollutants in the water are trouble for swimmers from time to time, especially during the winter. Aquatic habitat is improving, according to the report, with most chemicals measuring below the threshold of concern. Still, mercury pollution, PCBs, trash and invasive species are conspiring to muck up the works.

“It seems there is a ring of contamination focused in certain areas, but concentrated on the edge of the bay,” said [Jay Davis](#), a senior scientist with the Estuary Institute, which conducted the study as part of a collaborative regional monitoring program.

### Old chemicals linger

The bay’s biggest toxic bogeymen are left over from past exploitations. Mercury was used in gold mining during the Gold Rush, and there were mercury mines along the coast range throughout the 1800s, specifically the New Almaden quicksilver mine in the Capitancillas range in Santa Clara County.

PCBs, which were widely used in electrical equipment and building materials until they were banned in 1979, also still linger.



Jay Davis of the San Francisco Estuary Institute views the bay from a fishing pier in Emeryville.

Davis said the water around the Oakland and Richmond harbors and Hunters Point have high concentrations of PCBs. The chemical also lingers in high concentrations along the shoreline on the western side of the South Bay.

He said mercury is still seeping down from rivers and creeks and working its way into San Francisco Bay. Concentrations in sediment are highest in San Pablo Bay, he said. Meanwhile, mercury entombed in the bay mud, possibly combined with mercury emissions from coal-fired plants in Asia, continues to find its way into the food web. Fishermen have long been advised to limit their consumption of California halibut and striped bass caught in the bay as a result of mercury contamination.

Surprisingly, the report found that chinook salmon and jacksmelt caught in the bay are safe to eat.

“Once mercury and PCBs spread across our watershed, they don't degrade,” said Davis, noting that PCBs have been tracked for 20 years and mercury levels have been monitored for 40 years. “We see no reduction. There is no sign of decline.”

One needn't go back in history to find sources of pollution, though. The garbage and sewage that washes into the bay every year remains a big problem, the researchers reported. Swimming conditions were deemed poor on two of 28 beaches studied during the summer and six of 28 in the winter, mainly because of bacteria that poured out of storm drains and from leaking sewer pipes.

### **Worst places to swim**

The worst place to swim, according to the report, was Marina Lagoon, including Aquatic Park and Lakeshore Park, in San Mateo County, which was polluted all year. The other risky swim areas — at least during periods of wet weather when there is heavy runoff from storm drains — were Oyster Point, Coyote Point and Kiteboard Beach in San Mateo County and Candlestick Point in San Francisco.

Davis said some species are also being negatively impacted by invasive species, trash, especially plastic, and pollutants.

The study documented a big reduction in flame retardants known as polybrominated diphenyl ethers, or PBDEs. High concentrations of PBDEs were found in the bay over the past two decades, prompting a decision in 2006 to begin phasing out the chemicals. “We've seen sharp declines over the past 10 years,” Davis said. “This is one of the best success stories in the management of the estuary.”

The Pulse report includes projections from six marine scientists on how the bay will look in 50 years. They predict storm water runoff and wastewater, including the stuff that flows into the sewer from toilets, will be recycled and turned into drinking water by then, eliminating discharges into the bay all together. “There won't be wastewater anymore in 50 years,” Davis said. “The water will be used as a resource.”

The improvements in water quality will be counteracted somewhat by climate change, which will reduce flows of freshwater from the mountains into the bay by 2065, the experts say.

The sea level will also rise, deepening the bay, engulfing much of the present-day shoreline, increasing water temperatures and changing the hydrology of the estuary, according to the report.

“All these things will cause the food web to be different, and there could be big changes in species,” Davis said. “The bay is on track to getting cleaner, but it's a mixed bag because sea level rise and the changes to the ecology of the bay will make it hard on our native species.”

The Pulse of the Bay report, released every other year for the past 24 years, was prepared as a companion to an even more comprehensive State of the Estuary report coming out next week.

*Peter Fimrite is a [San Francisco Chronicle](#) staff writer. E-mail: [pfimrite@sfgate.com](mailto:pfimrite@sfgate.com) Twitter: [@pfimrite](#)*

<http://www.sfgate.com/science/article/S-F-Bay-shows-signs-of-progress-in-biennial-6494438.php#photo-8603861>

# San Francisco Chronicle

NORTHERN CALIFORNIA'S LARGEST NEWSPAPER

BAY AREA & STATE

## Sink or swim: Rising tides largely ignored in S.F. development

By [John King](#), September 15, 2015



*People walk along Pier 7 in San Francisco, Ca. on Tuesday, September 15, 2015.*

A powerful state agency on Wednesday will kick off what is described as a multiyear effort to convince us that it's high time the Bay Area begins to focus on how we'll cope with rising sea levels in the decades ahead. Good luck with that.

While the consensus of credible scientific forecasters is that the water levels in San Francisco Bay will rise at least 3 feet by 2100, distant threats are no match for topical dramas. Especially not in today's region, where the two-edged sword of prosperity has elected officials and community activists battling over issues like gentrification and an overloaded transportation network.

The latest example of environmental apathy is a stalled design competition to help the general public understand how such prosaic tasks as wetland restoration could enrich the region's landscape. Instead, it's on hold for at least another month.

On its own, a delay like this isn't fatal. But it points to a larger danger. The current attitude of politicians and everyone who's not an environmental advocate — "Yeah, we need to start focusing and Donald Trump said *what?*" — could squander an opportunity that future generations won't have.

"We need our leaders today to think about the Bay Area 100 years from now," said Warner Chabot, executive director of the [San Francisco Estuary Institute](#), a scientific research organization. "Finding creative solutions to the long-term challenge of rising sea levels is the fundamental challenge of elected officials in our region for the next decade."

## Projects under review

Wednesday's event marks the 50th anniversary of the [Bay Conservation and Development Commission](#), a state agency that must review all projects proposed within the bay and within 100 feet of its shoreline. It was created for a simple reason: to keep shallow waters from being filled by growth-hungry municipalities. It's also the one government agency taking a large view of the likelihood that from here on the bay is more likely to grow than shrink.

That's why the morning of panels being held at the Exploratorium comes bundled under the assertive title: "Sink or Swim: Adapting to Rising Tides in the San Francisco Bay." The keynote speech will be by architect [William McDonough](#), one of the profession's best-known advocates of threading sustainable design into all aspects of planning and development.

"We have to shift the conversation," said Larry Goldzband, executive director of the commission. "People need to start re-envisioning how we live with the bay."

The challenge is to commit resources and political capital to such an effort — and there's where the talk often isn't backed by action.

## Visions of bay evolution

A key feature of "Sink or Swim," say participants and advisers, was to be the announcement of a major design competition to conjure architecturally compelling, environmentally sound visions of how a much-altered bay can evolve — a transformed waterfront at once defensive and distinctive. The sponsors would be not only the commission but also the cities of San Francisco, Oakland, San Jose and Berkeley.

Apparently, though, mid-level officials in San Francisco were given the task of lining up the funds that would be needed for such an effort. Talks with various foundations were promising, by all accounts, but commitments aren't yet in hand. So, no high-profile kickoff.

You can't blame the bureaucrats for coming up short: If Mayor Ed Lee or his top staff aren't making the competition a priority, why should foundations sign six-figure checks to get a competition off the ground? Asked about the delay, an adviser to Lee emphasized the work done in such areas as renewable energy and the mayor's [visit to the Vatican in July](#) to take part in an international discussion related to climate change.

"Climate change is on the front burner for the mayor and the mayor's office," said Roger Kim, an adviser to Lee on environmental affairs. In terms of planning ahead for sea level rise, Kim called the competition "an excellent initiative that we're putting together to come out of the gate with a well-resourced program. The mayor is still very much committed to it."

## 'Challenge,' not competition

Gil Kelley, San Francisco's director of citywide planning, indicated that the target now is late October or November to launch what he calls a design "challenge" rather than competition. "We've been thinking about how to introduce sea level rise at a local scale to the general public so that it's not too technical or too scary," Kelley said. "We want to tap peoples' imagination about how we can make tomorrow's waterfront an exciting place to be."

This is what happened in and around New York City after the devastation of Hurricane Sandy in 2012: An effort called Rebuild by Design drew on federal relief funds to select 10 interdisciplinary design teams and have them pursue "regionally scalable but locally contextual solutions that increase resilience" and do so with contemporary flair. The organizers of that effort now have an independent consulting firm that was hired by San Francisco's Planning Department earlier this year.

The difference is that the Rebuild by Design initiative was fueled by an urgency born of disaster. In the Bay Area, what we've seen so far are midwinter king tides lapping across Highway 101 in Marin County or rainstorm-related floods of short duration in low-lying areas near the bay. Why try and get ahead of the climate-change curve when an earthquake could strike any moment or there's a homeless guy camping out down the block?

The answer, simply, is that this region has charted an unknown course before. The 1960s quest to “save the bay” was likely nothing that a metropolitan region before had attempted, and its success has been a defining factor of our region’s vitality ever since.



*The sea wall that separates the bay from the Financial District is pictured in San Francisco, Ca. on Tuesday, September 15, 2015.*

### **More trailblazing needed**

Such trailblazing could happen again. The Bay Area could craft wetlands or landscaped levees that would protect existing communities and roadways while enhancing public access to a varied shoreline. New development could be done in a way that can generate funds for such needed infrastructure upgrades as rebuilding the aged seawall of rocks and concrete that keeps the bay from reclaiming San Francisco’s Financial District.

Chabot at the Estuary Institute is optimistic that the urgency will come. “There’s no reason the Bay Area should not be a model, for the nation if not for the world,” Chabot said. “One can only hope that we have elected officials who want to be visionary civic leaders, not just good day-to-day leaders.”

*John King is the San Francisco Chronicle’s urban design critic. E-mail: [jking@sfchronicle.com](mailto:jking@sfchronicle.com) Twitter: [@johnkingsfchron](https://twitter.com/johnkingsfchron)*

# San Jose Mercury News

## Rising seas threaten San Francisco Bay and Delta wetlands and land

By Denis Cuff [dcuff@bayareanewsgroup.com](mailto:dcuff@bayareanewsgroup.com) 9-17-15



Canada geese take off from a detention basin and seasonal wetland at the Ohlone College Newark Center on Jan. 3, 2012

OAKLAND -- Rising sea levels threaten not only structures around San Francisco Bay and the Delta but the shoreline marshes critical to the environmental health of the estuary, and the results could be "catastrophic" if action is not taken, scientists warned Thursday.

Predicted sea level rises of 3 feet or more by 2100 resulting from climate change could wash out and cover shallow tidal wetlands that act as important nurseries and habitat for wild fish, birds and other aquatic sea life, according to the scientific report on the state of the bay-Delta estuary.

To keep the wetlands from sinking under water, the scientists called for a major, sustained public campaign to build up and replenish those marshy areas with sediment.

Creeks, streams and rivers used to carry the silt and dirt naturally into the bay and Delta. Construction of dams, levees and shoreline developments, however, has largely cut off those flows in the past 160 years and also filled in most of the wetlands.

"We face a lot of problems if we lose our wetlands, and rising sea levels are making this an increasing challenge," said Letitia Grenier, scientist at the San Francisco Estuary Institute, an environmental research and policy group.

The 100-page report by dozens of scientists in the San Francisco Estuary Partnership provides a comprehensive look at the environmental health of the estuary, the mixing zone for Pacific Ocean seawater and fresh water from California's biggest rivers.

The document gave a mixed report card to the environmental condition of the bay and Delta. Progress has been made in reducing San Francisco Bay water pollution and in restoring previously diked off wetlands to tidal action.



Water collects in a detention basin and seasonal wetland at the Ohlone College Newark Center.

Progress has been made in reducing San Francisco Bay water pollution and in restoring previously diked off wetlands to tidal action. But rising sea levels, reduced freshwater flows from water diversions, declining wild fish populations and an invasion of non-native species like nutrient-gulping Asian clams have put the environment at risk, the report says.

San Francisco Bay is in "fair" condition overall, and the Sacramento San Joaquin River Delta and Suisun Bay are in "poor" condition because of many man-made changes, the report says. "Bay wetlands are starved of sediment needed to sustain their growth, placing them in jeopardy from sea level rise," the scientists wrote.

The threat to wetlands is manageable if the region can come up with a bold plan to replenish marsh areas with sediment, and designate some areas for wetlands to expand inland, said Josh Collins, chief scientist with the San Francisco Estuary Institute. "The balance between water and sediment has been thrown out of whack," he said. "Doing nothing is going to lead to very serious or catastrophic results. It takes a regional response."

Options for fixes include trucking or piping in sediment trapped behind dams, or diverting dredge spoils now dumped in the ocean and putting them in wetlands. Some scientists have suggested modifying dams to flush out the sediment-rich water at the bottom of reservoirs rather than releasing the more particle-free water at the top. Collins said state, federal and regional agencies are trying to come up with guidelines on how to deliver the sediment.

On Wednesday in San Francisco, the Bay Conservation Development Commission kicked off a long-term effort to determine how and where to protect businesses, homes and other structures from rising sea levels. In tandem with that effort, many government agencies are trying to determine how and where to protect or restore wetlands to act as a buffer against increasing flooding risks.

"Some of these marshes will serve as sponges," said Zach Wasserman, the chairman of the Bay Conservation and Development Commission, "and there are other urbanized areas we will need to build up barriers to protect from rising waters."

Wasserman said a public-private partnership called the San Francisco Estuary Authority is considering sponsoring a Bay Area-wide ballot measure seeking a parcel tax next year to finance flood protection and wetland restoration.

Contact Denis Cuff at [925-943-8267](tel:925-943-8267). Follow him at [Twitter.com/deniscuff](https://twitter.com/deniscuff)  
[http://www.mercurynews.com/news/ci\\_28825545/rising-seas-threaten-san-francisco-bay-and-delta-wetlands-and-land](http://www.mercurynews.com/news/ci_28825545/rising-seas-threaten-san-francisco-bay-and-delta-wetlands-and-land)

# Marin Independent Journal

## Marin's bay shores in better health, more work to be done, report finds

Mark Prado 9-20-15



San Pablo and San Francisco bays off Marin's shores are in better health than in prior years, but are jeopardized by the effects of climate change, according to a new report released this week.

The 96-page "State of the Estuary 2015," a comprehensive health report for the San Francisco Bay-Delta Estuary by the San Francisco Estuary Partnership, uses data contributed by more than 30 scientists to assess the status of various parts of the ecosystem.

The verdict?

"In many regards the bay is as healthy as it has been in a long time," said San Anselmo native Josh Collins, chief scientist with the San Francisco Estuary Institute, an environmental research and policy group.

He spoke from an estuary conference this week in Oakland where the report was released. "But some aspects of the bay are slower to heal," he added. "There are still longer-lasting pollutants in the bay, but they are not being put in the system anymore."

Collins said it is important for agencies that manage watersheds to do their part in terms of water quality and sediment release.

Creeks, streams and rivers used to carry the silt and dirt naturally into the bay and Delta. Construction of dams, levees and shoreline developments, however, have largely cut off those flows in the past 160 years. That effect combined with rising seas, could damage wetlands and bay health.

Predicted sea level rises of 3 feet or more by the year 2100 resulting from climate change could wash out and cover shallow tidal wetlands that act as important nurseries and habitat for wild fish, birds and other aquatic sea life, according to the report.

To keep the wetlands from sinking under water, the scientists called for a major, sustained public campaign to build up and replenish those marshy areas with sediment.

“We face a lot of problems if we lose our wetlands, and rising sea levels are making this an increasing challenge,” said Letitia Grenier, scientist at the San Francisco Estuary Institute. Some progress has been made in restoring previously diked wetlands to tidal action.

In Marin, the former Hamilton Airfield, Bel Marin Keys, Bahia and other nearby areas have been acquired and have moved forward with restoration planning and actual work, helping the bay’s health. At Hamilton, dredge spoils from the Port of Oakland were used to build marsh and wetlands.

“The Hamilton project is a good model,” Collins said. “That took sediment from within the bay, and instead of dumping it out on the ocean, it was used in a beneficial way.” But in other parts of the bay sea levels threaten the shoreline marshes and the results could be “catastrophic” if action is not taken, scientists warned.

Karina Nielsen, director of San Francisco State University’s Romberg Tiburon Center for Environmental Studies, who has attended the conference, said the bay needs support.

“The bay has come along,” she said. “The water quality is good enough to swim in and that is saying something. But there is still a lot to do. Bay warming and sea-level rise and sediment management are issues. There are solutions, but it takes an investment to actually restore the bay.”

The state-created San Francisco Bay Restoration Authority is looking to put a \$12-per-parcel regional tax measure on the ballot next year to raise \$500 million over 20 years to fund sea-level rise work and wetland restoration projects.

Some of the report’s findings for the North Bay:

- Populations of medium and small shorebirds are stable or increasing
- Endangered Ridgway’s rail populations have rebounded since a 2007-2009 decline
- Native fish populations are generally healthy, although non-native species are increasing in the bay
- Dabbling ducks are increasing, while diving ducks are declining significantly
- Nesting sites of herons and egrets are stable or increasing, but brood size is showing a slight annual decline

“We are making progress, but the bay is nowhere near where it should be,” Romberg’s Nielson said.

*The Bay Area News Group contributed to this report.*

# San Jose Mercury News

## San Francisco Bay: Race to build wetlands is needed to stave off sea-level rise, scientists say

By Paul Rogers 10-18-15



The Facebook campus sits next to the Menlo Park Baylands amid the rich colors of the drying mud flats in Ravenswood Slough in this aerial view taken Wednesday afternoon, Sept. 2, 2015, in Menlo Park, Calif. (Karl Mondon/Bay Area News Group) ( Karl Mondon )

San Francisco Bay is in a race against time, with billions of dollars of highways, airports, homes and office buildings at risk from rising seas, surging tides and extreme storms driven by climate change.

And to knock down the waves and reduce flooding, 54,000 acres of wetlands -- an area twice the size of the city of San Francisco -- need to be restored around the bay in the next 15 years.

That's the conclusion of a new report from more than 100 Bay Area scientists and 17 government agencies that may help fuel a regional tax measure aimed at addressing the looming crisis.

The other alternative, the report found, is to ring large sections of the bay with seawalls and levees in the coming decades. But that would destroy many of the marshes and probably cost taxpayers more in the long run.

"If we don't change our approach, we'll see the marshes and mud flats start to drown," said Letitia Grenier, a biologist with the San Francisco Estuary Institute, a scientific research organization in Richmond.

"They'll start to erode," said Grenier, one of the report's main authors. "We'll have bigger waves coming in on high tides and storms -- and more flooding. We'll lose our wildlife. And eventually the

wetlands will be gone. You'll see levees and concrete seawalls. The water in many places will be higher than the land, like it is in New Orleans."

San Francisco Bay already has risen 8 inches since 1900, according to the tidal gauge at Fort Point, underneath the Golden Gate Bridge.

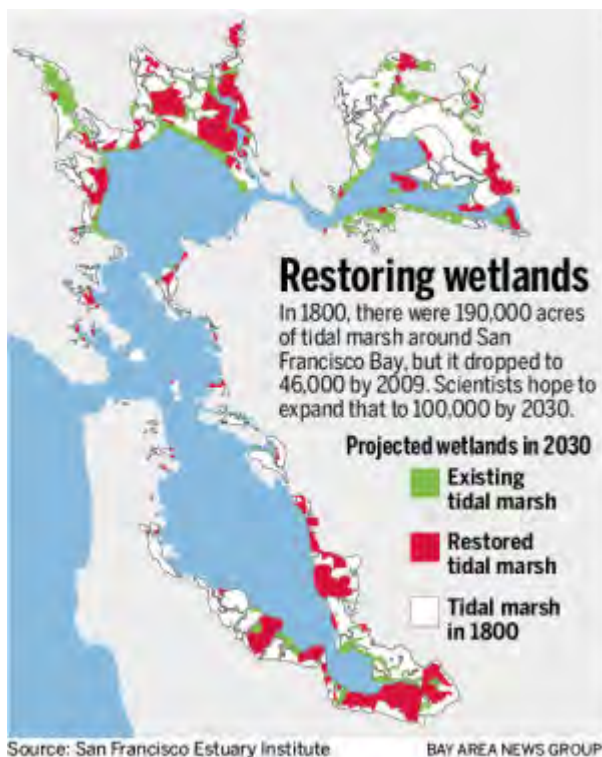
Driven by melting ice and expanding warming water, the bay and the Pacific Ocean off California will rise up to 1 foot in the next 20 years, 2 feet by 2050 and up to 5 feet by 2100, according to a 2012 study by the National Academy of Sciences.

Last year was the hottest year recorded on Earth since modern temperature recordkeeping began in 1880. This year is on pace to break that record. And the 10 hottest years all have occurred since 1998.

Similar to the way that Hurricane Sandy sent ocean waters pouring into New York City subways three years ago, low-lying areas around San Francisco Bay face major threats as sea level rises, the report found.

Experts say some places will need seawalls, including the San Francisco and Oakland airports, Treasure Island, downtown San Francisco and shoreline communities like Foster City.

But in other places, there's still time to work with nature rather than against it, according to the report, titled "The Baylands and Climate Change: What We Can Do." That means restoring large sections of hayfields in the North Bay near Highway 37 and former Cargill Salt industrial salt ponds in the South Bay back to tidal marsh, along with areas along the western and eastern sides of the bay.



Experts say time is running out because once the more severe sea level rise starts, restoring wetlands will be more difficult and expensive.

"We're at a critical crossroads. What we do in the next 15 or 20 years will largely determine what San Francisco Bay is going to look like 100 years from now," said Sam Schuchat, executive officer of the California Coastal Conservancy, a state agency that helped coordinate the report.

Wetlands provide natural flood protection by breaking up wave energy. They also filter pollutants, offer recreation for hikers and bicyclists, and are home to hundreds of species of fish and wildlife -- from salmon to snowy egrets to harbor seals.

Since the Gold Rush in 1849, San Francisco Bay has shrunk by a third because of diking, development and filling. That largely stopped in the 1980s because of state and federal laws. Now the goal is to expand the bay back out.

In 1999, there were 40,000 acres of tidal marsh left around the bay, an 80 percent loss from 1800.

Scientists in 1999 wrote a report calling for 100,000 acres to restore the natural processes of the bay. Since then, 6,000 more have been restored, and another 26,000 acres have been purchased by state and federal agencies.

To reach the goal of 100,000 acres of healthy wetlands, the 26,000 acres has to be restored -- and another 28,000 acres purchased and restored.

Total cost estimate: \$1.5 billion, Schuchat said.

"It's a lot of money, but it's cheaper to do it now than to wait for bad things to happen and then do things in a hurry down the road," he said. "We have a shot of maintaining what is really special about the bay and living in the Bay Area."

A coalition of groups -- including Save the Bay, the Bay Area Council, Audubon California and the Silicon Valley Leadership Group -- is working on a \$12 annual parcel tax for all nine counties around the bay. The groups are expected to place the measure, which would raise \$500 million over the next 20 years for wetlands restoration and flood control, on June ballots.

"There's a strong scientific reason for accelerating this marsh restoration work," said David Lewis, executive director of Save the Bay. "The main missing ingredient is funding. The sooner we get started, the more successful it will be."

There are other big challenges, however. Restoring marshes and raising their elevation requires millions of tons of sand and mud. Each year, roughly 2 million cubic yards is dredged out of shipping channels by the Port of Oakland and other harbors. But two-thirds of that is dumped in the ocean because it's the cheapest disposal method.

To use most of it to create new wetlands, federal rules have to be changed. More sediment also can come from cities re-engineering how they route streams to the bay, as well as water agencies removing sediment from behind dams.

"We've been fighting nature for so many centuries, but now we've won," biologist Grenier said. "Now to support ourselves, we need to work with nature."

Paul Rogers covers resources and environmental issues.

Contact him at 408-920-5045. Follow him at [Twitter.com/PaulRogersSJMN](https://twitter.com/PaulRogersSJMN)

**IF YOU'RE INTERESTED** - To read the report titled "The Baylands and Climate Change: What We Can Do," see [www.baylandsgoals.org](http://www.baylandsgoals.org)

# San Jose Mercury News

## Restoring Our Wetlands: A Green Defense Against Sea Level Rise

By Assemblyman Tony Thurmond 10-25-15

Climate change will harm people from all nations. But one segment of humanity is on the front lines: the poor and low-income populations of the world. From the increased frequency of mega-storms like the one that devastated the Philippines in 2013 to rising seas are displacing people of low-lying nations such as Bangladesh, it is the poor who will lose their homes first and suffer the gravest misfortunes.

The same is true here in the Bay Area. Both extreme weather events and sea levels rise will hit lower income communities in “the flats” with shoreline flooding. Communities such as Richmond, Marin City, East Palo Alto, Alviso and Oakland. But we can act now to buffer these communities with a green defense.

Tidal marshes are one of our greatest allies in the effort to make the Bay Area and our low-elevation communities more resilient to climate change. These marshes provide green spaces, wildlife habitat and a wide range of benefits to people such as water purification. They provide a buffer, a line of defense, from storm surges and rising seas. They knock down large waves and absorb floodwaters.

Unfortunately, most of our bay marshes have disappeared over the past two centuries. The flow of nourishing sediment that once allowed them to grow and build up over time has greatly diminished. We must reverse this course. A new report released this week makes the case. “[The Baylands and Climate Change: What We Can Do](#),” combines the research of more than 200 Bay Area scientists and government experts. Read the report at [www.baylandsgoals.org](http://www.baylandsgoals.org). The report presents the latest science and findings on the health and future of the bay’s shore. It then suggests a science-based roadmap to protect our communities.

That roadmap must include more wetlands. A 1999 science collaboration set a goal to restore and conserve 100,000 acres of San Francisco Bay tidal marsh. Today, we have conserved, restored or acquired approximately 72,000 acres. We must accelerate this effort to restore the natural processes that allow marshes to grow to keep pace with sea level rise. We can achieve this by restoring our region’s stream flows and their connections to bay wetlands. This allows more sediment to nourish our marshes. Another source of sediment is the material we currently dredge from shipping and flood control channels. We should be creative, and make it a priority to ensure all sources of sediment are used to grow our wetlands.

The time is now. An accelerated effort could save more than 80 percent of our existing tidal marshes over the next 100 years. The science shows that marshes established by 2030 are more likely to flourish and survive when sea level rise accelerates in the middle of this century. Everyone in the Bay Area, even those living upland, has a stake in this effort. Crucial infrastructure that supports our daily lives from water treatment plants to highways to San Francisco International Airport, are located along our bayshores, in the path of rising seas.

Yes, we may need some so-called hard infrastructure, like levees and sea walls. But first, let’s change how we manage our landscapes and bayshores to promote wetland growth and regeneration. It is a grave injustice that residents of lower-income communities, with far lower carbon emissions per capita than wealthy enclaves, may suffer the most.

Let’s act now to minimize that harm to future generations. We can work with nature, not against it. The legislature should adopt climate action policies that give priority to protect our most vulnerable, disadvantaged communities from rising tides. These actions will ultimately benefit the entire seven million residents of the Bay Area.

**Bio Info:** Assembly member Tony Thurmond (D- Richmond) represents the 15<sup>th</sup> Assembly District. This includes the shoreline communities from Emeryville to Richmond to Hercules

# San Jose Mercury News

## OPINION

### **Mercury News editorial: San Francisco Bay wetlands need to be restored**

*Mercury News Editorial* 10/23/2015

This region is running out of time to protect one of its greatest resources -- the San Francisco Bay -- against the ravages of climate change.

At stake are billions of dollars worth of highways, airports, businesses and homes on land immediately adjacent to the Bay. Water levels have already risen 8 inches since 1900, and they are expected to rise another foot in the next 20 years and two feet by 2050. It may not sound like much, but it could be disastrous.

The dangers are outlined in new report, "The Baylands and Climate Change: What We Can Do ([www.baylandsgoals.org](http://www.baylandsgoals.org))." It makes a strong case for restoring 54,000 acres of wetlands that would both greatly mitigate the damage from rising seas by, among other things, reducing the danger from severe flooding. We can do this. Let's get started.

The San Francisco Bay Restoration Authority is the regional agency that would oversee the project. It should move forward with its plan to place a \$12 annual parcel tax measure before voters in 2016. That would raise \$500 million over 20 years and potentially leverage matching dollars from the state and federal governments to help reach the \$1.5 billion estimated cost.

The federal government spent nearly \$500 million in 2011 helping protect Chesapeake Bay. The San Francisco Bay region, including Silicon Valley, is even more important to the national economy. The damage to the bay that now needs reversing is man-made. Reporter Paul Rogers set out the history in a report on the bay plan in this newspaper last Monday.

The bay has shrunk by more than one-third since the Gold Rush in 1849, thanks to diking, development and filling. State and federal law stopped those practices in the 1980s, and restoration work began in 1999. To date, more than 6,000 acres have been restored, with great results, doubling the bird population in the bay since 2002. An additional 26,000 acres have been purchased to be returned to wetlands. These are part of the 54,000 acre goal. But that leaves 28,000 acres to be bought and restored.

Sea walls still will need to be constructed in some locations, including San Francisco and Oakland's airports. But business and environmental groups around the bay agree that restoring wetlands is greatly preferable from an environmental, recreational and aesthetic standpoint.

The San Francisco Bay's existing wetlands are part of the area's beauty, provide habitat for endangered species and migratory birds and offer recreational opportunities. But wetlands reduce the strength of waves hitting the shoreline and are vital to warding off floods. The height of the wetlands can also be raised by adding sediment.

Business and environmental organizations around the Bay support the restoration plan. So do advocates of low income communities vulnerable to flooding, from Alviso to to Richmond. We hope when voters understand the need, they will agree.

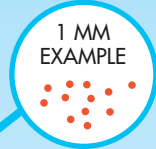
# MICROPLASTIC CONTAMINATION IN SAN FRANCISCO BAY

Contribution No. 770

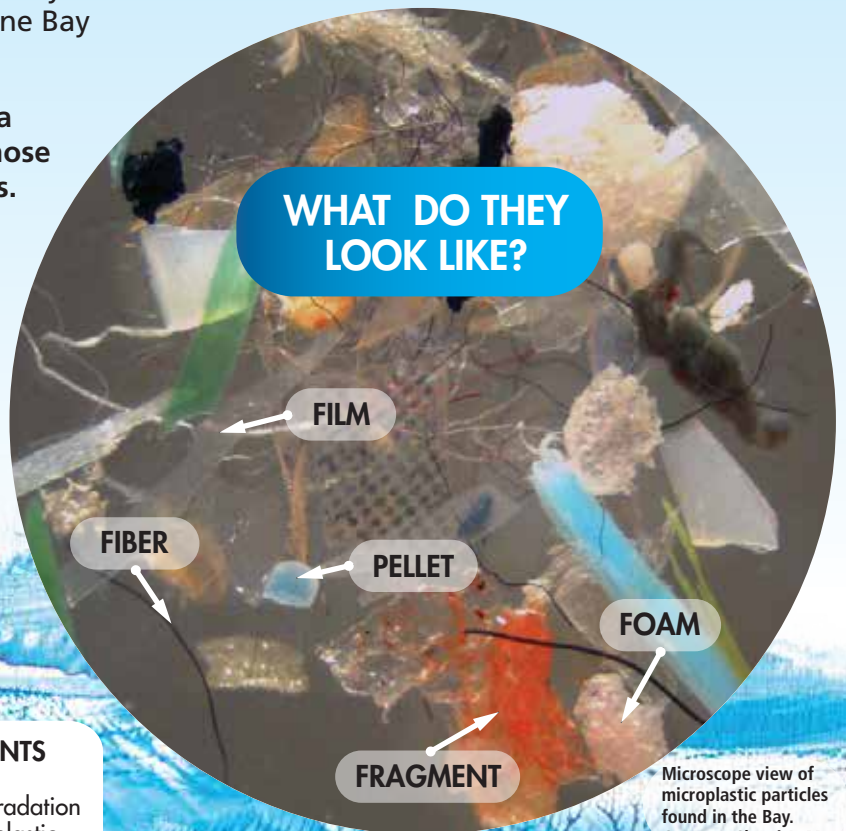
**RMP**  
REGIONAL MONITORING PROGRAM FOR  
WATER QUALITY IN SAN FRANCISCO BAY

[www.sfei.org/rmp](http://www.sfei.org/rmp)

- **Microplastics are tiny particles of plastic five millimeters or smaller, and they enter the environment through human use.** Beauty products with microbeads, synthetic clothing, plastic bags, polystyrene foam packaging, and disposable plastic items can all contribute to microplastic pollution.
- **Wildlife mistake microplastics for food.** When eaten, the tiny particles expose them to pollutants that plastics absorb from their surroundings. Microplastics cause physical harm, and toxic exposures move up the food chain, perhaps reaching people.
- **In a pilot study, microplastic pollution appeared to be greater in San Francisco Bay than in the Great Lakes and Chesapeake Bay.** Microbeads from beauty products and tiny fibers from synthetic clothing were found in all nine Bay water samples.
- **Microplastics passed through Bay Area wastewater treatment plants, even those using the most advanced technologies.** Bay Area wastewater typically had more of these particles than wastewater in other parts of the US, but data are extremely limited. Fibers made up most of the plastics released into the Bay via treated wastewater.



ACTUAL SIZE



## WHAT DO THEY LOOK LIKE?

### MICROBEADS

pellets and fragments used in personal care products such as facial scrubs and toothpastes

### FOAMED PLASTIC PARTICLES

from packaging, cigarette filters, and other items

## KEY TYPES OF MICROPLASTIC POLLUTION

### FRAGMENTS

from the photodegradation of larger plastic items such as plastic bottles

### FIBERS

derived from clothes and fabrics made with synthetic materials (polyester, acrylic) or fishing lines

### NURDLES

pre-production plastic pellets that are molded into larger plastic products

Microscope view of microplastic particles found in the Bay. Courtesy Sherri A. Mason.

**THE REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY (RMP)** is an independent, long-term monitoring program providing policymakers with the information they need to protect this vital urban ecosystem. The RMP is an innovative collaboration between the San Francisco Estuary Institute, the San Francisco Bay Regional Water Quality Control Board, and regulated dischargers.

# MICROPLASTIC POLLUTION IS WIDESPREAD IN BAY AREA WASTEWATER AND BAY WATER

Ian Wren of San Francisco Baykeeper deploying the Manta Trawl. Photo courtesy Meg Sedlak.



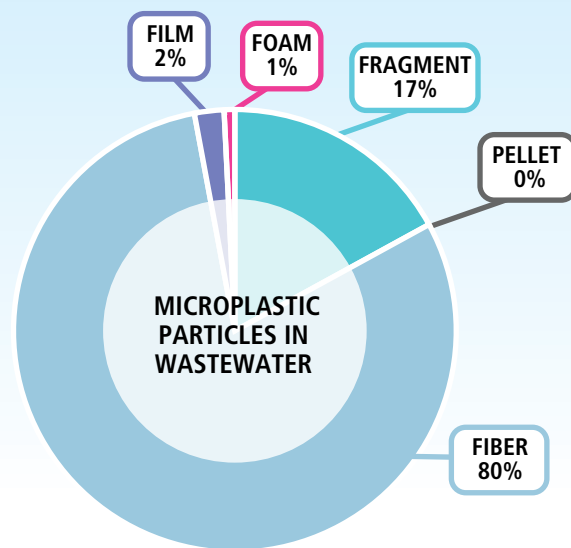
Scientists with SFEI, San Francisco Baykeeper, and the 5 Gyres Institute collected surface water samples at nine locations in the Bay by deploying a Manta Trawl – a device that skims the water surface – for 30 minutes. Additional monitoring is needed to confirm these findings and determine the full extent of Bay microplastic pollution.



## Wastewater

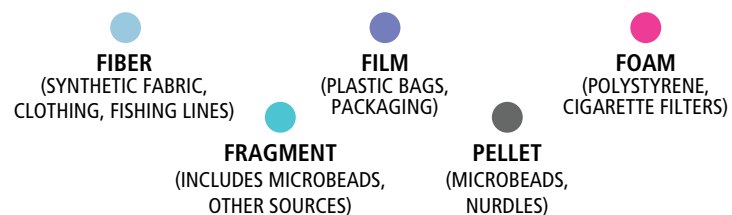
### HOW DO MICROPLASTICS END UP IN WASTEWATER RELEASED TO THE BAY?

Microbeads from the beauty products we wash down the drain and synthetic fibers rinsed from clothing by our washing machines make their way to the Bay because they are too small, light-weight, and inert to be removed by treatment plants.



Fibers made up most of the microplastic particles in wastewater.

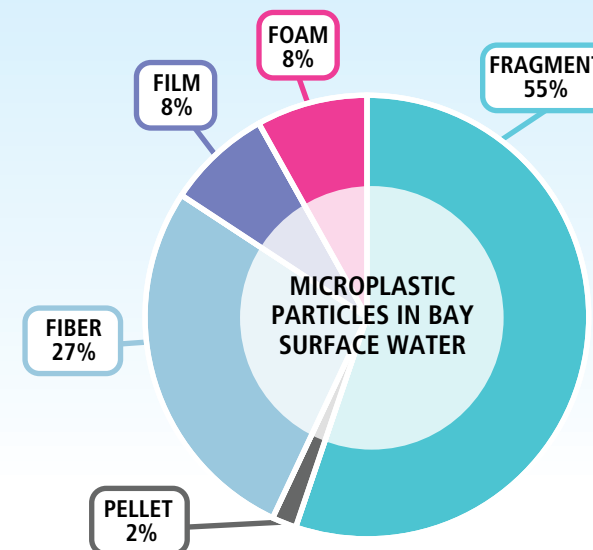
Many of the fragments in wastewater are thought to be microbeads derived from beauty products.



## Bay Surface Water

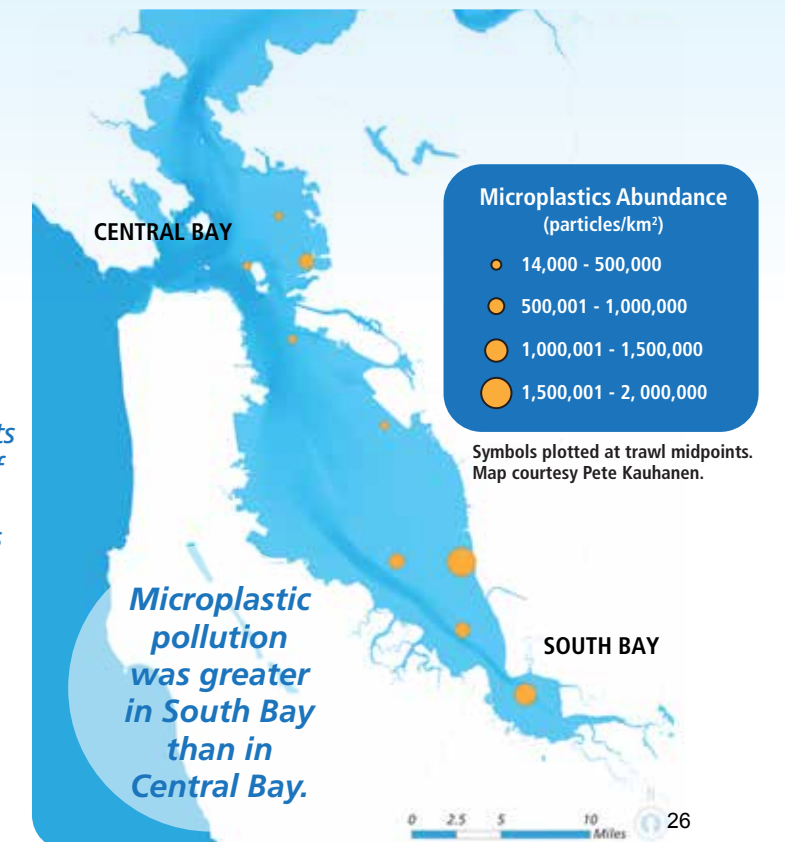
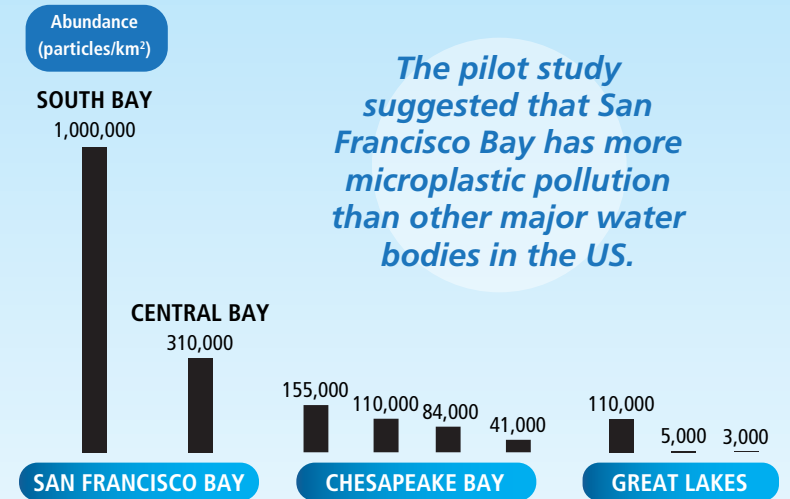
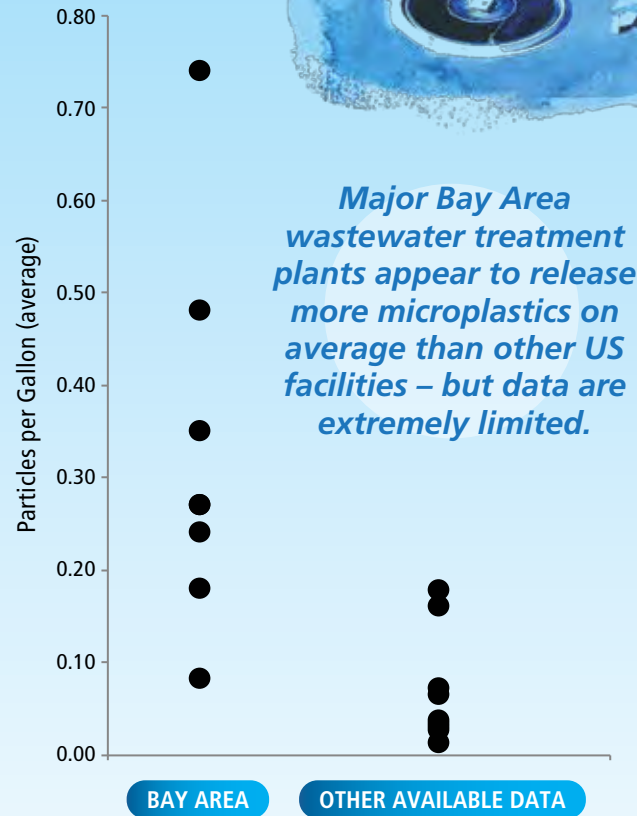
### HOW ELSE DO MICROPLASTICS END UP IN THE BAY?

Wastewater is not the only pathway for microplastics to enter the Bay. Rain carries plastic litter of all sizes from land into the Bay through urban creeks and storm drains. Illegal dumping and wind-borne plastic trash also add to the plastic pollution in the Bay.



Bay surface water contained more fragments and fewer fibers than wastewater. Some of the plastic pollution in the Bay comes from stormwater, which likely has different sorts of microplastic particles than wastewater.

Processes that occur within the Bay, such as breakdown of larger plastic litter, settling of heavier particles on the Bay floor, and ingestion by wildlife can also affect the array of particles found in Bay surface water.



SFEI scientists collected particles from wastewater at eight Bay Area wastewater treatment plants using sieves. The eight plants discharged an average of 0.33 particles of microplastic per gallon. This was more than four times the average of 0.07 particles per gallon observed in a study of nine facilities in other parts of the US, part of a larger study of municipal wastewater treatment facilities that Dr. Sherri A. Mason is completing now.

On average, Bay Area facilities released an estimated 7,000,000 particles of microplastic per day to San Francisco Bay.

## MICROPLASTICS IN FISH

We found 52 particles of plastic in nine small fish caught during Bay surface water sampling. This average of nearly six pieces of microplastic per fish is higher than the one to three pieces typically found in Great Lakes fish.

## WHY ARE WE CONCERNED?

Microplastics accumulate toxic pollutants, and may be ingested by aquatic organisms that mistake them for food. These plastic particles can cause physical blockages, starvation, and increased exposure of wildlife to contaminants.

Microplastics accumulate in digestive organs, and people are most likely to be exposed to them if they consume wildlife whole. However, human exposure to the toxic pollutants transferred by microplastics could occur from eating any part of an affected fish or shellfish.

## FOCUS ON MICROBEADS

Microbeads are plastic particles intentionally added to beauty products for their abrasive qualities. Beauty products with microbeads typically list “polyethylene” or “polypropylene” as an ingredient. Microbeads include both round, bead-like, brightly-colored plastic pellets, and rough, plain fragments.

In October 2015, Governor Jerry Brown signed AB 888, a bill that will ban the sale of personal care products containing microbeads in California beginning January 1, 2020. This bill is the toughest ban on microbead-containing products in the nation. Many companies have already committed to eliminating these ingredients from their products.

Until 2020, consumers can limit their personal contributions to microplastic pollution by avoiding products that contain microbeads, choosing clothing made from natural fibers, and taking care not to litter or flush plastic materials down the toilet.

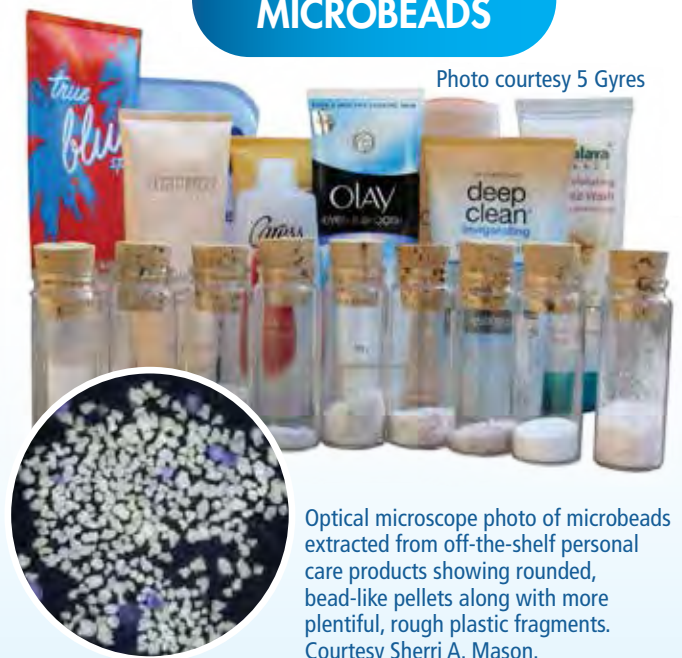


Photo courtesy 5 Gyres

Optical microscope photo of microbeads extracted from off-the-shelf personal care products showing rounded, bead-like pellets along with more plentiful, rough plastic fragments. Courtesy Sherri A. Mason.

## WHAT'S NEXT?

This study provides an initial baseline understanding of current conditions in the Bay as scientists, policymakers, and industry leaders work towards reducing the impact of microplastic pollution. More monitoring is needed to confirm these results and track trends in microplastic levels in response to the microbead ban and other policy changes designed to reduce plastic pollution.

Further study of microplastics in Bay fish is needed to determine whether they are more contaminated than fish in other major water bodies, and to investigate the potential for accumulation of microplastics and attached pollutants in sport fish that people eat.

### ACKNOWLEDGMENTS

Funding for this study was provided by the Regional Monitoring Program for Water Quality in San Francisco Bay, with in-kind contributions from San Francisco Baykeeper and the 5 Gyres Institute. Special thanks to the wastewater treatment plants that voluntarily participated in this study: Palo Alto Regional Water Quality Control Plant, Fairfield-Suisun Sewer District, Central Contra Costa Sanitary District, East Bay Municipal Utility District, East Bay Dischargers Authority, City of San Mateo Wastewater Treatment Plant, San Jose/Santa Clara Regional Wastewater Facility, and San Francisco International Airport Sanitary Waste Treatment Plant and Reclaimed Water Facility. Fact sheet design by Linda Wanczyk.



### FOR REFERENCES OR INFORMATION

See the Scientific Poster:  
[sfei.org/microplastics](http://sfei.org/microplastics)

Or Contact:  
Rebecca Sutton, Ph.D., [RebeccaS@sfei.org](mailto:RebeccaS@sfei.org)

**SFEI** | **AQUATIC SCIENCE CENTER**

SAN FRANCISCO ESTUARY INSTITUTE & THE AQUATIC SCIENCE CENTER  
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## SFEI|ASC Newsletter Winter 2015

[www.sfei.org](http://www.sfei.org) • Winter • 2015

**SFEI** | AQUATIC  
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[www.sfei.org](http://www.sfei.org)

# SHORTENING THE DISTANCE BETWEEN **SCIENCE** AND **EFFECTIVE STEWARDSHIP**



### Making a big splash...

In Paris, the climate talks are closing in on a global accord on climate change. Here in California, we're living through the challenges of extreme weather from El Niño storms to extreme King Tides. Meanwhile, at SFEI, we're doing everything possible to provide the tools to make the San Francisco Bay Area a national model on how to tackle climate

change.

We recently helped to author three major reports on the health of the S.F. Bay and Delta — *The Pulse*, *The State of the Estuary Report*, and *The Baylands Goals Update* — while providing a blueprint for action on sea level rise and extreme weather. The media and editorial response to these reports has been great.

We believe in giving tools to help do the job. Our GreenPlan-IT Toolbox, for instance, will empower cities to evaluate their urban landscape to manage their critical water resources. Our partnership with Google has produced a "Landscapes Resilience Framework." This document presents seven principles describing how we can design landscapes to be more resilient to rapid environmental changes.

SFEI's goal is to provide the tools to motivate people to act on behalf their own communities. We hope these highlights inspire you to embrace the possibilities where you live.

Respectfully,



Warner Chabot  
Executive Director

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## CLEAN WATER

### GreenPlan-IT Toolbox evolving quickly to meet increased demand

# GreenPlan-IT

Locate and determine cost effective watershed scale Green Infrastructure implementation scenarios

With the conclusion of the first round of funding for the Green Plan Bay Area project, SFEI produced GreenPlan-IT in collaboration with SFEP, a technical advisory committee, pilot partners, and BASMAA. GreenPlan-IT is an innovative planning tool to help municipalities evaluate multiple management alternatives for green infrastructure

in the urban landscape... [more >](#)



## RMP Keys to Success Highlighted in Two Manuscripts

The Regional Monitoring Program for Water Quality in San Francisco Bay (the RMP) is one of SFEI's flagship programs. The overarching goal of the RMP is to collect data and communicate information about water quality in San Francisco Bay to support management decisions. Two new articles in *Regional Studies in Marine Science* document how the RMP has continued to inform management decisions through a commitment to collaboration, adaptation, and innovation during the 23 years since it was founded in 1992... [more>](#)

## New Reports Show Progress Toward Understanding Nutrient Impacts in the Bay

SFEI scientists studying the role and effects of nutrients in the Bay recently completed two draft reports that summarize current knowledge of the issue.

The [Lower South Bay Nutrient Synthesis](#) was a collaborative effort between SFEI and a number of co-authors in the region, including experts from USGS and UC Davis. The article summarized the current state of knowledge on nutrient-related issues in this region. The second report is the [2015 Annual Nutrient Science Program Update](#) which offers a succinct progress update on the ongoing elements of the Nutrient Management Strategy for San Francisco Bay... [more>](#)

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## ENVIRONMENTAL INFORMATICS

### New Project Tracker online forms



New Project Tracker online forms enhance EcoAtlas' regional capacity for habitat restoration project tracking, assessment and reporting. Partners can now upload and edit project information and approve projects for display on [EcoAtlas](#). Project

Tracker meets the important need of providing tools for partners to manage their projects and display information on EcoAtlas, a tool for visualizing the condition and extent of California's aquatic resources... [more >](#)

## Rosemary Knight speaks at SFEI about groundwater remote sensing



On December 7th, SFEI hosted eminent Stanford Professor to address innovations that may help our State manage its dwindling groundwater supplies in the era of climate change. Rosemary Knight is a Professor of Geophysics and a Senior Fellow of the Stanford Woods Institute who talked to SFEI and invited resource managers about her work concerning remote sensing of groundwater, including electrical resistivity imagery, InSAR, and groundwater NMR, as well as the results of her most recent surveys... [more >](#)

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## Enhancing the Vision for Managing California's Environmental Information

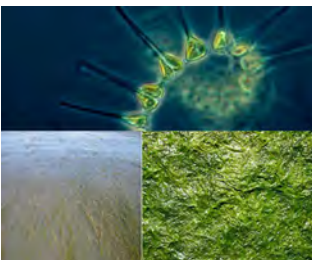


Under the aegis of the Delta Stewardship Council, SFEI helped compose a vision document with recommendations for enhancements to California's information technology infrastructure and associated practices. Called "Enhancing the Vision for Managing California's Environmental Information," the white paper was produced collaboratively with a team of writers contributing their ideas from private industry, non-profits, and various state agencies... [more >](#)

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## RESILIENT LANDSCAPES

### Delta Primary Production Workshop



Sixteen local and national experts met for a three-day workshop hosted at SFEI to develop a plan that will for the first time quantify primary production in the Sacramento-San Joaquin Delta, both historically and today. During the workshop (October 28-30), scientists with expertise in primary producer groups, hydrodynamics, and food web dynamics integrated existing data, scientific literature, and best professional judgment to build a new synthesis of past and contemporary production and its ability to support the base of the Delta food web... [more >](#)

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## SFEI's new Landscape Resilience Framework outlines attributes of ecological resilience

### Resilient Silicon Valley Science and stories for ecosystem health

A project of the San Francisco Estuary Institute's  
Resilient Landscapes Program



SFEI's Resilient Landscapes Program has developed a Landscape Resilience Framework, with the goal of facilitating the integration of resilience science into environmental management, urban design, conservation planning, and ecological restoration. The framework proposes seven key landscape attributes that contribute to ecological resilience, providing details and examples on each... [more >](#)

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## Lower Novato Creek Vision Just Released!



SFEI recently released a resilient landscape vision for lower Novato Creek that incorporates habitat restoration actions into flood risk management. The vision, developed in coordination with a team of regional science experts, highlights opportunities for restoring and sustaining vital tidal wetland habitats around lower Novato Creek while supporting a high level of flood protection under rising San Francisco Bay water levels. It provides

Marin County Flood Control & Conservation District and other local partners with several “nature-based” adaption options that can benefit both habitat and people... [more >](#)



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**DRAFT**  
**MINUTES AND ACTION ITEMS**  
 Resulting from the  
**Executive Committee Conference Call**  
**November 20, 2015**

**In Attendance:**

Barbara Salzman, SFEI Vice Chair  
 Dave Tucker, Treasurer  
 Pamela Creedon , SFEI Secretary  
 Dave Williams, ASC/SFEI Vice Chair

**Absent:**

Jim Fiedler, ASC/SFEI Chair

**Staff:**

Warner Chabot  
 Lawrence Leung

Action Item	Who?	Status	Date Completed
1. Schedule the next Governance Committee Call before December 11	Warner Chabot Dave Williams		
2. Microplastics speaker (Rebecca or Meg) for BACWA annual membership meeting Jan 15.	Warner		
3. List of metrics for Executive Director’s evaluation	Warner		

**Next Executive Committee Meeting**  
**TBD**

(Regular meeting conducted via conference call. Notice of Meeting given via e-mail.)

The meeting was called to order at 1:10 PM.

1. Executive Director’s Report

Warner Chabot gave an overview about the past two months including the three major reports, Bayland Goals, State of the Estuary and Pulse, a briefing with Assemblyman Tony Thurman to elected officials and media coverage.

2. Review action Items and Minutes from September 10, 2015 Executive Committee Meeting. Barbara Salzman moved for approval. Dave Tucker seconded and unanimously approved. Pamela Creedon abstained from voting.

3. Financials

Lawrence Leung presented the financials to the committee. July thru October had a surplus of \$331,673. November thru February months usually trend downwards. Lawrence also reported that the Audit for July 2014 thru June 2015 is complete with no findings.

4. Review Program Plan Update

Warner Chabot briefly went over the updated program plan. Dave Tucker moved for approval. Barbara Salzman seconded.

5. Review Draft Agenda for December 11, 2015 Board of Director's Meeting

Warner Chabot went over the draft agenda.

The meeting was adjourned at 1:32 PM.

## Attachment 4 - Board of Directors Contact

Name	E-mail	Direct	Cell
Mitch Avalon	<a href="mailto:maval@pw.cccounty.us">maval@pw.cccounty.us</a>	925.313.2203	
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Pamela Creedon	<a href="mailto:pamela.creedon@waterboards.ca.gov">pamela.creedon@waterboards.ca.gov</a>	916-464-4839	
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Jim Fiedler	<a href="mailto:jfiedler@valleywater.org">jfiedler@valleywater.org</a>	408.630.2736	(925) 683-9701
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Barbara Salzman	<a href="mailto:bsalzman@att.net">bsalzman@att.net</a>	415.924.6057	415.927.6057
Prabhakar Somavarapu	<a href="mailto:somavarapup@sacsewer.com">somavarapup@sacsewer.com</a>	916-875-9101	
Dave Tucker	<a href="mailto:dwt58@verizon.net">dwt58@verizon.net</a>	408.795.1865	408.691.9996
Tim Vendlinski	<a href="mailto:vendlinski.tim@epa.gov">vendlinski.tim@epa.gov</a>	415-972-3469	510-366-4669
James Wheaton	<a href="mailto:wheaton@well.com">wheaton@well.com</a> <a href="mailto:wheaton@envirolaw.org">wheaton@envirolaw.org</a>	510-208-4555	
Vicky Whitney	<a href="mailto:vicky.whitney@waterboards.ca.gov">vicky.whitney@waterboards.ca.gov</a>	916.341.5423	916.947.0189
Dave Williams	<a href="mailto:dwilliams@bacwa.org">dwilliams@bacwa.org</a>	925-765-9616	925-765-9616
Bruce Wolfe	<a href="mailto:bruce.wolfe@waterboards.ca.gov">bruce.wolfe@waterboards.ca.gov</a>	510.622.2314	510.325.8080

SFEI Board  
Member Only



## Attachment 5

Item: October 2015 Financials  
From: Lawrence Leung, Associate Finance Director

### FY16 (4 months) Financial Performance Summary

#### Surplus

The July thru October 4-month surplus is \$331,673. Lower than anticipated administrative expenses (\$77k avg/mth vs \$91k target/mth) and staff focusing on billable projects continue to be the primary reasons. In comparison, the following March thru October surpluses in the past couple years are the following: 2013: \$390,624, 2014: \$513,400, and 2015: \$684,989. The November thru February winter months tend to trend downward: 2013/2014: -\$179,210, 2014/2015: -\$196,680, and 2015/2016: \$35,163 (projected). Table 1 below reiterates these figures.

Table 1

Surplus			
FY	Mar-Oct	Nov-Feb	Total
2013	\$ 390,624	\$ (179,210)	\$ 211,414
2014/15	\$ 513,400	\$ (196,680)	\$ 316,720
2015/16	\$ 649,826	\$ 69,595	\$ 719,421
Total	\$ 1,553,850	\$ (306,295)	\$ 1,247,555

#### Cash & Accounts Receivables

The long-term unrestricted cash now sits at \$448,278 with accounts receivables at \$1,529,572.

#### Audits

The July 2014 thru June 2015 SFEI and ASC yearly audits are completed and final. An electronic version of the SFEI audit can be found here: <https://goo.gl/pFO64>  
The ASC version can be found here: <https://goo.gl/06sROz>

#### Financial Statements

Tables 2 (Dashboard) and 3 (Budget versus Actuals) on the next couple pages provide a summary of the financial statements. An electronic version of the October 2015 ending financial statements (income statement and balance sheet) can be found here: <https://goo.gl/1hcTDo>

**Recommended Action:** Review and accept financials

Table 2: Dashboard - Financial and Operational Effectiveness

Ln	Metric (\$000)	Definition	FY16 Board-Approved Budget	Actuals							Projections				
				Jul	Aug	Sep	Status	Oct Target	Oct	FYTD Avg	Nov	Dec	Jan	Feb	Mar
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
<b>Income</b>															
1A	Monthly billed labor revenue	Revenue generated by SFEI staff based on contracted projects.	\$542	\$514	\$609	\$597	●	\$548	\$606	\$581	\$495	\$545	\$535	\$566	\$666
1B	YTD Cumulative Labor Revenue	Cumulative based on Line 1A. Can be used to determine if revenue shortfalls are chronic or transient.	\$6,503	\$514	\$1,123	\$1,719		\$2,267	\$2,325		\$2,821	\$3,365	\$3,900	\$4,466	\$5,132
1C	YTD Budgeted Labor Revenue	Expected revenue based on approved June 2015 budget. \$542k flat amount per month. Amount to be compared to 1B.		\$542	\$1,084	\$1,626		\$2,168	\$2,168		\$2,710	\$3,252	\$3,794	\$4,336	\$4,878
1D	YTD Act. / Budgeted Labor Revenue	Rough estimate of our performance to budget. If 100% we are precisely on budget. This is another way to determine if shortfalls are chronic or transient.		94.8%	103.6%	105.7%		104.6%	107.3%	102.9%	104.1%	103.5%	102.8%	103.0%	105.2%
2	Unrestricted Cash on Hand (Short-Term)	Cash on hand minus unearned income & restricted cash (i.e., prepaid funds tied to project work), and lease payable. Excludes the RMP.		\$965	\$1,004	\$972			\$909	\$963					
3	Unrestricted Cash on Hand (Long-Term)	Ln 2 minus lease payable, accounts payable (A/P), accrued vacation, and deferred payroll. Note that the majority of A/P are tied to receivables (e.g., subs). Excludes the RMP.		\$513	\$567	\$320			\$448	\$462					
4	Accounts Receivables	Money owed from clients to SFEI. Includes amounts owed to subcontractors.		\$1,368	\$1,198	\$1,763			\$1,671	\$1,500					
5	Potential Audit Liabilities		(\$484)	\$215K for post-contract date work, \$26K for 2012 questioned cost to use Federal IDC on all originating Federal funds, additional \$243K for additional liability outside of 2012 audit period.											
6	YTD surplus/(deficit)	Cumulative surplus (deficit) based on Line 5	\$401	\$35	\$136	\$229	●	\$277	\$332		\$325	\$349	\$364	\$401	\$538
7	Monthly surplus/(deficit)		\$22	\$35	\$101	\$93	●	\$48	\$103	\$83	(\$7)	\$25	\$15	\$37	\$137
8	Hours Billed Monthly	Hours billed by all employees on payroll. Starting in July, target will be adjusted to remove all non-benefitted staff - interns or staff associated with fiscal agency projects.		5,280	5,850	5,550	●	5,123	5,681	5,590	4,742	5,266	5,172	5,361	6,304
9	Billable Ratio	Aggregate ratio of actual hours billed to actual work hours for all staff. Vacation, sick, and leave time not included. Starting in July, target will be adjusted to remove all non-benefitted staff.		75.2%	77.5%	76.5%	●	69.2%	76.1%	76.3%	69.4%	70.3%	70.3%	70.3%	70.3%
10	Labor multiplier billed	Labor revenue ÷ Direct labor cost		2.58	2.69	2.75		2.79	2.75	2.69					

Table 2: Dashboard - Financial and Operational Effectiveness

Ln	Metric (\$000)	Definition	FY16 Board-Approved Budget	Actuals							Projections				
				Jul	Aug	Sep	Status	Oct Target	Oct	FYTD Avg	Nov	Dec	Jan	Feb	Mar
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
<b>Expenses</b>															
11	Total labor and overhead	Payroll plus overhead. Fluctuates based on key payments (HSA, insurance). Labor expenses typically stay quite flat except for the annual increase due to the review process.	\$6,449 \$537/mth	\$485	\$507	\$500	●	\$500	\$519	\$503	\$502	\$520	\$520	\$529	\$529
12	Overhead	Fixed and controllable overhead expenses. Varies as insurance payments, controllables, etc. fluctuate.	\$1,088 \$91/mth	\$78	\$81	\$74	●	\$80	\$82	\$79	\$80	\$80	\$80	\$80	\$80
<b>Project Pipeline</b>															
13A	Contracts Awarded Labor (YTD)	Cumulative new contracts based on Line 13B. Yearly fundraising goal of \$4.6M (SFEI labor) to cover non-RMP revenue needs.	\$4,639	\$412	\$737	\$1,365	●	\$1,546	\$2,935		\$4,254	\$4,254	\$4,434	\$4,434	\$4,434
13B	Contracts Awarded Labor (Month)	New contracts signed		\$412	\$325	\$627	●	\$387	\$1,571	\$734	\$1,319		\$180		
13C	Individual Amount and Project Name	List of major contracts signed		\$273 DRMP \$102 NBBio \$25 Delta \$12 StateBay	\$273 DRMP \$102 NBBio \$25 Delta \$12 StateBay	\$518 CyanoH \$87 CEC \$22 Eelgrass Data Mgmt		<b>\$470 Nutrients FY16</b> <b>\$465 WL Planning &amp; Tracking</b> <b>\$286 LTMS Strategy Support</b> <b>\$258 Petaluma River WS</b>			\$577 Grn Infr \$293 BldSt \$210 Lndscp \$150 Reason Assur		\$180 Grasslands		
13D	Signed Contracts/In Negotiations Labor Balances	Includes RMP		\$8,790	\$8,541	\$8,594			\$10,564	\$9,122					
13E	Backlog in Months	Line 13D ÷ Line 11 x 106%		18.3	16.7	17.2			21.6	18.5					
13F	Labor multiplier project pipeline	SumProduct(Labor balance÷Total labor balance, Multiplier). Tells the multipliers weighting all project labor balances.		2.72	2.73	2.72			2.71	2.72					

Table 3: Budget versus Actuals

	A	B	C	D	E
FY15/16 Budget versus Actual					
		Board Approved Budget (12/12/14)	Actuals thru 10/31/15	Prorated Board Approved Budget (B/12*4)	Projected Difference Over/(Under) (C-D)
<b>REVENUE</b>					
1	Labor Revenue	\$6,503,360	\$2,325,197	\$2,167,787	\$157,410
2	Other Direct Cost Rev	\$2,800,000	\$978,940	\$933,333	\$45,607
3	Other Revenue	\$60,000	\$16,927	\$20,000	(\$3,073)
4	<b>Total Revenue</b>	<b>\$9,363,360</b>	<b>\$3,321,064</b>	<b>\$3,121,120</b>	<b>\$199,944</b>
<b>EXPENSE</b>					
5	Labor Expense	\$5,360,770	\$1,697,583	\$1,786,923	(\$89,340)
6	Other Direct Cost Exp	\$2,800,000	\$977,695	\$933,333	\$44,362
7	Admin Expense	\$994,266	\$300,156	\$331,422	(\$31,266)
8	IT Expense	\$93,537	\$13,956	\$31,179	(\$17,223)
9	<b>Total Expenses</b>	<b>\$9,248,573</b>	<b>\$2,989,390</b>	<b>\$3,082,858</b>	<b>(\$93,468)</b>
10	<b>Surplus/(Deficit)</b>	<b>\$114,787</b>	<b>\$331,674</b>	<b>\$38,262</b>	<b>\$293,412</b>

## Item: Updated FY16 Q2 SFEI Program Plan

From: Lawrence Leung, Associate Finance Director

#	Project Title	Program	Focus Area	Multiplier	Start Date	Anticipated Completion	Contract Value	Labor Value	Projected FY16 Labor Spending	Contractual Status*	Direct Client	Funding Source	Principal Investigator	Project Manager	Collaborator(s)
1	Demonstrating the use of Historical Hydrology to Prioritize Multi-benefit Wetland Restoration in the Petaluma River Watershed	RL	Historical Ecology	2.5	10/1/15	9/30/17	\$258,423	\$258,423	\$129,212	S	Sonoma Resource Conservation District	EPA	Josh Collins	Chuck Striplen	Petaluma Partnership
2	Bay Area Ecosystem Climate Change Consortium	RL	Landscape Futures	2.95	9/1/15	1/31/16	\$25,000	\$25,000	\$25,000	S	CEMAR	SCC	Jeremy Lowe	Jeremy Lowe	
3	Development of a Coyote Valley Greenprint	RL		2.95	12/1/15	4/30/15	\$20,000	\$20,000	\$20,000	S	Santa Clara Valley OSA	Santa Clara Valley OSA	Robin Grossinger	Amy Richey	
4	Grassland Bypass Project	CW		2.5	1/1/16	12/31/20	\$180,136	\$180,136	\$16,300	N	USBR	USBR	Nicole David	Nicole David	

\*Program: CW = Clean Water, EI = Environmental Informatics, RL = Resilient Landscapes

\*\*Contractual Status: S = Signed, N = In Negotiations

## **#1 Demonstrating the use of Historical Hydrology to Prioritize Multi-benefit Wetland Restoration in the Petaluma River Watershed**

### **Project Description**

**\*\*\*Note:** This project was previously approved under the ASC Board in the 9/11/15 updated program plan. The contract was actually issued to SFEI and will therefore need SFEI Board approval.

This project will engage watershed partners to demonstrate the efficacy of historical hydrology in identifying and prioritizing multi-benefit wetland restoration opportunities. This demonstration will focus on the Petaluma River watershed. In San Francisco Bay as a whole, only 15% of historic tidal marshlands remain. In San Pablo Bay (the northern extension of the San Francisco Bay), 27% remain. The Petaluma Marsh, which covers 5,000 acres, is the largest remaining salt marsh in San Pablo Bay, and represents the single largest and least disturbed example of Ancient Tidal Marshlands in California (Collins, 2006). In addition there are 7,000 acres of reclaimed wetlands in the watershed creating an excellent opportunity for Petaluma to act as a stronghold of marshland protection and restoration within San Pablo Bay and the greater San Francisco Bay.

The proposed project will work with a variety of stakeholders to synthesize diverse historical data, such as maps, landscape and aerial photographs, textual accounts, and early surveys, to enhance our understanding of the hydrologic conditions of the Petaluma River watershed prior to major Euro-American modification. Findings will be compiled into an illustrated technical report and GIS describing historical hydrologic conditions and discussing implications for management, restoration, flood control, and groundwater recharge. These products will fill a critical data gap in the integrated picture of historical conditions in the North Bay. Products will also include prioritization of wetland restoration opportunities and feasibility analysis, and information regarding costs, methods, and feasibility for transfer of the historical hydrology method to other watersheds."

### **Work Products**

- Roster of Partners Group/TAC members and their affiliations, Powerpoint presentations and attendance lists from a minimum of two TAC meetings and a public meeting to disseminate project results, Detailed project workplan
- Brief memorandum that summarizes data findings and overall task results
- List of relevant georeferenced historical maps along with selected examples
- Annotated map detailing channel change over time that will be included in the synthesis memorandum
- Data analysis update and brief summary of emerging findings (1-2 pages).
- Draft and Final annotated map and brief synthesis memorandum (estimated 50 pages) including specific findings regarding transferability of methods, spatial and datasets used in compiling the annotated map
- RipZET analysis of optimal functional widths, comparison with historical riparian information, Updates to EcoAtlas and BAARI
- Prioritized list of restoration sites, with data on restoration feasibility (RCD deliverable)

## **#2 Bay Area Ecosystem Climate Change Consortium**

### **Project Description**

This project assists the Bay Area Ecosystem Climate Change Consortium (BAECCC) in implementing its Natural Infrastructure Initiative. Work on the the following three tasks are to be completed by January 31, 2016: 1. Multi-benefit Design Paper, 2. Sediment Demand and Supply Proposal, 3. Baylands Resiliency Criteria.

### **Work Products**

- Working paper outline, draft paper based on approved outline for review, final paper (10-15 pages with figures) addressing comments
- Draft scope of work for review, revised scope of work addressing comments received
- Draft criteria with sample application for review; revised criteria and application addressing comments received

## **#3 Development of a Coyote Valley Greenprint**

### **Project Description**

SFEI and the Santa Clara Valley Open Space Authority (OSA) are partnering to apply ecosystem science and the Landscape Resilience Framework (Beller et al. 2015) for the development of a Coyote Valley Greenprint.

### **Work Products**

- 2-4 meetings between SFEI and OSA staff
- 3-5 page memo describing proposed resilient landscape design process for Coyote Valley

## **#4 Grassland Bypass Project**

### **Project Description**

The purpose of this grant agreement is to provide a continuation of summarizing findings for the annual report and maintaining and updating the Grassland Bypass Project website.

### **Work Products**

- Provide quarterly narrative reports and graphics generated from monthly data reports
- Maintain and update the GBP website with new available data and reports
- Write annual report summary chapter.



Item: Updated FY16 Q2 SFEI Program Plan

From: Lawrence Leung, Associate Finance Director

#	Project Title	Program	Focus Area	Multiplier	Start Date	Anticipated Completion	Contract Value	Labor Value	Projected FY16 Labor Spending	Contractual Status*	Direct Client	Funding Source	Principal Investigator	Project Manager	Collaborator(s)
1	Implementing the Vision for Managing California's Environmental Information	EI	Systems & IT	2.95	9/25/15	12/31/16	\$48,426	\$48,426	\$29,056	S	Delta Stewardship Council	Delta Stewardship Council	Tony Hale	Tony Hale	Delta Stewardship Council
2	Initial Development of Russian River Regional Monitoring Program	RL	Wetland Science	2.95	10/27/15	11/1/16	\$10,000	\$10,000	\$6,667	S	Sonoma County Water Agency	Sonoma County Water Agency	Josh Collins	Chuck Striplen	"Russian River Watershed Association North Coast Regional Water Board"

\*Program: CW = Clean Water, EI = Environmental Informatics, RL = Resilient Landscapes

\*\*Contractual Status: S = Signed, N = In Negotiations

## **#1 Implementing the Vision for Managing California's Environmental Information**

### **Project Description**

"Since February 2014, SFEI-ASC has assisted the Delta Stewardship Council's Science Program in the convening of the successful Environmental Data Summit, the composition of the white paper "Enhancing the Vision for Managing California's Environmental Information," and advising on steps for adoption of the paper's recommendations.

The next phase will entail creative problem-solving, shuttle diplomacy, technical acumen, and a passion for the advancement of California's environmental information.

The implementation of the recommendations must take into account the ongoing data-sharing efforts. Accordingly, the plan must reconcile or compare the initiatives to the terms in the white paper and bridge the differences between what is and what should be. Example efforts include Data Basin, Bay-Delta Live, Sacramento River Coordinated Monitoring Program, the Federal Open Water Data Initiative, and others.

The Aquatic Science Center will address the work in two stages.

1. The implementation of the recommendations must take into account the ongoing data-sharing efforts. Accordingly, the plan must reconcile or compare the initiatives to the terms in the white paper and bridge the differences between what is and what should be. Example efforts include Data Basin, Bay-Delta Live, Sacramento River Coordinated Monitoring Program, the Federal Open Water Data Initiative, and others.

2. The emerging Implementation Plan will record the resources necessary to implement the recommendations, how to foster ongoing efforts, and how to integrate technology to reduce duplicative work."

### **Work Products**

- Background explanatory material of technical concepts for key audiences
- Documented inventory of salient data-sharing efforts/initiatives
- Implementation plan for recommendations integrating the efforts of ongoing initiatives

## **#2 Initial Development of Russian River Regional Monitoring Program**

### **Project Description**

ASC will conduct the initial phase of developing the R3MP through the completion of a conceptual plan (Concept Plan) for explaining the purpose and benefits of an RMP, and a funding framework and budget (Framework and Budget) to identify potential future funding opportunities and partnerships to support development and implementation of the R3MP.

### **Work Products**

- Administrative Draft Concept Plan
- Final Concept Plan
- Administrative Draft Framework and Budget
- Final Framework and Budget