

Quarterly Newsletter

2013 • Quarter 3



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You can tell it's summer because the building is a bit quiet. The quiet is deceptive, however. It's not just that folks are on vacation, it's largely because many staff members are out in the field this time of year. Muddy feet, poison oak, and seasickness are part of the package, but the hard work is rewarded by wonderful views, camaraderie and, most importantly, data generation in support of our work. Here are some highlights.

Of course, the RMP water cruise is always an all-hands-on deck effort. This year 22 sites were sampled over the course of 7 days. Nine RMP staff sampled Bay waters alongside USGS, Stanford and AMS staff. This was the second year on the USGS Turning Tide research vessel Captained by Chris Vallee. We were very pleased with the support and collaboration from Chris and his crew. In addition to the established Status and Trends contaminant sampling, samples were collected to monitor for the insecticide fipronil and a suite of alternative flame retardants at ten sites per the RMP Chemicals of Emerging Concern Strategy.



USGS (Sacramento and Menlo Park) also worked with Emily Novick to deploy a moored sensor at Dumbarton Bridge to collect data on nutrient processes. The sensor was placed in early July and brought on line without a hitch. We've been able to collect continuous temperature, pH, turbidity, dissolved oxygen, chlorophyll, and conductivity data via telemetry. This is one step toward answering priority nutrient science questions such as, "Are nutrients contributing to impairment?" and "Does oxygen demand in Lower South Bay exceed DO production/input such that low DO could result due to internal production of organic matter (algal blooms)?" We hope to develop a subembayment scale respiration/DO budget which will enable us to determine the total amount of readily-degradable organic matter entering or being produced within the system.

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By the end of the summer 90 CRAM assessments will have been performed on riverine, slope, and depressional wetlands in the lower part of the Laguna de Santa Rosa watershed to assess its overall condition. SFEI staff members teamed with partners from the North and Central Coasts to apply the Wetland and Riparian Assessment and Monitoring Plan (WRAMP) framework for condition assessment and decision making. Additionally, we did CRAM work in the Delta in support of the EIR for the BDCP Pipeline Tunnel Option. SFEI trained DWR staff to build their capacity to complete the assessments on tidal riverine, estuarine, riverine, and depressional wetlands to estimate the ecological condition of the wetland resources within the project area.



Several staff members headed out to look for field indicators of Head of Tide (HOT). This important sea level rise project is a collaboration with BCDC and will help the region develop a rigorous definition of the extent of tidal action for tributaries draining into the Bay. The team surveyed six tributaries to characterize the fully tidal part of the creek, the fluvial-tidal transition, and the fully fluvial reach of each creek. Board Member John Callaway shared equipment to make this work possible. Key field indicators such as channel geometry, vegetation salt tolerance, channel bed substrate, and man-made indicators such as bridges, and grade controls were noted for comparison to tidal datums to determine which indicators can be used for identification of the fluvial-tidal interface. Ultimately, a robust methodology can be used to map HOT zones and to monitor the anticipated migration upstream in local watersheds under the influence of sea level rise.

Field work will wrap up in the fall with riparian buffer estimator ground-truthing and more CRAM. After a brief respite we'll gear up for wet weather field work.

Those who weren't in the field kept busy with the release of the new technology tools for wetlands data management – including EcoAtlas; preparations for the 20th anniversary of the Bay RMP; and exhibit development for the Oakland Museum of California's Above and Below: Stories From Our Changing Bay. The Clean Water Program completed several major synthesis reports – the mercury synthesis report, a nutrient synthesis report and the PCB synthesis report.

Lastly, we used the summer months to continue to move forward with our strategy and embed it in our day-to-day operations. Approximately half of the staff participated in a workshop to align the next steps to implement our strategy. I'm looking forward to the hum of the building in the fall months.

— MEREDITH WILLIAMS, Interim Executive Director



Implementation Plan Workshop

The Staff Implementation Plan (IP) for the SFEI/ASC Strategy has been rolled out to staff and we are now putting our strategy into action by aligning workplans, annual commitments, and priorities to the IP. One major step taken to accomplish this was an off-site workshop to dig into the IP. Managing Principal Investigators¹ (MPIs), Program Directors, Program Managers, and the Chief Scientist met on July 26 at the Port of San Francisco in a demonstration of our Forum approach which fosters consensus, coordination, and collaboration inside and outside the Institute. The workshop was to share ideas, look at our work from multiple perspectives, and confirm our direction. The primary workshop objectives were to:

- make sure that the IP is understood and owned throughout the organization;
- engage the MPIs in the work of implementation;
- enhance staff alignment;
- provide input and share perspectives on each other's work; and
- make connections among Programs, projects, and Focus Areas.

As preparation, each participant wrote a briefing document on his or her Focus Area or Initiative. Each document included an explanation of how each Focus Area/Continuing Priority ties to the SFEI Strategy; a list of those Initiatives that the Focus Area supports and how; descriptions of the Focus Area goals; anticipated outcomes and impact over the next 2-3 years; and refined SMART Actions beyond those outlined in the IP.

Initiative leaders or Focus Area MPIs made brief presentations on the direction they will be taking their work and the relationship between their work and the strategy. This allowed others in attendance to begin to see links between their own work and that of other MPIs. The Program Director team used this as an opportunity to assess the degree to which each MPI understands her or his role and contributions to successful implementation of our strategy.

In the afternoon, session participants applied the SWOT analysis methodology (Strengths, Weaknesses, Opportunities, and Threats) to vet and review proposed plans for moving forward with the strategy. Four SWOTs were completed and those MPIs will now use that information to further improve their plans.

The day was a success. Several folks said how proud they were when they looked at the compiled background documents and again when they saw the talent at the retreat. Post-workshop feedback has been positive and the Program Directors feel that there's now a deeper level of buy in to the IP. Now the challenge is to use this momentum to keep MPIs engaged and to continue to execute on our plans. In upcoming Board meetings we anticipate working to identify the points of engagement between the Board and successful implementation of our strategy. This would be a continuation of the discussion started last summer at the Board Governance Workshop.



¹ Managing Principal Investigators (MPIs) have the requisite expertise to provide intellectual leadership for a given subject area (or Focus Area) within the Institute. MPIs frequently serve as the lead scientist on our projects and are frequently responsible for fundraising and staff management for their respective Focus Areas.

Environmental Data, Information, and Technology (EDIT) New Online Tools

For the EDIT program, the third quarter was quite eventful. This period witnessed a deluge of new tools emerging from SFEI, each developed through SFEI's unique blend of skills in environmental science, data management, geographical information systems, web application development, and systems architecture. All of the tools were designed on behalf of the Wetland Monitoring Workgroup to promote public understanding and informed management of wetland condition at a statewide scale.

EcoAtlas



By compiling state and federal maps and data about wetlands, EcoAtlas gives site visitors access to salient information about the condition and extent of streams, wetlands, lakes, and their surrounding riparian areas. In particular, by

combining geospatial and tabular information, EcoAtlas breaks new ground with its Landscape Profile Tool. This tool generates a practical yet advanced report that merges aquatic and terrestrial resources, natural and human influences into a single view to aid in successful wetland management and restoration.

<http://www.ecoatlas.org>

Wetlands Portal

The Wetlands Portal is the latest in the series of My Water Quality Portals designed to help the general public find answers to fundamental questions related to water quality both in their communities and across the state as a whole. The goal is to provide timely information in an easy-to-understand manner for the public, environmental organizations, and water resource professionals. The Wetlands Portal is the third portal for which SFEI helped to develop either content or spatial data display.

www.MyWaterQuality.ca.gov/eco_health/wetlands

California Aquatic Resource Inventory (CARI)

CARI is a standardized statewide map of wetlands, streams, and riparian areas. This Geographic Information System (GIS) dataset provides accurate and detailed information about wetland and riparian extent for management, planning, and scientific study of the State's aquatic resources. CARI is the base map for EcoAtlas. <http://www.sfei.org/it/gis/cari>

CRAM Web Tools

A new website and data entry forms represent a major advancement in technology and process, all to promote easier, more intuitive, and more detailed CRAM assessments. This is the second step in major upgrades to the online system for managing CRAM information and training.

Outreach and Communications

Our newsletter announced the release of the new tools to 3,000 subscribers. In addition, however, **Meredith Williams** was interviewed by Jeff Bell on KCBS, which aired throughout the weekend of July 13. In her interview, Meredith Williams discussed the primary benefits of EcoAtlas to the state's body of knowledge about its wetlands, identifying EcoAtlas as a tool instrumental to decision-makers and the general public alike.

SFEI Monitoring Leads to Fish Advisories

Monitoring led by **Jay Davis**, MPI for the Bioaccumulation focus area and chair of the state's Bioaccumulation Oversight Group (BOG), has led to new fish consumption advice for hundreds of lakes in California. Three new OEHHA advisories based on data generated from BOG monitoring were published in August.

- Statewide Advisory for Eating Fish from California's Lakes and Reservoirs Without Site-specific Advice http://oehha.ca.gov/fish/special_reports/advisorylakesres.html
- Guidelines for Eating Fish from Silverwood Lake San Bernardino County http://oehha.ca.gov/fish/so_cal/silverwood.html
- Guidelines for Eating Fish from Oso Flaco Lake (San Luis Obispo county) http://oehha.ca.gov/fish/so_cal/osoflaco.html



Photo credit: William Winner

NFWF Recently Announced New Funding for the Bay

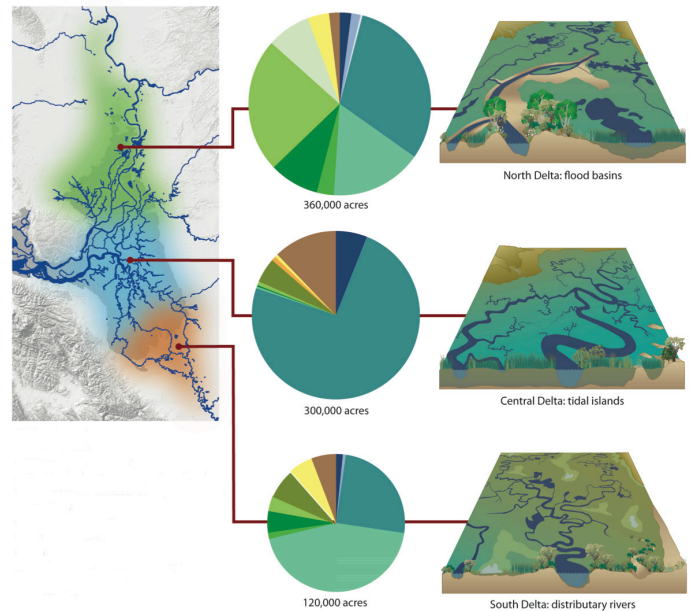
The National Fish and Wildlife Foundation will make an initial investment of a portion of the fund to support an important project in partnership with the State Coastal Conservancy. The project is an innovative effort to remove derelict creosote pilings from San Francisco Bay, in concert with a related effort to restore habitat for Pacific herring. The project was specifically recommended in the 2010 San Francisco Bay Subtidal Habitat Goals Report. NFWF is also developing a wider San Francisco Bay Estuary strategy to attract and guide future investments in the area. **Kristen Cayce** led the effort to map the pilings.

<http://www.nfwf.org/Pages/mediacenter/New-Fund-to-Benefit-Restoration-of-San-Francisco-Bay.aspx#.Ua6l2bXVB8F>

<http://www.sfei.org/documents/creosote>

Resilient Landscapes Work Featured in Key Delta Workshops

SFEI-ASC’s work on landscape-scale restoration planning was featured in several significant events which focused on Delta science and management. **Robin Grossinger** and Letitia Grenier presented landscape conceptual models at the Lower Yolo Ranch Restoration Expert Panel Workshop in June, based on work funded by SFCWA, CDFW, and DWR. Robin gave a presentation at the Tidal Marsh and Native Fishes Symposium at UC Davis and at the Delta Restoration Network meeting held by the Delta Conservancy.



Conceptual Models of Historical Landscapes. Slide from Robin Grossinger’s presentation at the Tidal Marsh Symposium, June 2013.

Clean Water

PCB Spatial Patterns in San Francisco Bay Forage Fish

Former staff **Ben Greenfield** and **Rachel Allen** recently published an article in *Chemosphere* titled “Polychlorinated Biphenyl Spatial Patterns in San Francisco Bay Forage Fish.”

The study examined PCB concentrations in San Francisco Bay forage fish to determine if PCB contamination is affecting the local aquatic food web. The main conclusion of the study was that forage fish are useful indicators of site-specific PCB contamination. The concentrations observed in forage fish sampled near historically polluted locations, old industrial sites, were elevated compared to the sites representing ambient conditions. In fact, concentrations observed in the forage fish were comparable to those of high lipid sport fish collected in the Bay. The concentrations at the historic hotspots were above thresholds indicating potential hazards to fish and wildlife. Additionally, PCB concentrations in forage fish corresponded with sediment PCB concentrations, suggesting that nearshore sediments next to historically polluted locations are a reservoir for PCB contamination. The study concluded that forage fish tissue concentrations help reveal contaminant spatial patterns because of the fish species’ small foraging ranges.

CEC Synthesis

SFEI staff have finalized a report synthesizing all data on emerging contaminants in the Bay environment through 2010. The report is titled “Contaminants of Emerging Concern in San Francisco Bay: A Summary of Occurrence Data and Identification of Data Gaps,” and is authored by Susan Klosterhaus, **Don Yee**, **Meg Sedlak**, **Adam Wong**, and **Rebecca Sutton**; **Joanne Cabling** provided valuable finishing touches to the final document. SFEI has produced one of the most extensive datasets characterizing contamination of a single region by unregulated, anthropogenic compounds over the span of a decade; the information summarized in this report will be a valuable resource to scientists and managers concerned with Bay pollution as well

as with the broader scientific issues associated with emerging contaminants. Our initial PBDE findings were mentioned in the June issue of *Estuary News*.

Study examining the Embryotoxicity of a PBDE Mixture to Common Terns and American Kestrels Published in *Chemosphere*

A study funded in part by the Regional Monitoring Program that analyzed the embryotoxicity of a PBDE mixture to common terns and American kestrels has recently been published in *Chemosphere*. The manuscript by Rattner et al. (2013), “Comparative Embryotoxicity of a Pentabrominated Diphenyl Ether Mixture to Common Terns (*Sterna hirundo*) and American Kestrels (*Falco sparverius*)” is available online.

Polybrominated diphenyl ethers (PBDEs) are persistent and bioaccumulative flame retardants that have been in use since the 1970s. There is evidence that PBDEs cause sublethal reproductive, developmental, immunological, and biochemical effects in bird species. The San Francisco Bay is a critical bird habitat and PBDEs have been observed in the Bay food web. Therefore, this study examined the survival, pipping, and hatching success of common tern and American kestrel eggs when exposed to a commercial penta-BDE formulation. Common tern embryos were utilized as a surrogate for Forester’s and California least terns, both resident San Francisco Bay species. The study found PBDE-treated common tern and American kestrel eggs hatched later than the control eggs. However, DNA damage, oxidative stress, and reduced thyroid weight was more pronounced in PBDE treated kestrels than in common terns. The study concluded that tern embryos may be less sensitive to PBDEs than kestrel embryos.

RMP Steering Committee Meeting

JULY 17 • 10AM TO 3PM

Resilient Landscapes

Projects for 104b3 Wetland Program Development Grants announced

Projects selected:

Framework for Coordinated Assessment of CA Wildlife Habitat and Aquatic Resources

This project will bring together monitoring and assessment approaches for two major regulatory - the Clean Water Act and the Endangered species act. The framework for planning, tracking, and assessing efforts would specifically cover Natural Community Conservation Plans (NCCPs) of the CA Department of Fish and Wildlife (CDFW) and the watershed approach to aquatic impact avoidance, minimization, and mitigation as referenced in the Wetland and Riparian Area Protection Policy (WRAPP) of the CA State Water Resources Control Board (State Board). If successful, there will be structured processes for planning and protecting aquatic resources and species that are coordinated across agencies.

Enhancing Regional Capacity for Wetland Project Tracking, Assessment and Reporting

This project will enhance EcoAtlas to support project tracking, assessment, and reporting needs in the San Francisco Bay-Delta and Central Valley. The project will begin or strengthen partnerships with the San Francisco Bay and Central Valley Joint Ventures as well as the Delta Conservancy. Work will be done to add queries, mapping, data layers and other functionality in EcoAtlas. The current Joint Venture wetland restoration project tracking system will be essentially supplanted by EcoAtlas, thus eliminating a long-standing duplication of effort. This will bring more partners into the EcoAtlas community who can help us understand how it can be used to support purchases and prioritization of wetland restoration opportunities.

Support for L2 Committee Priority Tool Development: Validation of Three CRAM Modules

The project will close some notable gaps in our wetland assessment toolkit by validating the slope wetland, depressional and vernal pool CRAM modules. The validations will correlate CRAM scores to biological indicators of condition – including macroinvertebrate

assessments – to confirm the sensitivity and responsiveness of the CRAM methods. This will help us understand the relationship between CRAM assessments and other measures of condition thereby helping us quantify the degree of confidence in the methods. Also, Quality procedures will be documented to provide guidance on the accuracy and precision of the method.

Napa Atlas Reviewed in the Journal Environmental History: “beautiful, informative, and provocative”

SFEI’s Napa Valley Historical Ecology Atlas is reviewed in the forthcoming issue of the prestigious journal Environmental History, published by Oxford University Press. The review describes “this beautiful, informative, and provocative atlas” as providing valuable lessons for environmental historians and demonstrating “historical ecology as an essential method for understanding ecosystems.” Particular acknowledgment is given to the unique visual dimension of the Atlas, created by SFEI designer **Ruth Askevold**: “Responsible for the design and cartography, Askevold brings Napa’s past ecoscapes to life...”

CRAM 5-day General Training Session

JUNE 10 -14

Sarah Pearce, with assistance by **April Robinson** and **David Gluchowski** led the training session. There were 14 participants (including **Marcus Klatt** and **Micha Salomon**)

Classroom sessions included field examples at 9 local streams and depressional wetlands.

Above and Below: Stories from Our Changing Bay



Above and Below: Stories from Our Changing Bay opened at the Oakland Museum of California August 30. This multidisciplinary show – drawing on art, history, and natural sciences – explores the stories of how humans have shaped and been shaped by the San Francisco Bay. SFEI partnered in the development of the show over the past two years, with Senior Scientist **Robin Grossinger** serving as co-curator.

The exhibition draws extensively on SFEI expertise in contaminant science, mapping, indigenous knowledge, and Bay history. Within the museum, visitors will encounter a forty-foot, walkable floor photomap of the Bay produced by the GIS team. A wall-sized animation based on our research will transport visitors centuries into the past by simulating a pre-contact flyover of the Emeryville shellmound and Temescal Creek. Information graphics from the RMP Pulse of the Estuary are featured throughout the show.

Outreach and Communications

Above and Below was reviewed by Sophia Hussain of Oakland Local. Hussain wrote, “the result is a sense of discovery and wonder that pervades the exhibit.”

The exhibit was also featured on the KQED weekly segment, The Do List.

EDIT

Conferences & Meetings

- SFEI EDIT Staff has been invited to serve on California’s Coastal and Marine Geospatial Working Group, a committee of non-profit and state agency representatives who support the Geoportal’s efforts. This committee was formed in response to Assembly Bill 2125, which calls for the discovery and distribution of geospatial data resources.
- At the invitation of Resources Legacy Fund Foundation, **Tony Hale** and **Kristen Cayce** attended an event showcasing California’s Geoportal.
- In late May, **Tony Hale** attended the FOSS4G conference in Minneapolis. It is a gathering of non-profit, governmental, private, and corporate entities who all share an interest in open-source geospatial technology. SFEI is particularly interested in learning about the latest development and trends in open source software to ensure that we remain innovative, efficient, and prudent with our efforts.

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In the News

JUNE 2013

PBDE flame retardants

– Estuary News

<http://www.sfestuary.org/estuary-news/>

The San Francisco Estuary Partnership featured a description of SFEI's decade of work on PBDE flame retardants in San Francisco Bay biota as part of the "Snap Science" segment of Estuary NEWS (June 2013 edition). Levels of contamination have declined in Bay organisms, a likely result of a state ban and federal phase-out of key PBDE commercial mixtures. Senior scientist **Rebecca Sutton, Ph.D.**, was lead contact with Estuary NEWS staff.

JULY 12

A Look Into a River's Past

– PBS Newshour

<http://www.pbs.org/newshour/multimedia/sanjoaquin/2.html>

PBS Newshour featured Historical Ecology's work reconstructing the Delta's pre-Spanish landscape.



1900 photo shows European-Americans boarding rowboats on the banks of the San Joaquin.

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JUNE 6

SFEI Stormwater Loads and LID Studies - an 11 year Synthesis

by **Lester McKee**. Presentation given to Region 9 EPA, San Francisco.

JUNE 26

Science Support from Cruise Management of Sediment in Bay Area watersheds, Creeks, and San Francisco Bay

By **Lester McKee** and **Sarah Pearce**. Presentation given at the Northern California Geological Society (NCGS) meeting.

JULY 16

The Society for Conservation GIS (SCGIS)

Marcus Klatt gave a presentation titled: Landscape Analysis of the San Francisco Baylands.

AUGUST 7

Ecological Society of America Conference

Erin Beller presented on the use of historical ecology to design for resilience on riverine systems, using a case study from the Santa Clara River in southern California.

AUGUST 27

Adapting to Sea Level Rise in the Bay Area

Robin Grossinger presented the first of two talks he will give to the Commonwealth club. The talk was entitled "Protecting Our Communities, Infrastructure and the Bay."

The talk explored how can we proactively create a new, more sustainable shoreline that integrates natural processes and undervalued resources such as sediment and wastewater? The history of the Bay shows how in the past it evolved in periods of rapid sea level rise and gives clues to how we can incorporate natural features into a future Bay to provide benefits not just to the natural ecology but also water quality and flood risk management. Robin was joined by Jeremy Lowe of ESA PWA and John Bourgeois, of the South Bay Salt Pond Restoration Project in a discussion of the natural ecology of the historic Bay, the changes we may see in the Bay with rising sea levels, and the role that the restoration of wetlands can play in allowing the Bay to adapt to these changes.

<http://www.commonwealthclub.org/events/2013-08-27/adapting-sea-level-rise-bay-area#sthash.C4mHCMMf.dpuf>

SEPTEMBER 9-11

MS4 Pollutant Loads in Small Urban Watershed: Approaches to Supplement Monitoring Data

By **Lester McKee**. Workshop presentation at the 9th Annual CASQA Conference, Squaw Creek, Lake Tahoe, CA.

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Posters**JULY 16**

The following two posters were presented at the South Bay Restoration Project South Bay Science Symposium 2013.

Using Biosentinels to assess Methylmercury Risk in Wetland Restoration Projects

by **April Robinson**, Darrell Slotton, **Joshua Collins** and **Jay Davis**.

Landscape Analysis of the South Bay

by **Kristen Cayce**, **Marcus Klatt** and **April Robinson**.

AUGUST 27-31**Event-scale Sediment Fluxes and Morphodynamics of a Semi-arid River: the Influence of Climate Drivers and Human Actions in the Lower Santa Clara River, California, USA**

by **Peter Downs** (Plymouth University & Stillwater Sciences) and **Scott Dusterhoff** (SFEI). Presented at the 8th International Conference in Geomorphology, Paris, France.

Forum**Brownbags****JULY 16****Historic UC Coast Survey Topographic Sheets**

- **Scott Byram**

Scott Byram has been an affiliated researcher at UC Berkeley since 2007, where he has conducted ground-penetrating radar (GPR) survey and mapping of several California archaeological sites. He has done extensive investigation of 19th century archival Coast

Survey maps depicting archaeological and historical sites along the coast and tidewater of California. These findings will appear in his forthcoming book *Triangulating Archaeological Landscapes: The U.S. Coast Survey in California, 1850-1895* (Contributions of the UC Berkeley Archaeological Research Facility).

JULY 22**Sea Sketch**

- **Evan Paul**

Evan Paul of McClintock Labs spoke about *Sea Sketch*, an online tool for marine spatial planning.

JULY 23**SFEI Initiative on Low Impact Development (LID) Vision and Strategy**

- **Lester McKee**

AUGUST 27**EcoAtlas - An Online Tool for Visualizing California's Aquatic Resources**

- **Meredith Williams**

SEPTEMBER 3**Meteorological Tools**

- **Jan Null**

Jan Null is an adjunct professor at San Francisco State University as well as a certified consulting meteorologist. Jan presented on current meteorological tools as well as long term data and climate patterns.

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SEPTEMBER 9-13

**CRAM 5-day
General Training Session**

Sarah Pearce will lead this training session.

SEPTEMBER 12

Event: Stream Restoration Workshop

Robin Grossinger will be presenting at a workshop titled "Changing Channels: A review and discussion of the science of stream restoration in the Russian River, Sonoma Creek and Napa River watersheds".

Julie Beagle in partnership with Laurel Marcus of the California Land Stewardship Institute will be giving a talk titled "Anticipatory Management: An Example of Passive Restoration on Carneros Creek".

SEPTEMBER 24

**Brown Bag: Bay Area Aquatic
Resource Inventory: A Wetland
and Riparian Base Map**

Presented by Kristen Cayce.

SEPTEMBER 24

**Event: Commonwealth Club:
"Changing Shores"**

Robin Grossinger will be part of the panel for "Changing Shores".

The Save the Bay moment of the 1970s was a premier regional effort at environmental protection and presented a model to the world. It remains an unfinished project, however, for the San Francisco estuary, like all shores, is what Rachel Carson called an "elusive and indefinable boundary," which can never be saved once and for all.

Today, we are working with perspectives of the Bay that are informed by a deeper, more fluid understanding of both geography and history. San Francisco Estuary Institute research informs us of what it was like before the arrival of Europeans. This is supplemented by John Gillis' historical study of coasts and coastal peoples. Exploratorium artist Susan Schwartzberg offers us the artist's capacity to explore the future through the powers of the imagination.

Together, these three panelists will open up for us the future of the Bay as perceived by science and the arts. They will explore their subject as a regional enterprise, an ecological whole that must take into account all the Bay's species, including our own.

OCTOBER 1

**Web Mapping & Raspberry Pi
Data Visualization**

Raspberry Pi is a credit-card size computer that plugs into a keyboard or other device. It has potential applications for mobile or remote environmental data collection. Matt Hill will be presenting his web mapping work and a new project he's working on with a Raspberry Pi and data visualization.

OCTOBER 15

**Meeting: RMP Multi-Year Planning
and Steering Committee Meeting**

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OCTOBER 29-30**2013 RMP Annual Meeting and State of the Estuary Conference**

This year, the RMP is partnering with SFEI to host the RMP Annual Meeting in conjunction with the State of the Estuary Conference. The biennial conference highlights the latest information about the Estuary. This year the conference celebrates milestones for two important regional programs for aquatic resource science and management (CCMP and RMP). The conference theme – “20/20 Visions – Past Reflections, Future Directions” – recognizes the 20th anniversary of both programs.

The RMP Annual Meeting is embedded in the second day of the conference and the topics will include multiple sessions for Emerging Contaminants and Nutrients. We have an exciting line-up of keynote speakers including:

- Debbie Raphael – Director of the Department of Toxic Substances Control
- Dr. Derek Muir – Senior Research Scientist at Environment Canada
- Dr. Jim Cloern – Senior Research Scientist at United States Geological Survey

Here are some of the featured sessions:

- Managing Contaminants of Emerging Concern in the Bay
- Flame Retardants: Effects of Flammability Standards and Bans
- Perfluorinated Compounds in San Francisco Seals and Birds
- Pharmaceuticals: A Cradle to Cradle Approach



- 3 sessions on Nutrients science and management

We will be well-represented with talks throughout the conference:

- Flame Retardants – Effects of Flammability Standards and Bans
Becky Sutton
- Perfluorinated Compounds in San Francisco Bay Seals and Birds
Meg Sedlak
- Reach Level: Watershed Assessment Methods – The Challenges of Assessing Watershed Health
Josh Collins
- Nutrients in San Francisco Bay: Science to Inform Policy
David Senn

Also look for us in the poster session.

The conference will be held at the Oakland Marriott in downtown Oakland on October 29th and 30th. For more information, visit <http://www.sfestuary.org/soe/>

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NOVEMBER 7**Presentations at CERF**

SFEI will present several papers at the 22nd Biennial Conference of the Coastal and Estuarine Research Federation (CERF2013) in San Diego.

- Tony Hale organized and will host a session entitled “Shifting Technology: Innovation Via Collaboration” which will include two EDIT talks:
 - Collaboration as a Paradigm for Effective Decision-making.
Tony Hale
 - www.cramwetlands.org:
A Collaboration Tool Built Collaboratively.
Cristina Grosso, Meredith Williams,
Joshua Collins, Sarah Pierce,
Kristen Cayce, Patricia Frontiera,
Shira Bezalel, Todd Featherston
- Quantifying External Nutrient Loads to San Francisco Bay.
Emily Novick, David Senn
- The Resilient Landscapes program will also present Shifting Shores: Patterns of Transformation and Resilience in the Bay’s Shoreline.
Robin Grossinger, Julie Beagle



Full program information is available here: <http://www.sgmeet.com/cerf2013/>