



SCCWRP Director's Report



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Cross-sector agreement reached to study exfiltration

Leaders from Southern California's stormwater and wastewater management communities have agreed to jointly pursue research aimed at assessing the potential for raw wastewater to exfiltrate from public sewer systems and reach storm drain systems – a landmark cross-sector collaboration that paves the way for improved understanding of this emerging management concern.

During a day-long workshop in February facilitated by SCCWRP and the California Association of Sanitation Agencies (CASA), attendees from the wastewater, stormwater, regulatory, and academic sectors identified three priority exfiltration-related projects that the wastewater and stormwater communities could work on together. CASA and the Southern California Stormwater Monitoring Coalition (SMC) have agreed to collaboratively pursue one or more of these projects.

The agreement to work together follows publication of [SCCWRP-led study](#) in 2025 that attempted to measure sewer

exfiltration in the urbanized lower San Diego River watershed during wet weather. Although multiple lines of evidence pointed to the possibility of sewer exfiltration during wet weather, the technology that underlies two of the three lines of evidence used in the study were relatively novel. Multiple questions about exfiltration remain, including how applicable the San Diego study's findings are to other Southern California watersheds, and how fecal contamination might be transported from the sewer pipe it has exfiltrated from to a water body downstream.

Preventing fecal contamination from reaching water bodies where people swim and surf has long been a top priority of both stormwater and wastewater managers.

Sanitary sewer collection system managers use robust surveillance systems for detecting spills and leaks, including routine camera-based inspections for detecting structural problems with underground sewer pipes. Meanwhile,

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Cover photo: A field crew recovers water from a sewer manhole in San Diego County as part of an effort to measure potential exfiltration from underground sewer pipes. During a workshop at SCCWRP in February, stormwater and wastewater leaders agreed to jointly pursue research aimed at improving understanding of exfiltration in Southern California.

To subscribe: The SCCWRP Director's Report is published quarterly by the Southern California Coastal Water Research Project. To receive this newsletter by email, contact pubrequest@sccwrp.org.

Calendar

Thursday, May 7
CTAG quarterly meeting
(In-person meeting)

Friday, June 5
Commission meeting
(In-person meeting)

stormwater managers routinely trace fecal contamination signals to their upstream origin points, enabling them to eliminate common fecal sources such as illicit sewer connections and illegal discharges.

Collectively, these investments by the stormwater and wastewater management communities have been highly effective at reducing human fecal contamination during dry weather, with more than 97% of Southern California beaches meeting water-quality objectives for fecal indicator bacteria. During wet weather, however, water quality rapidly declines and about two-thirds of these Southern California beaches fail to meet the water-quality objectives.

To understand the potential role that sewer exfiltration might be playing in contributing to water-quality degradation, the SMC and CASA agreed to collaboratively pursue up to three of the following priority projects:

- » An intensive field evaluation targeting a set of small catchments with the highest probability of exfiltration, with the goal to collect more data about how exfiltration might be occurring
- » A study to explain the subsurface transport mechanism by which sewage that has exfiltrated from public and private sewer systems travels through underground routes to reach a downstream water body
- » Development of a joint stormwater-wastewater action plan providing managers with actionable, coordinated steps to take when exfiltration is detected in a watershed



A field crew inspects a stilling well that is being used to measure how much water was recovered after being pumped through a segment of sewer pipe in San Diego. The novel exfiltration measurement method was piloted during a recent SCCWRP-led study that quantified sources of fecal contamination in the urbanized lower San Diego River watershed during wet weather.

Workshop participants are in the process of collaboratively scoping out these projects so both the SMC and CASA can further evaluate each project's feasibility to implement. The SMC and CASA are targeting summer 2026 to launch at least one project.

During the day-long workshop, participants initially identified 30 candidate research projects related to exfiltration that span five thematic areas: improving existing tools to increase confidence in results; characterizing exfiltration prevalence and magnitude; investigating subsurface transport; investigating other potential sources of human fecal contamination; and

developing guidance for stormwater and wastewater agencies.

Both the SMC and CASA have agreed they should co-manage and co-fund the projects, ensuring both sectors have an opportunity to directly shape the projects, review all findings, and coordinate on management actions they might take following the projects.

A technical report summarizing the workshop discussions and outcomes, including summaries of the three priority projects, is expected to be published in the coming months.

For more information, contact Dr. [John Griffith](#) and Dr. [Joshua Steele](#).

Statewide framework successfully applied to first site-specific assessment of estuary health

SCCWRP and its partners have used a newly developed statewide framework to evaluate the health of a Southern California coastal estuary – the first site-specific application of the framework for generating actionable insights about both

ecological condition and causes of degradation.

The Santa Monica Bay estuary assessment – published in January as [a chapter in the annual "State of the Bay" technical report](#) – serves as an initial proof-of-concept for

how to apply the California Estuary Monitoring Program's standardized assessment framework to conduct site-specific evaluations based on ecological functioning. Historically, estuary health has been assessed using more simplistic, readily observable measures like

the [California Rapid Assessment Method \(CRAM\)](#); while easier to conduct, these assessments are less directly tied to the beneficial-use goals that estuary managers are working to protect.

Already, the assessment approach laid out in the Santa Monica Bay pilot is being used to evaluate other estuary sites across the region through the Southern California Bight 2023 Regional Monitoring Program's regional assessment of estuary health. The Bight '23 final assessment report, which is expected to be published this summer, will enable the Santa Monica Bay assessment findings to be placed into a regional context.

The Santa Monica Bay estuary assessment targeted five sub-estuary sites within the larger Santa Monica Bay estuary, and marks the first time that small creek mouth estuaries were assessed; small creek mouth estuaries like Big Sycamore Canyon and Topanga Lagoon have been traditionally excluded due to lack of available protocols and data.

After the ecological function-based assessment was conducted, an expert technical panel was tasked with reviewing the data and working toward consensus on how to interpret the data, including assigning condition scores.

Via the panel process, overall condition was scored as AVERAGE or STABLE/CONSISTENT for Big Sycamore, Arroyo Sequit and Topanga Lagoon, and GOOD or IMPROVING for Zuma and Malibu Lagoons. The panel attributed the higher scores at Zuma and Malibu to the effectiveness of restoration and management actions.

The panel also reached consensus on the major stressors adversely affecting estuary health: altered watershed hydrology, mouth confinement, and excessive human visitation, plus the downstream effects of recent wildfires in some areas. Overall, the panel concluded that stress on Santa Monica Bay was AVERAGE and INCREASING.

After completing their evaluations, panelists agreed that the ecological function-based assessment generated monitoring insights that enhanced their

ability to reach consensus, and that supported the defensibility in their conclusions.

The California Estuary Monitoring Program (CalEMP) is the name of the new statewide umbrella program that was created in February to bring enhanced structure and organization to both the [Southern California Wetlands Recovery Project \(WRP\) Estuary Monitoring Program](#) and the [California Estuarine Marine Protected Areas \(EMPA\) Monitoring Program](#).

Both programs use the same assessment framework, and both programs are now housed within CalEMP's newly created, integrated [data portal](#).

The assessment framework was originally developed to support the EMPA program. Meanwhile, the WRP, which is made up of 18 local, State and federal management agencies, [formally committed](#) in December 2025 to begin incorporating the assessment framework into regulatory and grant requirements, as well as to coordinate monitoring efforts regionally.

The statewide estuary monitoring framework is modular in its design, giving participants flexibility to decide which aspects of wetland health they will

monitor and how intensely – while simultaneously enabling disparate data sets to be stitched together to paint an overall picture of wetland health. For example, the Santa Monica Bay assessment was about twice as intensive as the Bight '23 assessment that will be completed later this year.

Researchers' goal is for the standardized framework to help managers evaluate the relative success of different wetland restoration projects.

California has spent more than \$600 million over the past two decades to protect and preserve wetlands, but these efforts have largely been site-specific and siloed, with managers historically lacking rigorous assessment tools and a unified monitoring program to evaluate the causes of major stress on estuaries and the effectiveness of management interventions.

Coastal estuaries play a critical role at the land-sea interface, helping to buffer against coastal flooding, filter and retain contaminants, and provide critical habitat for vulnerable plant and animal communities.

For more information, contact Dr. [Jan Walker](#).



Researchers have applied a newly developed ecological function-based approach to assess the health of estuaries across Santa Monica Bay, including Malibu Lagoon, above. The standardized statewide assessment framework generates insights about both ecological condition and causes of degradation, paving the way for managers to evaluate the relative success of different wetland restoration projects.

Index scoring tool developed to enable Bight '23 assessment of eelgrass health

SCCWRP and its partners have developed an initial version of a condition index scoring tool for evaluating the health of Southern California eelgrass beds based on their ecological functioning – a prototype tool that has paved the way for the Southern California Bight 2023 Regional Monitoring Program to complete its first regional assessment of eelgrass health and for researchers to explore extending this assessment approach to coastal estuary environments.

The *Zostera Ecosystem Function Reporter* (ZEFR, pronounced “zephyr”) prototype tool – described in a [SCCWRP technical report](#) published in April – integrates estimates of seven key measures of ecosystem functioning and services to produce a single combined score.

ZEFR evaluates an individual eelgrass bed’s ability to provide refugia to fish and other animals, as well as provide other ecosystem services, including attenuating ocean waves, promoting sediment stabilization, and sequestering carbon.

Eelgrass beds, which are scattered across shallow, soft-bottom coastal areas of Southern California, are the dominant type of seagrass found in California’s coastal embayments. In recent years, California has invested significant resources into restoring and protecting eelgrass and

other seagrass beds, which have been decimated by a range of human activities.

Traditionally, eelgrass assessments in Southern California have focused primarily on documenting the location and size of eelgrass beds. Furthermore, this monitoring has historically been uneven, with some sites not getting monitored at all and other sites being monitored using less rigorous, non-standardized assessment methods.

As part of ZEFR’s development, researchers evaluated 31 randomly selected Southern California eelgrass beds, finding that 12% of the region was in Good condition, 65% was in Moderate condition, 20% was in Poor condition, and 3% was in Bad condition.

Researchers also broke down the assessment into three different habitat types – large embayments, small embayments, and estuaries – finding that eelgrass from large embayments was in the best condition, with 80% in Good or Moderate condition and 0% in Bad condition. Conversely, small embayment eelgrass was in the worst condition, with only 60% in the Good or Moderate condition and 20% in Bad condition.

The Bight '23 Submerged Aquatic Vegetation (SAV) study element is applying ZEFR to conduct a similar but

independent assessment of eelgrass condition across the Southern California Bight. The Bight '23 SAV final assessment report is expected to be published this summer.

Regional assessments of eelgrass beds will enable coastal managers to place site-specific assessments into regional context, as well as enable managers to quantitatively assess the success of eelgrass restoration and mitigation projects, including for determining compliance with the [California Eelgrass Mitigation Policy](#), which calls for no net loss of eelgrass habitat function.

More broadly, the assessment approach will help managers determine if coastal estuaries – of which eelgrass beds are a part – have achieved beneficial-use designations that are required under state and federal regulatory programs.

Eventually, ZEFR is expected to serve as a proof-of-concept for how to develop condition index scoring tools for coastal estuaries – a much larger, more ecologically diverse habitat type than eelgrass beds.

ZEFR is based on seven functional measures of eelgrass health: carbon sequestration, sediment stabilization, primary production, secondary production, nekton habitat, waterfowl habitat, and improvement of water quality. SCCWRP convened an expert advisory panel to reach consensus on which measures to include in the condition index tool.

The technical underpinnings for ZEFR were originally [co-developed by SCCWRP](#) in 2020 and piloted at smaller scales.

While ZEFR was developed for use in Southern California, the index could be readily adapted for use outside Southern California. Already, some pilot testing is underway in Morro Bay in Central California.

For more information, contact Dr. [David Gillett](#) and Dr. [Jill Tupitza](#).



Photo courtesy of Corbin Blanch, California State University, Long Beach

Researchers have developed a prototype condition index scoring tool for evaluating the health of Southern California eelgrass beds based on their ecological functioning. The tool evaluates eelgrass’s ability to provide refugia to fish and other animals, as well as provide other ecosystem services.

Regional monitoring network being leveraged to extend value of stormwater BMPs

Participants of a SCCWRP-facilitated regional stormwater BMP monitoring network have developed recommendations for how to leverage the Southern California Stormwater Monitoring Coalition's initial field monitoring data to jumpstart development of a focused BMP research agenda aimed at extracting more value from the hundreds of millions of dollars that public agencies spend on these structural stormwater control measures.

During a day-long workshop in March that attracted more than 100 attendees, the 18-member SMC agreed that its Regional BMP Monitoring Network has generated foundational insights that can both help improve existing BMPs (best management practices) that aren't performing to their full potential, as well as help improve design and construction guidance for future BMPs being planned.

Based on these recommendations, researchers already have begun drafting scopes of work for additional potential SMC projects that would leverage the monitoring network to answer focused, high-priority management questions related to BMP performance.

Candidate SMC studies include working to isolate causes or characteristics of individual biofilter BMPs with exceptionally strong and poor performance, with a goal to refine design guidance for future biofilters. Other follow-up studies may include working to identify effective retrofit options and/or alternative designs to improve treatment performance for bacteria, nitrogen and other priority pollutants.

The SMC established the Regional BMP Monitoring Network in 2020 to generate high-quality, comparable data sets on the performance of bioretention systems, infiltration galleries and other types of structural BMPs across Southern California. BMPs can perform very differently in Southern California than in

other, wetter parts of the U.S., underscoring the need to collect locally relevant performance data.

Although Southern California has implemented hundreds of structural BMPs over the past three decades, the region lacks robust data sets to comprehensively explain the factors and conditions that disproportionately influence how these systems perform – or underperform – and how this performance evolves over time.

While SMC member agencies will continue to do some monitoring of BMPs already in the network, the network wasn't designed solely to generate extensive longitudinal data sets each year for tracking performance over time. Rather, researchers envision the network serving as a platform for adaptive monitoring – a regional platform upon which to build special studies that probe specific, focused management questions.

Over time, participants will be able to leverage the network's existing monitoring infrastructure – which presently includes BMP sites from Los Angeles to San Diego – to study specific types of BMPs, specific classes of pollutants, and specific operating conditions and maintenance regimes. The network's infrastructure includes everything from standardized field monitoring plans to data submission portals to custom-built data analysis tools.

During the March SMC workshop, SCCWRP provided a deep-dive overview of the BMP monitoring data collected to date. Altogether, data from 13 individual biofilter BMPs and more than 100 storm events have been collated via the network. Because of the limited number of storms in Southern California and the extensive planning and training required to collect BMP performance data, it took multiple years for the SMC to build this robust, regionally representative data set.

Already, the network's data have helped the SMC to pinpoint weaknesses in



The Southern California Stormwater Monitoring Coalition (SMC) has used its Regional BMP Monitoring Network to generate foundational insights about the performance of structural BMPs, including bioretention systems like the one above. The SMC has begun developing recommendations for how to use the regional data to help improve existing BMPs that aren't performing to their full potential, as well as help improve design and construction guidance for future BMPs.

performance metrics commonly used to assess BMP performance. For example, the Los Angeles County Flood Control District partnered with SCCWRP to build a scoring tool known as the [Multi-Metric BMP Performance Index](#) that quantifies the extent to which structural BMPs contribute to meeting downstream water quality objectives. Unveiled in 2025, the Multi-Metric BMP Performance Index represents an improvement over traditional BMP performance assessments that tend to focus on whether BMPs are meeting static expectations specified in BMP design manuals and water-quality regulatory targets. Early data sets from the SMC's monitoring network helped bring into focus the need for such a tool and how it should be applied and interpreted.

For more information, contact Dr. [Elizabeth Fassman-Beck](#).

Bight '23 highlights positive influence of source control in reducing trash in waterways

The Southern California Bight Regional Monitoring Program has completed its latest five-year assessment of how trash is spreading through the region's aquatic environments – a study that provides compelling evidence that source-control actions over the past decade have been highly effective in reducing some trash in streams, even as questions remain about how trash on land is being transported to and settling onto the coastal ocean floor.

The Bight '23 trash assessment, described in a [technical report](#) published in April, found that levels of single-use plastic bags observed in and along Southern California waterways decreased by 70% following a statewide plastic bag ban, while overall trash levels held roughly steady in these same areas.

In 2016, a statewide ban on carry-out plastic bags at grocery stores and pharmacies went into effect, following the law's 2014 passage and a subsequent unsuccessful referendum to overturn it. Around the same time, California developed a regulatory program requiring areas with high trash-generating rates to install full-capture devices at storm drain inlets to block trash pieces larger than 5 millimeters in size (or develop an equivalent trash management strategy); the program, known as California's Trash Amendments, was unveiled in 2015 and is being implemented in phases through 2030.

Numerous local and regional trash source-control actions also have been implemented over this time span.

Separately, the Bight '23 trash assessment quantified the portion of Southern California's coastal seafloor where trash can be found, continuing a monitoring practice that has been in place since 1994.

An estimated 19% of the coastal seafloor down to about 400 feet deep contains at least one piece of trash, according to the Bight '23 seafloor assessment. By

comparison, Bight '23 found that an estimated 83% of Southern California's 4,600 miles of streams draining to the coastal ocean contain at least one piece of trash.

What researchers cannot explain with the two data sets is how much trash in streams ends up in the ocean, or the transport mechanisms by which this movement could be occurring, including whether ocean currents and other conditions could be displacing trash further after it initially reaches the coastal seafloor.

It also remains unclear how much trash from land remains suspended in the water column, gets funneled into deep underwater canyons, and/or becomes trapped by other structures; all are areas where the Bight program does not do trash monitoring.

By contrast, the Bight program's stream data sets have been successful at linking management actions to outcomes. In addition to the plastic-bag ban success story, researchers are hoping to use the

regional stream data to track the effectiveness of the latest generation of source-control actions, including California Senate Bill 54, which was passed in 2022 and will require all single-use plastic packaging and food service ware to be recyclable or compostable by 2032.

Stream trash data are collected for the Bight program through a partnership with the Southern California Stormwater Monitoring Coalition (SMC).

Even with the publication of the Bight '23 Trash assessment report, participants of this study element have not wrapped up their work. The Bight '23 Trash element also is conducting a first-of-its-kind regional assessment of microplastics contamination, leveraging newly standardized methods for collecting and measuring microplastics particles in seafloor sediment and shellfish. These findings are expected to be published as a separate assessment report later this year.

For more information, contact Dr. [Leah Thornton Hampton](#).



Photo courtesy of Karin Wisenbaker, Aquatic Bioassay & Consulting Laboratories

Trash accumulates in the Los Angeles River along Glendale Narrows. The Southern California Bight Regional Monitoring Program has completed its latest five-year assessment of how trash is spreading through the region's aquatic environments; among the study's findings is that source-control actions over the past decade have been highly effective at reducing some trash in streams.

Updates by Thematic Area

SCCWRP Research Themes **BIOASSESSMENT** • **ECOHYDROLOGY** • **EUTROPHICATION** • **CLIMATE RESILIENCY** • **CONTAMINANTS OF EMERGING CONCERN** • **MICROBIAL WATER QUALITY** • **STORMWATER BMPs** • **REGIONAL MONITORING**

BIOASSESSMENT

Novel eDNA method developed to detect threatened fish species in Southern California streams

SCCWRP and its partners have developed a novel method for detecting the Santa Ana sucker in Southern California streams using environmental DNA (eDNA) – a noninvasive approach that managers hope can help inform conservation strategies for the threatened freshwater fish species.

The species-specific assay, which was developed in February, uses the digital polymerase chain reaction (dPCR) method to detect the presence of the Santa Ana sucker at low concentrations. eDNA offers a promising, rapid alternative to traditional field collection and identification of species, enabling earlier detection of a range of invasive, threatened and difficult-to observe species.

The Santa Ana sucker, a freshwater species native only to the Los Angeles and Santa Ana River basins, is sensitive to changes in flow patterns and has experienced population declines in recent years.

SCCWRP, in partnership with the San Bernardino Municipal Water District and the Riverside Corona Resource Conservation District, successfully validated the method by testing it against multiple fish species to ensure that the assay can distinguish the Santa Ana sucker from other species.



Researchers have developed an environmental DNA (eDNA) assay for detecting the threatened Santa Ana sucker fish, above. The method offers a promising, rapid alternative to traditional field collection and/or observation of the fish.

SCCWRP completes intercalibration exercise for detecting golden mussel using eDNA-based methods

SCCWRP and the California Department of Fish and Wildlife (CDFW) have successfully demonstrated the use of environmental DNA (eDNA)-based methods to detect the presence of an invasive freshwater mussel species.

In an intercalibration exercise completed in March, six laboratories, including SCCWRP, were able to generate comparable, high-quality species identification data based on the DNA that golden mussel shed into their environment, known as eDNA.

Golden mussel is a highly invasive freshwater species that has been found in more than a dozen water bodies across

California since being discovered in the San Francisco Bay Delta in 2024; it is especially a threat in reservoirs because it can clog pipes and pumps.

Researchers will explore how to apply the same method standardization approach to additional species.

ECOHYDROLOGY

Pilot study expands use of flows framework to groundwater management

SCCWRP and the California Department of Water Resources (DWR) have launched a pilot study to test-drive how a statewide scientific framework that was originally developed to help managers determine the environmental flow needs of California streams can also help shape more

sustainable groundwater management practices statewide.

The study, which kicked off in March, will apply the California Environmental Flows Framework (CEFF) to multiple streams across Northern California to determine how much of the stream's wet-weather flows can be diverted to support groundwater recharge, while still protecting the ecological benefits provided by the flows.

Under the Flood-Managed Aquifer Recharge (Flood-MAR) program, DWR currently diverts only about 20% of these wet-weather flows for groundwater recharge. The CEFF analysis will provide a scientific basis for DWR to determine if these diversion volumes can be increased.

If wet-weather diversions can be increased, it could reduce the need to divert stream flows during dry weather – a potential benefit given that demand for dry-weather flows tends to be especially high across drought-prone California.

Modeling approach to help managers identify how stream flow changes impact temperature, oxygen levels

SCCWRP and its partners have developed an approach for designing modeling tools that can predict how changes in flow patterns will influence stream temperature and dissolved oxygen levels across space and time – part of an ongoing three-year study seeking to expand the management utility of the California Environmental Flows Framework (CEFF).

The approach, described in a technical memo that was submitted to the California Department Fish and Wildlife (CDFW) in March, will enable researchers to develop regional-scale models that address more integrated management questions about how changes in stream flow patterns influence ecosystem health. Existing flow modeling tools that support CEFF do not adequately account for the relationships between flows and other parameters, including water temperature and dissolved oxygen levels.

Researchers hope the "From Framework to Flows (F2F)" project will extend CEFF's

utility by providing insights about the combined stresses of altered flows, water temperature and dissolved oxygen levels on stream health.

CEFF, which was co-developed by SCCWRP and unveiled in 2021, offers a rigorous, standardized approach for determining how to allocate limited surface flows that balance both human and ecosystem needs for flowing water.

EUTROPHICATION

Web-based tool helps analyze, visualize inland HABs satellite monitoring data

SCCWRP and its partners have developed a web-based tool for analyzing and visualizing satellite remote sensing data sets that is intended to help managers detect and monitor harmful algal blooms (HABs) in California's large lakes, reservoirs, and select tidal water bodies.

The [tool](#), released in April, provides users with information on HABs status and trends across California to support a range of site-specific and regional management decisions and assessments. The tool's development is part of ongoing efforts by the California State Water Resources Control Board's Freshwater Harmful Algal Bloom (FHAB) Program to establish

standardized approaches for assessing HABs in California's inland water bodies.

Satellite remote sensing data have the potential to provide a viable, cost-effective way to generate a continuous stream of real-time HABs monitoring data. In 2022, SCCWRP and its partners demonstrated how to [use satellite imaging data](#) to build a comprehensive, five-year portrait of when and where HABs have been occurring in California's large lakes and reservoirs.

Researchers plan to expand the tool by adding data on HAB environmental drivers, including water temperature and precipitation.

Wildlife rehabilitation center trained on method for testing seabirds for HAB toxin poisoning

Staff from a regional wildlife rehabilitation center learned how to test seabirds that become stranded on Southern California beaches for poisoning by harmful algal bloom (HAB) toxins during a SCCWRP-led training in April.

The training, held at Wetlands and Wildlife Care Center in Huntington Beach, provided hands-on training on how to handle, extract, and analyze samples to test for domoic acid, a neurotoxin produced by a HAB species known as *Pseudo-nitzschia* that can cause seizures,



Researchers have developed a web-based tool for analyzing and visualizing satellite remote sensing data sets that is intended to help managers detect and monitor harmful algal blooms (HABs) in California's large lakes, including Clear Lake, above. The development of the tool is part of an ongoing statewide effort to establish standardized approaches for assessing HABs in California's inland water bodies.

disorientation, beach strandings and even death in marine mammals and seabirds. The test is based on enzyme-linked immunosorbent assay (ELISA) methods originally developed for water samples.

While the impacts of domoic acid on marine mammals have been well-documented, researchers know far less about the interactions between HABs and seabirds. By building in-house capacity, researchers hope rehabilitation centers can better assess the severity of mass poisoning events and determine the most effective treatment strategies. The data also are expected to help inform the development of early warning systems for mass seabird stranding events and improve understanding about how domoic acid is transferred through marine food webs.

SCCWRP is continuing to provide technical support to ensure successful adoption and use of the method.



Metal spears, above, are integrated into the design of passive sampling devices to ensure the devices, upon being deployed, will stay anchored to the seafloor. Passive sampling technology, which uses a thin membrane film, was recently deployed at a former industrial waste dump site in the San Pedro Basin to measure how much of the pesticide DDT is diffusing out of seafloor sediment and re-entering the water column.

EMERGING CONTAMINANTS

Passive samplers deployed to measure DDT in sediment at offshore dump sites

SCCWRP and the Scripps Institution of Oceanography have initiated a second deployment of passive samplers to measure levels of the pesticide DDT diffusing out of seafloor sediment at a former offshore industrial waste dump site – the second such deployment to better understand the ecological risks posed by this decades-old contamination.

The passive samplers, deployed in April at the former San Pedro Basin dump site, are measuring contamination levels in the water between sediment particles – known as sediment porewater – which will help researchers develop models that can estimate the levels of contamination re-entering the water column over time. This chemical contamination, which became attached to sediment particles decades ago, is gradually diffusing back into the water column.

Located between the mainland and Catalina Island, the DDT dump site

received thousands of barrels and bulk waste from the former Montrose Chemical Corporation in Los Angeles County, which was at the time the largest DDT manufacturer in the nation.

Passive sampling devices consist of thin membrane films that can detect low levels of contaminants in surface layers of sediment that dissolve into the water column. To support the deployment, SCCWRP helped develop metal spears that are affixed to the underside of the passive sampling instrument. Upon making contact with the seafloor, the spears pierce through the sediment, ensuring the passive samplers will remain anchored in place for the duration of the eight-month deployment.

MICROBIAL WATER QUALITY

Study launched to examine relationship between coliphage and pathogens in shellfish

SCCWRP and its partners have launched a year-long study examining whether an alternative, virus-based method for tracking fecal contamination can serve as a reliable indicator for protecting humans

who consume shellfish harvested from local water bodies.

The study, which began laboratory experiments in April, will investigate the relationship between levels of coliphage – a virus that infects certain fecal bacteria – and levels of human pathogens like norovirus and adenovirus in shellfish tissue. Shellfish are filter feeders that take up contaminants in the water column.

Fecal contamination in recreationally harvested shellfish is commonly monitored by measuring total bacterial coliform levels in the water column, but a [2021 SCCWRP-led study](#) found no correlation between coliform levels in the water column and the levels of pathogenic viruses in oyster tissue, underscoring interest in identifying an alternative method for monitoring shellfish for potentially unsafe levels of contamination. Coliphage has the potential to be advantageous because it more closely mimics the viral pathogens that sicken humans.

During the study, researchers will expose oysters that have been placed into tanks to raw sewage; both coliphage and viral pathogens will then be measured. Results are expected to be completed in late 2026.

STORMWATER BMPs

SCCWRP co-leading new regional center for stormwater best practices in U.S. Southwest

SCCWRP has been selected to co-lead a new regional knowledge center that will synthesize and translate growing knowledge about regional best-practices solutions for stormwater management and financing into actionable tools and guidance – insights that will be tailored to the unique stormwater management challenges confronting arid and semi-arid states.

The [Southwest Stormwater Center](#) (SWSC), which completed a quality assurance project plan in April that paves the way for the Center to begin its core work, is one of four regional Centers of Excellence for Stormwater Control Infrastructure Technologies established by the U.S. Environmental Protection Agency. The center is co-led by the Desert Research Institute in Nevada, and will serve Southern California, Nevada, Arizona, Utah and New Mexico.

The Center will tackle five technical topics: BMP design and assessment, stormwater planning, stormwater capture and use, funding and financing, and stakeholder engagement. Many stormwater management solutions that are developed for wetter regions of the United States are not directly applicable to the arid and semi-arid Southwest, where rainfall events tend to be infrequent but intense.

To ensure Center products are optimally aligned to meet the needs of the stormwater management community, the Center will host a kickoff workshop June 9-10, 2026 at SCCWRP to solicit feedback on how to design technical tools, information and products for Southwestern states. For more information about the Center and the upcoming workshop, contact Dr. [Elizabeth Fassman-Beck](#).



A field crew receives training on standardized protocols for collecting field data in the Santa Ana River watershed. SCCWRP facilitated an intercalibration exercise to ensure participants of the Southern California Stormwater Monitoring Coalition (SMC) Regional Watershed Monitoring Program continue to generate high-quality, comparable results.

REGIONAL MONITORING

Stream monitoring program completes intercalibration, kicks off field sampling

The Southern California Stormwater Monitoring Coalition (SMC) has kicked off field sampling for its Regional Watershed Monitoring Program, following the completion of a SCCWRP-facilitated, annual field intercalibration exercise to ensure program participants can continue to generate high-quality, comparable results.

During the day-long SMC intercalibration exercise in March, program participants reviewed standardized protocols for collecting field data at Martha McLean-Anza Narrows Park in Riverside, a site near a tributary of the Santa Ana River. The site was chosen because it is part of an ongoing physical habitat restoration project to improve stream biological health.

SCCWRP and the SMC are leveraging this year's stream sampling effort to collect data for a recently launched [three-year](#)

[study](#) that is working to understand how restoring the physical habitat of streams that flow through Southern California's engineered channels might be able to improve their biological health.

Rather than start its next five-year monitoring cycle, the SMC decided to [extend its third five-year cycle](#) by one year, through 2026.

SCCWRP enhances data portal for statewide estuary monitoring program

SCCWRP has redesigned and restructured the data portal for a recently rebranded statewide program that is monitoring the health of coastal estuaries – an upgrade that enables the program to serve as an umbrella under which multiple estuary monitoring efforts are nested.

The redesigned California Estuary Monitoring Program (CalEMP) [data portal](#), launched in February, encompasses the existing Southern California Wetlands Recovery Project (WRP) Estuary Monitoring Program and the California

Estuarine Marine Protected Areas (EMPA) Monitoring Program.

The data portal, which is designed to readily scale to support estuary monitoring statewide, provides streamlined access to standardized monitoring protocols, monitoring datasets, and synthesized data to help inform California's management of coastal estuaries.

SCCWRP is supporting the program by managing the program data management infrastructure, which includes the web-based submission portal and data analysis and visualization tools.



SCCWRP has redesigned and restructured the data portal for the recently rebranded California Estuary Monitoring Program (CalEMP), enabling the program to serve as an umbrella under which multiple estuary monitoring efforts across California can be nested, including programs that target estuaries like Morro Bay Estuary, above.

New SCCWRP Publications

Journal Articles

Brander, S.M., S.H. Swan, [A.C. Mehinto](#), K.A. Kidd, J.S. Weis, S.M. Belcher, J.C. DeWitt, S.L. Harper, C.C. Helbing. 2026. [Impacts of environmental stressors on fertility and fecundity across taxa, with implications for planetary health](#). *npj Emerging Contaminants*
DOI:10.1038/s44454-026-00032-6.

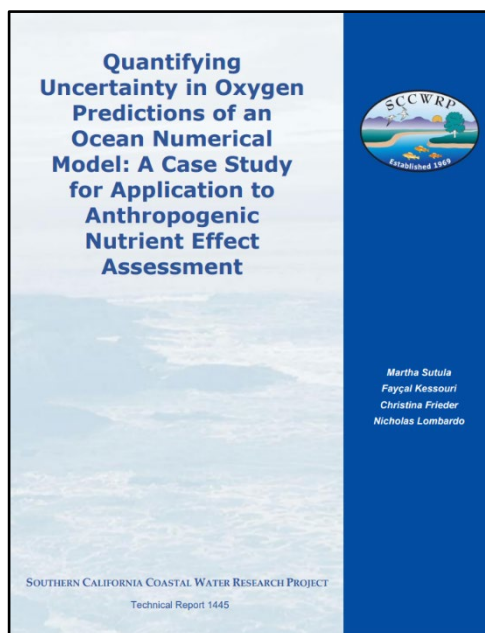
Gómez, L., D. Marinov, E. Porcel-Rodríguez, D. Scaccabarozzi, I. Sanseverino, P. Sciuto, F. Narendja, R. Hornek-Gausterer, K. Lenz, C. Chalon, Y. Marneffe, P. Soldán, M. Hora, M.T. Leppänen, J. Järvistö, J. Viidanoja, S. Ait-Aissa, E. Maillot-Marechal, A.E.R. El Mais, B.I. Escher, M. König, H. Hollert, S. Wollenweber, S. Buchinger, M. Ohlig, R. Pedrazzani, J. Lundqvist, A. Oskarsson, E. Vermeirssen, S. Maletz, D. Olbrich, [A.C. Mehinto](#), K. Wong, N. Denslow, L. Amendola, R. Gil-Solsona, P. Gago-Ferrero, M. Potalivo, M. Carere, T. Lettieri. 2026. [Effect-based methods and effect-based trigger values for estrogenicity monitoring in surface water: an interlaboratory study](#). *Environmental Research* 298:124218.

Grimm, S.L., J.A. Rothman, W.J. Bradshaw, [K. Langlois](#), [J.A. Steele](#), [J.F. Griffith](#), J.T. Kaufman, K.L. Whiteson. 2026. [Deep metatranscriptomic sequencing data of wastewater from Los Angeles, USA, 2023–2024](#). *Scientific Data* DOI:10.1038/s41597-025-06475-7.

[Ho, M.](#), J. Molemaker, P. Damien, M.C. Long, D. Bianchi, J.C. McWilliams. 2026. [Ocean alkalinity enhancement in an estuary](#). *Frontiers in Climate* 7:1665329.

[Kessouri, F.](#), [M. Sutula](#), [J. Smith](#), J. McWilliams, M. Sandoval-Belmar, D. Bianchi, P. Damien, [M. Ho](#), R. Kudela, C. Anderson. 2026. [Anthropogenic, climate, and meso and submesoscale influences on diatom productivity in the Southern California Bight, with implications for domoic acid producing harmful algal blooms](#). *Frontiers in Marine Science* 13:1729816.

Kleindl, W.J., S.P. Church, K.C. Rains, M.C. Rains, [E.D. Stein](#), M.K. Suddreth.



SCCWRP has published a technical report quantifying uncertainty, or error, associated with the predictions of the ROMS-BEC (Regional Ocean Modeling System-Biogeochemical Elemental Cycling) modeling tools. This report complements recently published [quality assurance documentation](#) for the modeling tools.

2026. [Bridging Functions and Values: Advancing Wetland Ecosystem Service Assessment Through Use of a Service Capacity Index](#). *Wetlands* 46:25.

[McGruer, V.](#), G. Braun, [D. Xin](#), B.I. Escher, [E. Fassman-Beck](#), [A.C. Mehinto](#). 2026. [Evaluating the Effectiveness of Street Sweeping for Reducing Toxicity of Urban Runoff](#). *ACS ES&T Water* 4:2301-2309.

Ryan, A.C., R.C. Santore, [K.C. Schiff](#). 2026. [An Updated Unified Zinc Biotic Ligand Model for Protection of Freshwater Aquatic Life and its Application for Site-Specific Water Quality Objectives](#). *Integrated Environmental Assessment and Management*
DOI:10.1093/inteam/vjag031.

Tiernan, E.D., [J. Gray](#), [D. Nguyen](#), B. Shi, M. Wang, K. Dunn, J. Peng, D. McCarthy, [E. Fassman-Beck](#). 2026. [Automated detection of illicit](#)

[discharges in storm drains using a distributed network of low-cost IoT sensors](#). *Urban Water Journal*
DOI:10.1080/1573062X.2026.2641088.

Journal Articles (Accepted)

[Gray, J.](#), [E. Fassman-Beck](#), K. Cheng, R. Biller, [K.C. Schiff](#). Frequency of Maintenance Needs in Biofilters Throughout Los Angeles, CA USA. *Journal of Sustainable Water in the Built Environment*.

Technical Reports

[Gillett, D.J.](#), C.R. Whitcraft, C. Blanch, [A. Le Compte Santiago](#), [E.D. Stein](#), [J. Tupitza](#). 2026. [A Regional Assessment of the Condition and Quality of Southern California's Eelgrass \(Zostera marina\) Habitat from the Perspective of Ecosystem Services](#). Technical Report 1471. Southern California Coastal Water Research Project. Costa Mesa, CA.

McLaughlin, K., [J. Smith](#), [M. Sutula](#). 2026. [Recommendations for co-located monitoring of marine harmful algal blooms, ocean acidification and hypoxia, September 14-15, 2023, workshop proceedings](#). Technical Report 1462. Southern California Coastal Water Research Project. Costa Mesa, CA.

Patin, N., [M. Sutula](#), [C.A. Frieder](#), [S. Theroux](#). 2026. [Best practices for monitoring biological effects of ocean acidification with environmental DNA \(eDNA\) and other 'Omics approaches: March 17-18, 2025, Workshop Proceedings](#). Technical Report 1461. Southern California Coastal Water Research Project. Costa Mesa, CA.

[Sutula, M.](#), [F. Kessouri](#), [C.A. Frieder](#), [N. Lombardo](#). 2026. [Quantifying Uncertainty in Oxygen Predictions of an Ocean Numerical Model: A Case Study for Application to Anthropogenic Nutrient Effect Assessment](#). Technical Report 1445. Southern California Coastal Water Research Project. Costa Mesa, CA.

[Sutula, M.](#), [F. Kessouri](#), [M. Ho](#), [C.A. Frieder](#). 2026. [Numerical Simulation of Potential Eutrophication Effects of Oil and](#)

[Gas Produced Water Discharges on the Southern California Bight](#). Technical Report 1446. Southern California Coastal Water Research Project. Costa Mesa, CA.

[Thornton Hampton, L.M., V. McGruer, A.C. Mehinto](#), W. Cowger, R. McNeish, [K.C. Schiff](#). 2026. [Southern California Bight 2023 Regional Monitoring Program: Volume V. Trash and Marine Debris](#). Technical Report 1473. Southern California Coastal Water Research Project. Costa Mesa, CA.

Data Products

[Mazor, R.D., D. Nguyen. Reference Condition Monitoring Program: Reference and Flow Status Dashboard](#). Southern California Coastal Water Research Project. Costa Mesa, CA.

[Mazor, R.D., D. Nguyen. Channel Engineering Review Dashboard](#). Southern California Coastal Water Research Project. Costa Mesa, CA.

[Nguyen, D., V. McGruer, P. Smith, A. Santana, A.C. Mehinto. Los Angeles County Post-Fire Monitoring Network Data Portal](#). Southern California Coastal Water Research Project. Costa Mesa, CA.

Quarter in Review

Conference Presentations

Frieder, C.A., F. Kessouri, S. Chu. Submesoscale numerical ocean modeling of Direct Ocean Capture in the Southern California Bight. Ocean Sciences Meeting. February 23, 2026. Glasgow, Scotland.

Jansen, L.S., K.T. Taniguchi-Quan, R.D. Mazor. Assessing human benefits of healthy waterbodies. Santa Ana River Science Symposium. February 19, 2026. Redlands, CA.

Mazor, R.D., D.J. Gillett, A. Santana. Rapid tools for causal assessment of biological degradation at the regional, watershed, and reach scales in the Santa Ana watershed. Santa Ana River Science Symposium. February 19, 2026. Redlands, CA.

Mehinto, A., V. McGruer, D. Nguyen, E. Duncan. Los Angeles Post-Fire Monitoring Network: A Collaborative Approach to Assessing the Impacts of Wildfires. Society of Environmental Toxicology and Chemistry, Southern California Chapter Annual Meeting. April 27-28, 2026. San Pedro, CA.

Schiff, K, D. Xin, E. Fassman-Beck, S. Dial-Sauer. A field study of microplastics' removal in Southern California's bio filters. American Society of Civil Engineers Low Impact Development Conference. March 2-4, 2026. Jacksonville, FL.

Schiff, K, D. Xin, J. Gray, E. Fassman-Beck, A. Benitez. Developing and applying rapid assessments of BMP conditions throughout Los Angeles, CA USA.

American Society of Civil Engineers Low Impact Development Conference. March 2-4, 2026. Jacksonville, FL.

Schiff, K., E. Fassman-Beck, D. Xin, A. Jong-Levinger. Quantifying the Effectiveness of Southern California Stormwater BMPs to Remove Pollutants. Southern California Society of Environment Toxicology and Chemistry Annual Meeting. April 27-28, 2026. San Pedro, CA.

Taniguchi-Quan, K.T., E. Stein, S. Parsons, L. Jansen. Balancing Water Reuse and Habitat Protection for the Santa Ana River at Prado: Application of the California Environmental Flows Framework. Santa Ana River Science Symposium. February 19, 2026. Redlands, CA.

Taniguchi-Quan, K.T., B. Lane, J. Morgan, A. Lee, K. Irving, E. Stein, L. Jansen, T. Grantham, G. Rossi. Ecological Risk Assessment to Inform Regional Instream Flow Management. 43rd Annual Salmonid Restoration Conference. May 1, 2026. Redding, CA.

Thornton Hampton, L.M., A. Mehinto. The Microplastics Monitoring Toolbox: Progress in Method Harmonization and Standardization. Society of Environmental Toxicology and Chemistry, Southern California Chapter Annual Meeting. April 27-28, 2026. San Pedro, CA.

Conference Posters

Frieder, C.A. Development of an Ocean Health Dashboard for the U.S. West Coast, a Broad Oceanographic Region with Multi-

Level Governance. Ocean Sciences Meeting. February 25, 2026. Glasgow, Scotland.

Jansen, L., K. Collier, G. Rossi, T. Grantham, K. Taniguchi-Quan. Framework for Modeling Flow-Water Quality Relationships to Identify At-Risk Streams in the North Coast Region. 43rd Annual Salmonid Restoration Conference. April 30, 2026. Redding, CA.

Xin, D., S. Dial-Sauers, D. Nguyen, E. Fassman-Beck. Field monitoring of Microplastics in Urban Runoff: Treatment Efficiency of Biofilters. Southern California Society of Environment Toxicology and Chemistry Annual Meeting. April 27-28, 2026. San Pedro, CA.

Other Presentations

Mehinto, A. Los Angeles Post-Fire Monitoring Network. CASQA Monitoring and Science Subcommittee Meeting. February 9, 2026. Via webinar

Mehinto, A. Introductions to Southern California Regional Marine and Stream Monitoring Programs. California Water Quality Monitoring Council Meeting. February 26, 2026. Via webinar

Mehinto, A. Standardization of New Approach Methodologies for Water Quality Monitoring. Government eDNA Working Group (GEDWG) Workshop. March 24, 2026. Via webinar.

Schiff, K. Research Overview at SCCWRP. Newport Bay Watershed Executive

Committee. March 18, 2026. Newport Beach, CA.

Schiff, K. Highlighting relationships between SCCWRP and the California State University system. CSU-WATER Conference. April 24, 2026. San Diego, CA.

Smith, J.S. Harmful Algal Blooms in Southern California: Studying Blooms in a Changing Ocean. Beneath the Surface Lecture Series. March 26, 2026. Via webinar.

Smith, J.S. Satellite Remote Sensing to Assess Harmful Algal Blooms in Inland and Coastal Waters. California Stormwater Quality Association Monitoring and Science Subcommittee. April 13, 2026. Via webinar.

Smith, J.S. Harmful algal bloom toxins in shellfish at the Land-Sea Interface in the Los Angeles Region. California Cyanobacteria Harmful Algal Bloom Network Quarterly Meeting, April 8, 2026. Via webinar.

Steele, J.A. Exfiltration in Southern California. Los Angeles County Public Works. April 21, 2026. Via webinar.

Theroux, S. Advancing environmental DNA for management. U.S. Environmental Protection Agency Bioassessment and Biological Criteria Webinar Series. March 12, 2026. Via webinar.

Thornton Hampton, L.M. Regional Monitoring of Microplastics in Shellfish. Ocean Protection Council Aquaculture and Microplastics Workshop. April 8, 2026. Via webinar.

Walker, J.B. Monitoring for management: An ecosystem function-based approach to estuarine assessment. Estuarine and Ocean Science Center. San Francisco State University Seminar Series. April 1, 2026. Tiburon, CA.

Walker, J.B. Southern California Wetland Recovery Project Regional Monitoring Program: Sentinel Site Network. California Department of Fish and Wildlife Sentinel Sites for Nature Roundtable. April 2, 2026. Via webinar.

Wong, C.S. Interlaboratory chemical analysis to support monitoring. Delta Regional Monitoring Program Steering Committee Meeting. February 23, 2026. Via webinar.

SCCWRP Personnel Notes

Commission



Jolene Guerrero, Deputy Director of Water Resources at the Los Angeles County Flood Control District, was named a SCCWRP Commissioner in February, replacing Adam Ariki, who

retired after serving on the Commission for two years.



Traci Minamide, the newly appointed Interim Director and General Manager for the City of Los Angeles Bureau of Sanitation, was named a SCCWRP Commissioner in February,

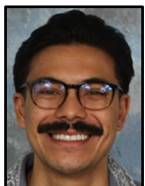
replacing Barbara Romero, who served on the Commission for four years.



Hannah Dewey, Assistant Deputy Director of Stormwater Quality for the Los Angeles County Flood Control District, was named an Alternate Commissioner in February, filling a

vacancy.

Promotion



Thomas Rocca, who has worked at SCCWRP as a Laboratory Assistant in the Toxicology Department since 2022, was promoted in April to a full-time Research Technician in the

Biogeochemistry Department. He received his M.S. in biology from California State University, Long Beach.

Scientific Leadership

Dr. **Raphael Mazor** has been appointed to the organizing committee for the 2026 Annual Meeting of the Society for Freshwater Science.

Dr. **Alvina Mehinto** has been appointed as a technical advisor for the project "RAPID: Streamflow and water quality response to 2025 Los Angeles wildfire across fire-flood sequences," led by Dr. Adnan Rajib at University of Texas, Arlington.

Dr. **Joshua Steele** has been appointed an editor for the American Society for Microbiology journal *Microbiology Spectrum*.

Dr. **Eric Stein** has been appointed to the master's thesis committee of Matt Harl at California State University, Long Beach.

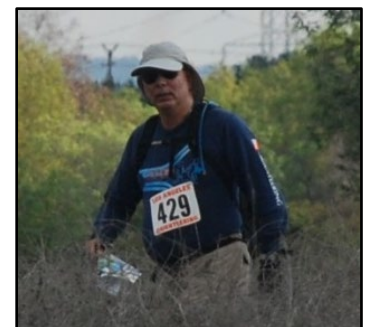
In memoriam



Dr. **Ananda Ranasinghe**, a former SCCWRP benthic ecologist whose accomplishments include co-developing the Benthic Response Index (BRI) tool for scoring coastal sediment quality, passed away February 12, 2026. His work focused on the development and application of benthic assessment frameworks – including the BRI – that explain the linkages between benthic community structure and anthropogenic stress. He also helped advance science-based approaches for sediment management, habitat protection, and climate adaptation strategies. Ranasinghe worked at SCCWRP for 14 years, from 1999 until his retirement in 2013.



Dr. Ananda Ranasinghe poses with SCCWRP colleague Darrin Greenstein at the Society of Environmental Toxicology and Chemistry (SETAC) Annual Meeting in 2004.



Dr. Ananda Ranasinghe participates in an orienteering event in Los Angeles in 2009.

SCCWRP COMMISSIONER SPOTLIGHT

Engineer expands focus to stormwater management

During her six-year career at the Ventura County Watershed Protection District, Hayley Luna has risen through the Water Resources division into a leadership position to help shape the County's long-term strategy for stormwater management.



Hayley Luna, P.E.

Luna first joined the Ventura County Watershed Protection District in 2019 as a Water Quality Engineer working primarily on stormwater capital improvement projects and stormwater permit compliance, with a focus on planning and land development and construction.

Now, as the Deputy Director of Water Resources, Luna has expanded her focus to protecting water resources for the more than 835,000 people living in Ventura County.

"It's important that we make investments now to protect our water resources for the future," Luna said. "We're building something that is meaningful that gives back to our communities."

Luna became a SCCWRP Alternate Commissioner in August 2025, filling a vacancy after Arne Anselm retired.

In her role, Luna oversees two stormwater compliance programs, as well as the County's groundwater program and coordinates the District's State Water Project activities. She also acts as Chair for the Ventura Countywide Stormwater Quality Management Program.



Hayley Luna and husband Zabdiel take their daughters Corinne, left, and Penelope to Disney World during a vacation to Orlando, Florida in December 2025.

Hayley Luna, P.E.

Job: Deputy Director, Water Resources, Ventura County Watershed Protection District (since July 2025)

SCCWRP role: Alternate Commissioner (started August 2025)

Prior jobs: 6 years with Ventura County Watershed Protection District: County Stormwater Program Manager (2023-2025); Water Quality Engineer (2019-2023); Senior Staff Engineer, Geosyntec Consultants (2018-2019); Staff Engineer, Geosyntec Consultants (2015-2018); Quality Control Technician, Crimson Renewable Energy (2012-2013)

Education: B.S. environmental engineering, California Polytechnic State University, San Luis Obispo (2015)

Residence: Oxnard

Hometown: Bakersfield

Family: Husband Zabdiel, a computer engineer; daughters Penelope, 4, and Corinne, 1 1/2

Hobbies: Baking; reading; painting

Luna's interest in the environment stems from her personal experiences with poor air quality living in Bakersfield. Growing up, she often had days where the air quality exacerbated her allergies or prevented her from going outside during school.

Being aware of the environmental and health impacts of air pollution motivated Luna to pursue a career where she can improve the environment for the better.

Luna received her B.S. in environmental engineering from Cal Poly San Luis Obispo in 2015. During her undergrad, Luna dipped her toes in the energy sector with internships, gaining experience working at a biodiesel production plant and in corporate environmental, health, and safety.

After graduating, Luna worked in water resources consulting for four years before finding her way to the Ventura County Watershed Protection District

"In consulting, you have fewer opportunities for long-term projects and programs," Luna said. "That's why I find municipal work so rewarding, because I can see the work I do evolve and grow over time and how people are benefiting from it."

In her spare time, Luna enjoys baking pastries and has started teaching her oldest daughter Penelope how to bake. Luna enjoys reading and painting, and before having kids, rode horses and competed in show jumping.

CTAG SPOTLIGHT

Scientist pivots from agriculture to water quality

When Favian Tong began studying at California State University, Long Beach, he already knew he wanted to build a career around his lifelong passion for the environment.



Favian Tong

Tong studied marine biology with the goal of doing work that would let him protect aquatic ecosystems and the organisms that live in them.

After taking an environmental law class, Tong discovered an interest in the regulatory side of aquatic sciences. In order to add a second major in environmental science and policy, he decided to take an extra semester of classes.

“Being able to understand science from both the research and management perspective helps give me a full picture of environmental science,” Tong said. “That really drove me to find a job that would let me do just that.”

Tong joined the Santa Ana Regional Water Quality Control Board as an Environmental Scientist in 2024. He became his agency’s Alternate CTAG Representative in March 2025.

In his current role, Tong primarily works on reducing bacteria levels in the Middle Santa Ana River and Newport Bay, both of which have TMDLs (total maximum daily loads) for fecal bacteria.

Favian Tong

Job: Environmental Scientist, Santa Ana Regional Water Quality Control Board (since 2024)

SCCWRP role: Alternate CTAG Representative (started March 2025)

Prior jobs: Five years at the California Department of Food and Agriculture: Environmental Scientist (2021-2024); Pest Prevention Assistant (2020-2021); Agricultural Technician (2019-2020)

Education: B.S. marine biology and environmental science and policy, California State University, Long Beach (2019)

Residence: Orange

Hometown: Garden Grove

Family: Wife Catherine, a microbiologist; dogs Mochi, 12, Kobi, 11, and Nami, 10

Before joining the Santa Ana Regional Water Quality Control Board, Tong spent five years working at the California Department of Food and Agriculture, where he surveyed and monitored citrus trees for pest and diseases.

When a position opened up, Tong saw the opportunity he had been waiting for – a chance to work directly at the intersection of environmental science and management.

“I learned a lot during my time there, but agriculture was never going to be a final destination for me,” Tong said. “I knew I wanted to eventually find my way back to working with water.”

As a child, Tong often visited aquariums and became fascinated with fish. Eventually, he began keeping fish as a hobby, inspiring him to study marine biology in college.

Tong became familiar with SCCWRP when he first joined the Santa Ana Regional Water Quality Control Board when his colleagues encouraged him to attend CTAG meetings to learn more about the organization’s work.

“I’ve enjoyed being a part of CTAG and hearing all of these different perspectives,” Tong said. “The questions and discussions that happen really helps me understand the work we do in a broader context.”

In his free time, Tong enjoys traveling around the world with his wife Catherine. He also spends time outdoors doing activities like camping and fishing.



Favian Tong poses with the famous Tram 28 during a trip to Lisbon, Portugal in 2025.

SCCWRP PARTNER SPOTLIGHT

Ecologist bridges policy, coastal restoration work

As a marine ecologist specializing in restoration of coastal habitats, Dr. Kathryn Beheshti works at the intersection of science, policy and coastal resource management.



Dr. Kathryn Beheshti

At the Marine Science Institute at UC Santa Barbara, Beheshti serves as a principal investigator for the San Onofre Nuclear Generating Station (SONGS) Mitigation Monitoring Program, where she oversees long-term monitoring and restoration efforts for the San Dieguito Wetland and Wheeler North Reef, an artificial kelp reef off the coast of San Clemente.

Through her work, Beheshti collaborates closely with both the management and conservation communities to ensure that science translates into meaningful action.

"A lot of the work we do directly informs management for those two specific projects and large scale coastal restoration and creation projects in the state," Beheshti said. "It feels really great to know that our work is helping make a difference and impact on how our coastal resources are monitored and managed."

Beheshti's research focuses on the loss and recovery of coastal habitats, including salt marshes, seagrass, and kelp forests. She has closely worked with SCCWRP on eelgrass and coastal estuary monitoring through the Southern California Bight Regional Monitoring Program and as a Science Advisory Team member for SCCWRP-facilitated initiatives, including the Southern California Wetlands Recovery Project's estuary monitoring.



Dr. Kathryn Beheshti and her husband Paul spend the day with their daughters Birdie, left, and Mabel at the Agua Hedionda Lagoon Discovery Campus in Carlsbad.

Kathryn Beheshti, Ph.D.

Job: Assistant Researcher, Marine Science Institute, University of California, Santa Barbara (since 2022)

SCCWRP role: Research partner on eelgrass monitoring and coastal estuaries

Prior jobs: California Sea Grant State Fellow, California Ocean Protection Council (2021); Environmental Consultant, Endemic Environmental Services, Inc. (2020-2021); Instructor, University of California, Santa Cruz (2020)

Education: Ph.D. ecology and evolutionary biology, University of California, Santa Cruz (2021); B.S. earth and environmental science, University of California, Irvine (2012)

Residence: Carlsbad

Hometown: Santa Cruz

Family: Husband Paul, a business owner; daughters Birdie, 2 1/2, and Mabel, 4 months

Hobbies: Playing with her daughters; exercising; running; going on walks; playing volleyball

Beheshti received her Ph.D. in ecology and evolutionary biology from the University of California, Santa Cruz and B.S. in earth and environmental science from the University of California, Irvine.

As an undergraduate, Beheshti initially started out on a pre-med track, but found that the competitive environment wasn't for her. She then shifted her focus to earth and environmental science and fell in love with coastal restoration after volunteering at UC Irvine's San Joaquin Marsh Reserve.

"I've always been a bit of a hippie at heart, so once I knew I wanted to be in the coastal ecology realm, I never looked back," Beheshti said. "My personality and values are much more aligned with a career in coastal ecology and management."

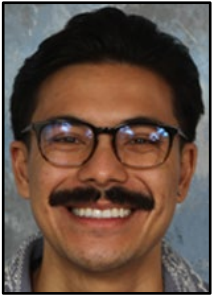
After completing her Ph.D., Beheshti was introduced to the world of environmental policy as a California Sea Grant State Fellow for the California Ocean Protection Council, where she helped develop resources for initiatives related to sea-level rise, coastal restoration, biodiversity, harmful algal blooms, ocean acidification, and hypoxia.

In her free time, Beheshti enjoys biking, running, and playing with her daughters. She also loves exploring the coastal lagoons near her Carlsbad home with her family.

SCCWRP STAFF SPOTLIGHT

Researcher's career stems from fishkeeping hobby

For Thomas Rocca, his journey from being in an undergraduate pre-med track to starting a career in environmental science began with a fish.



Thomas Rocca

During his second year at UC Irvine, Rocca bought a zebrafish and also began decorating his first aquarium with carefully arranged plants. What started as a simple hobby quickly grew into a small collection of three fully designed tanks with both fish and plants.

As his passion for fishkeeping and aquascaping grew, so did his interest in aquatic sciences.

"Since then, I knew medicine wasn't the type of science I wanted to be in," Rocca said.

"Things like maintaining water quality and keeping my tanks healthy made me realize how much I enjoy working with aquatic organisms."

Rocca was hired by SCCWRP in 2024 as a Laboratory Assistant in the Toxicology Department, where he supported studies investigating microplastics toxicity and surveying fish consumption at urban lakes in the Los Angeles region.

He was also involved in the monitoring effort to track how pollution and debris from the Palisades and Eaton fires spread through coastal ecosystems.



Thomas Rocca hikes Angels Landing at Utah's Zion National Park in 2024.

Thomas Rocca

Job: Research Technician, SCCWRP Biogeochemistry Department (started April 2026)

Prior jobs: Laboratory Assistant, SCCWRP Toxicology Department (2024-2026); Sea Grant Trainee, California State University, Long Beach (2022-2024); Laboratory Technician, MBC Aquatic Sciences (2021-2022); Life Support Systems Technician, Aquarium of the Pacific (2020-2021); Intern, Orange County Water District (2019-2020)

Education: M.S. biology, California State University, Long Beach (2025); B.S. biological sciences, University of California, Irvine (2020)

Residence: Long Beach

Hometown: Hawthorne

Family: Cats Muad'Dib and Oliver

Hobbies: Fishkeeping; reading science-fiction books; baking; playing video games; working out; exploring fashion

Rocca was promoted to a full-time Research Technician in April 2026 and joined the Biogeochemistry Department, where he is working on studies examining harmful algal blooms and ocean acidification and hypoxia.

"I really like being able to be a part of a variety of projects," Rocca said. "Working with everyone here at SCCWRP has pushed me to become a better scientist as well."

Rocca received his M.S. in biology from California State University, Long Beach and B.S. in biological science from the University of California, Irvine.

During his master's program, his adviser connected him with SCCWRP to work on a toxicity study examining microplastic fibers in fish. He then worked at SCCWRP as a visiting scholar during the study, which ultimately became part of his master's thesis.

Prior to SCCWRP, Rocca interned at the Orange County Water District, where he analyzed drinking water in their water quality laboratory. He also served as a life support systems technician at the Aquarium of the Pacific and worked in the toxicology laboratory at MBC Aquatic Sciences.

Rocca is still an avid fishkeeper and aquascaper, though he has since downsized his collection to just a single freshwater aquarium. In his free time, he enjoys baking pastries, working out, and reading science-fiction, especially the *Dune* series.

SCCWRP SCENES

Working right outside neighbors' front doors

Much of SCCWRP's research takes place in laboratories and at field sites removed from where people live and work. But in the case of a study that is measuring the efficiency of routine street sweeping in removing contaminants that would otherwise enter storm drains and contribute to runoff pollution, sometimes this work takes place in the middle of residential neighborhoods.

For the ongoing SCCWRP street sweeping study, researchers are using a custom-built rainfall generator to simulate repeatable, controlled wet-weather conditions across swept and upswept street segments at 10 sites across Southern California, including in some residential neighborhoods. The sites are being swept with either mechanical broom sweepers or regenerative air sweepers, which also will enable researchers to compare the performance of two different street-sweeping technologies.

Street sweeping is a widely implemented non-structural best management practice (BMP) in stormwater programs. What has historically been unclear, however, is what portion of stormwater pollutants – sediment, nutrients, trace heavy metals, microplastics and bacteria – are removed from roadways during street sweeping.



Clockwise from above, a SCCWRP field crew sets up a custom-built rainfall generator in a residential neighborhood in Dana Point to measure the efficiency of routine street sweeping in removing contaminants that would otherwise enter storm drains and contribute to runoff pollution; a field crew collects runoff generated by the rainfall generator in a San Diego residential neighborhood; and a regenerative air sweeper begins operation on a residential street in Dana Point.