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SCCWRP Director's Report



FALL 2025 ISSUE

Biofiltration BMPs found to remove microplastic particles

A two-year study examining whether biofiltration BMPs (best management practices) can efficiently remove microplastics from Southern California runoff has found that these stormwater control measures are effective as a treatment solution – an important finding given that runoff is a major contributor to microplastics pollution in aquatic environments.

The regional [SCCWRP-led study](#), completed in October, provides encouraging news for water-quality managers across California and beyond that are seeking solutions to better control and manage the ubiquitous and growing problem of microplastics pollution. Researchers estimate that [trillions of microplastic particles](#) are discharged annually into California coastal waters via runoff, with much of it coming from vehicle tire-wear particles.

During the BMP microplastics study, researchers measured the levels of microplastics entering and exiting seven biofiltration BMPs during 18 rain events.

The study found that biofiltration BMPs successfully reduced microplastics concentrations by a median of 72% across all storm events. Moreover, the study found that the engineered media in biofiltration systems is uniformly efficient at microplastics removal, regardless of the measured size of microplastics and regardless of the type of media installed found in the existing BMPs.

The study also found that microplastic particles appear to be primarily removed upon becoming trapped within the pore spaces between engineered media particles. Thus, media pore size could be a useful design consideration for optimizing BMP performance in the future.

Biofiltration systems are a ubiquitous type of stormwater BMP that is designed to filter and trap sediment, nutrients, metals and other common contaminants as runoff passes through them. In recent years, as microplastics have emerged as a priority contaminant to manage in California's aquatic ecosystems, researchers have begun exploring whether biofiltration

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Cover photo: SCCWRP's Jerod Gray, left, and Liesl Tiefenthaler collect media samples from a biofiltration BMP in Orange County for microplastics analysis. Researchers have found that biofiltration BMPs offer an efficient solution for removing microplastics from runoff in Southern California.

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Calendar

Thursday, November 6
CTAG quarterly meeting
(In-person meeting)

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

systems also are effective at removing microplastics.

The BMP microplastics study was the first regional-scale microplastics investigation focused on biofiltration BMPs. To conduct the study, researchers leveraged the Southern California Stormwater Monitoring Coalition (SMC) [Regional BMP Monitoring Network](#), which was recently established to study the effectiveness of structural BMPs in improving runoff water quality and quantity across Southern California.

The microplastics findings are the first of the BMP monitoring network's data analyses to be completed; BMP performance evaluation findings for other stormwater contaminants are expected to be released in early 2026.

The BMP microplastics study represents a bright spot in California's ongoing efforts to identify effective solutions for removing microplastics from aquatic environments. In 2022, California released a comprehensive [microplastics management strategy](#) that calls for an initial set of management actions to curb the spread of microplastics, plus focused research to identify future potential microplastics management solutions.

In response, SCCWRP and its partners have been investigating stormwater BMPs for their potential to remove microplastics from runoff. In addition to the biofiltration study, SCCWRP is working with the SMC on an ongoing study that will [quantify the](#)



Photo courtesy of Adrian Montoya, Riverside County Flood Control and Watershed Protection District

Researchers have completed a two-year study examining whether biofiltration BMPs – including the one, above, under construction in Riverside County – can effectively remove microplastics from Southern California runoff. The study found that biofiltration BMPs offer an efficient treatment solution, with microplastic particles removed upon becoming trapped within the pore spaces between engineered media particles.

[effectiveness of street sweeping](#) – a type of non-structural BMP – in removing multiple types of stormwater contaminants, including microplastics.

Meanwhile, researchers hypothesize that other types of filtration-based BMPs, such as permeable pavement, may have

microplastics removal capacity similar to biofiltration BMPs.

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

Technical foundation built for standardized, ongoing California coastal habitat mapping

A group of scientific experts co-facilitated by SCCWRP has developed the technical foundation for standardizing how coastal habitats get mapped across California – a key milestone in California's ongoing efforts to build statewide capacity to routinely generate high-quality maps that can support assessments of the health of coastal habitats.

The six month-long project, described in a [technical report](#) published in September,

relied on four sets of expert advisory panels to develop best-practices recommendations for how to overcome the fragmented, time-consuming, inconsistent process by which coastal managers create detailed habitat maps of California's rocky intertidal areas, coastal wetlands/estuaries, eelgrass beds, and beaches and dunes.

Traditionally, habitat mapping has been done for individual habitats on an as-

needed basis in a specific area. As a result, it is not uncommon for habitat assessment programs and projects to divert up to 10% of their budget to support development of maps that delineate the boundaries of the habitat area being monitored.

By contrast, the coordinated mapping program that is envisioned by the expert panelists would ensure managers statewide have access to continuously

updated habitat maps produced using consistent, best-practices methods. The improved habitat maps – which mapping experts estimate might cost California about \$500,000-\$700,000 annually to maintain – would enable more robust, comprehensive ecological health assessments.

The development of the statewide mapping guidance began in fall 2024, when SCCWRP and the San Francisco Estuary Institute convened four expert advisory panels to discuss priority objectives, potential cost-effective approaches, and other key technical needs associated with implementing rigorous, periodic mapping for California's coastal habitats.

Each panel focused on one of four coastal habitats – rocky intertidal areas, coastal wetlands/estuaries, eelgrass beds, and beaches and dunes – that collectively make up all of the major habitat types spanning the California coast. Indeed, every coastal area of California can be either classified into one of the major habitat types, or a blend of one or more of these habitat types.

If California moves forward with the experts' statewide habitat mapping recommendations, the maps could be immediately adopted and used to support diverse coastal monitoring and management programs, including to monitor the long-term resiliency of coastal habitats to sea level rise and climate change, track progress toward California's goal to [conserve 30% of California's land and coastal waters by 2030](#), and support how managers respond to emergencies such as coastal flooding and extreme high tides.



Photo courtesy of Central Coast Wetlands Group, Moss Landing Marine Labs

Researchers have developed the technical foundation for standardizing how four types of coastal habitats get mapped across California, including for sites like Morro Bay Estuary, above. This work supports California's efforts to develop a standardized, statewide program for routinely generating high-quality maps that can support assessments of the health of coastal habitats statewide.

In Southern California, the Southern California Bight Regional Monitoring Program could use the maps to conduct more comprehensive regional assessments of the health of coastal habitats like ecologically fragile eelgrass beds. For example, because California presently lacks comprehensive eelgrass habitat maps, Bight '23's ongoing Submerged Aquatic Vegetation study element was limited to assessing the health of only the eelgrass beds in the region that have already been mapped; moreover, the Bight '23 eelgrass assessment won't be placed into a statewide or regional context, given the lack of comprehensive eelgrass maps.

The panelists' recommendations cover how to define habitat boundaries,

topography and relationships to adjacent habitats, as well as how to collect and analyze data, and produce annual updates to maps in a routine and cost-effective manner. The recommendations could guide California agencies in developing detailed standard operating procedures (SOPs) and training programs. The mapping guidance also could be used as a jumping-off point for pursuing standardized, ongoing mapping of inland aquatic habitats.

For more information, contact Dr. [Eric Stein](#).

Turf replacement study quantifying water-quality benefits of drip-irrigated landscapes

SCCWRP and the County of San Diego have begun working to measure how much irrigation water and rainfall soaks into the ground vs. becomes runoff in residential areas – a foundational study that could transform Southern California's understanding of the runoff water quality

benefits associated with replacing traditional spray-irrigated turf with drip-irrigated, drought-tolerant landscaping.

The two-year study, which moved into the field data collection phase in September following pilot testing, will quantify the

ratio of water that soaks into the ground vs. runs off the land – known as the runoff coefficient – across the three main types of land covers commonly found in residential areas: turf lawns, drip-irrigated landscapes, and impermeable surfaces (e.g., concrete driveways). Turf

replacement projects are considered a type of non-structural stormwater BMP (best management practice) because they can reduce the volumes of irrigation and wet-weather runoff entering storm drains by making changes to the landscape without an engineered, constructed system.

Although Southern California has historically focused on improving runoff water quality during wet weather, dry-weather flows generated by turf irrigation are the dominant source of residential runoff flows for the vast majority of the year across semi-arid Southern California.

Stormwater managers, however, lack foundational data sets to accurately and comprehensively model how much runoff is generated in these areas during either wet or dry weather, as well as how these runoff volumes change depending on the type of land cover.

Historically, managers have relied on decades-old runoff coefficients published in reference textbooks and practitioner manuals to estimate runoff volumes from turf lawns and impermeable surfaces. Meanwhile, there are no published values at all for drip-irrigated landscaping, which is a relatively new type of land cover.

The SCCWRP-led study will generate a comprehensive set of runoff coefficients for both wet and dry weather across all three main residential land covers; the work will be conducted in three privately managed, inland San Diego County residential communities.

The goal is to build a scientific foundation for stormwater managers across Southern California to robustly quantify the water quality benefits of replacing turf lawns with drip-irrigated landscapes. Quantifying this benefit will enable managers to make informed decisions about how much to invest in this type of non-structural BMP going forward – including in local rebate

programs that financially compensate homeowners and business owners who voluntarily replace their turf lawns with drip-irrigated, drought-tolerant landscaping.

The study is motivated by a [previous SCCWRP-led study](#) that found that turf replacement projects can successfully eliminate all irrigation runoff during dry weather, as well as all rainfall runoff during 85% of all storms.

Turf lawns can generate high irrigation runoff volumes that, in turn, can transport contaminants into storm drains and downstream aquatic ecosystems. Stormwater discharge permits commonly require stormwater managers to eliminate dry-weather runoff from these areas. Additionally, California will [stop allowing homeowners associations](#) and commercial

properties to irrigate “non-functional” turf grass with potable water beginning in 2029.

Already, the original study’s findings have helped convince the County of San Diego to expand its turf-replacement rebate program to encompass 13 residential and commercial properties and counting. Meanwhile, the County of Orange has begun laying the groundwork to replicate the study in southern Orange County.

Enabling this study will be a [rainfall generator custom-built by SCCWRP](#) that simulates relevant, controlled rainfall patterns, while eliminating much of the variability that surrounds real-world rainfall and runoff events.

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



A field crew uses a custom-built rainfall generator to create controlled runoff conditions on a residential concrete driveway – part of a pilot study supporting an ongoing project that is measuring how much irrigation water and rainfall soaks into the ground vs. becomes runoff in residential areas. The goal is to quantify the runoff water-quality benefits of a non-structural BMP called turf replacement, which are landscaped areas where drought-tolerant plants are irrigated by drippers.

Updates by Thematic Area

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

BIOASSESSMENT

Automated eDNA sampler deployed in reservoir to look for invasive golden mussel

SCCWRP and its partners have successfully deployed a prototype device that can automatically collect environmental DNA (eDNA) at a reservoir in San Bernardino County to look for signs of the presence of an invasive mussel species – part of a pilot project exploring more rapid ways to collect eDNA.

The deployment, which took place over a two-week period in August at Citrus Reservoir in Redlands, used an automated eDNA sampler developed by the Monterey Bay Aquarium Research Institute (MBARI) to detect golden mussel. The highly invasive freshwater species has been found in more than a dozen water bodies across California since first being discovered in the San Francisco Bay Delta in 2024; it can disrupt water delivery systems by clogging pipes and pumps in reservoirs.

eDNA, which is the DNA that organisms shed into their environment, offers a promising alternative to traditional field collection and identification of species. Researchers hope that real-time eDNA data from automated samplers could be used to enable routine, early detection of a range of invasive, threatened and difficult-to-observe species.

The Citrus Reservoir eDNA samples will be analyzed in the coming months to look for evidence of golden mussel, as well as fish species of interest.

State, Regional Board staff trained on how to use stream bioassessment data

Staff from the State Water Resources Control Board and Regional Water Quality Control Boards learned how to use



Nathan Mack from the California Department of Fish and Wildlife, pictured standing at the edge of the water facing the camera, demonstrates stream sampling methods at Dry Creek during a “Bioassessment 101” training workshop in September 2025. The workshop, which was co-developed by SCCWRP, is intended to help staff from the State Water Board and Regional Boards understand how to use bioassessment data sets to inform their decision-making.

bioassessment tools and methods to help manage stream health during a one-day workshop in September co-developed by SCCWRP – the fourth in an ongoing series of periodic training opportunities targeted at those who review stream bioassessment data.

The “Bioassessment 101” workshop, which was held in Sacramento and attracted about 25 individuals, was intended to help familiarize newer staff with bioassessment methods. End-user interest in bioassessment is increasingly integrated into decision-making about how to protect and restore the health of Wadeable streams statewide.

The workshop was aimed at audiences who review stream bioassessment data and thus could benefit from the insights provided by the data, as opposed to those who generate the data. It was co-presented by the California Department of Fish and Wildlife and the San Diego Regional Water Quality Control Board.

Future Bioassessment 101 workshops are expected to be held on an annual basis.

Separate training workshops designed specifically for bioassessment practitioners also have been held, and future ones are being planned. To request to participate in future bioassessment trainings, contact Dr. [Raphael Mazon](#).

Workgroup reconvened to develop biological indicators for assessing California rocky intertidal health

SCCWRP has helped reconvene a statewide expert workgroup on rocky intertidal areas to reach agreement on how to assess the condition of this coastal habitat in California using biological indicators – a key step in an ongoing effort to develop a management-friendly report card for this habitat’s health.

The Multi-Agency Rocky Intertidal Network (MARINE), led by the University of California, Santa Cruz, met from August to September to reach consensus on a set of biological indicators for tracking how organisms in rocky intertidal areas respond to climate- and health-related

stressors, including changing ocean temperature and diseases.

MARine provided expert local knowledge and familiarity of the 70+ rocky intertidal outcroppings along the California coast.

The agreed-upon indicators will be used to develop the rocky intertidal portion of an ocean health report card, set to be published in late 2025 to provide coastal managers with comprehensive annual snapshots about the condition of multiple facets of ocean health.

ECOHYDROLOGY

Invasive plant species removal program being developed to improve flows in Santa Clara River

SCCWRP has begun working with Santa Clara River watershed managers to develop a pilot management program for removing an invasive plant species that uses up to six times as much water as native vegetation – an effort that could offer a nature-based solution for restoring more natural flow patterns to the urbanized watershed.

The SCCWRP-facilitated group, convened in August, is designing a program for removing the invasive *Arundo donax* (giant reed), then implementing ongoing monitoring and deciding how to mobilize rapidly to combat its regrowth.

This management solution stands in contrast to traditional engineered approaches for achieving environmental flow objectives, such as managing storage volumes, diversion rates and discharge patterns – all modifications that can have unintended environmental and societal consequences. Nature-based solutions, which are designed to closely mimic natural processes, tend to have less harmful environmental effects while providing co-benefits for both humans and wildlife.

An initial draft of the management plan is expected in late 2026.

In a related effort, SCCWRP and its partners also are exploring how to [use nature-based solutions](#) to optimally mitigate increased Southern California

water temperatures at stream sites where treated wastewater effluent is being discharged, including in the Santa Clara River watershed.

EMERGING CONTAMINANTS

Passive samplers used to measure DDT at offshore dump sites

SCCWRP and the Scripps Institution of Oceanography have successfully used passive sampling technology to measure the concentrations of the pesticide DDT and other legacy contaminants that are diffusing out of seafloor sediment into the water column at a former industrial waste dump site in the San Pedro Basin.

The analysis, completed in September, has provided researchers with the data they need to develop models that will estimate how much of this chemical contamination that became attached to sediment decades ago is re-entering the water column over time, and the exposure risks it poses for aquatic life.

The deployment of passive samplers at the dump site was the first such attempt to deploy passive samplers at this site following its discovery in 2021. The 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. Researchers may return to the site – located between the mainland and Catalina Island – to deploy additional passive samplers.

Post-fire aquatic monitoring network reaches consensus on thresholds for evaluating chemical exposure risks for aquatic life

A water-quality monitoring network that is tracking pollution from the Palisades and Eaton fires has reached consensus on which thresholds to use for evaluating how exposure to post-fire chemical contamination affects aquatic life – a key milestone in ongoing efforts to bring consistency to how individual monitoring partners use the network's data to evaluate exposure risks.



Photo courtesy of Riparian Invasion Research Laboratory, UC Santa Barbara

A field crew removes stalks of *Arundo donax* (giant reed) from along the Santa Clara River. Researchers are developing a pilot management program for removing the invasive plant species – which uses up to six times as much water as native vegetation – as a management solution that could help restore more natural flow patterns to the urbanized watershed.

The thresholds, which monitoring partners reached consensus on in September via a series of SCCWRP-facilitated deliberations, define the concentrations at which exposure to post-fire chemicals in different habitat types and different time periods begins to pose health risks for aquatic life. Because aquatic toxicity thresholds can vary based on multiple factors, federal, state and regional agencies were using different threshold values for the same chemical contaminant, leading to inconsistencies in how health risks were interpreted.

The aquatic health thresholds complement a set of thresholds for evaluating [human health risks](#) that monitoring partners reached consensus on in June.

Monitoring partners have begun uploading water-quality data into an [open data portal](#) being built by SCCWRP to support the [Los Angeles-area Post-Fire Water Quality Monitoring Network](#) in collecting, analyzing and visualizing data.

STORMWATER BMPs

Maintenance condition of BMPs assessed across L.A. region to improve O&M

SCCWRP has completed a visual assessment of the condition of 52 biofiltration systems and other stormwater BMPs (best management practices) across the Los Angeles region using a standardized, rapid method – an effort that will help inform the design of BMPs that are more feasible to maintain.

The summer-long assessment work, completed in August, inspected publicly accessible BMPs for visible operations and maintenance (O&M) issues, such as erosion, clogging, trash and waste accumulation, and overgrown vegetation.

Nearly all of the surveyed BMPs were found to be in need of some level of O&M service – a finding that highlights the need for improved understanding of the types



Photo courtesy of Los Angeles County Fire Department Lifeguard Division

A field crew from Heal the Bay collects samples from Santa Monica Bay, part of an ongoing, multi-agency water-quality monitoring initiative facilitated by SCCWRP that is tracking pollution and debris from the Palisades and Eaton fires. Monitoring partners have reached consensus on which thresholds to use for evaluating how exposure to post-fire chemical contamination affects aquatic life.

and frequency of O&M service needed to maintain BMPs.

The study's findings will be discussed during a January 12-13, 2026 workshop co-hosted by SCCWRP and the Los Angeles County Department of Public Works that will work to identify specific BMP design characteristics that would enable managers to implement more effective O&M practices. The workshop is invite-only, but the findings will be published.

Study launched to quantify street sweeping's effectiveness

SCCWRP and the Southern California Stormwater Monitoring Coalition (SMC) have kicked off a two-year study that will measure the effectiveness of routine street sweeping in removing contaminants that would otherwise enter storm drains and contribute to runoff pollution.

The study, which kicked off in September, follows the completion of a [pilot study](#) in early 2025 that developed a robust, repeatable method for quantifying the role that street sweeping plays in reducing runoff pollution.

Street sweeping is a type of non-structural BMP (best management practice) that is a routine part of stormwater management programs in communities across Southern California, but what has historically been unclear is what portion of stormwater pollutants – sediment, nutrients, trace heavy metals, microplastics and bacteria – are removed from roadways through street sweeping.

An SMC workgroup is in the process of selecting sites for the study; field work could begin as early as spring 2026.

New SCCWRP Publications

Journal Articles

Choi, J., [D. Xin](#), P.C. Chiu. 2025. [A New Climate Impact of Wildfire Chars: Suppression of Biogenic Methane Production Over Repeated Redox Cycles](#). *Environmental Science & Technology* 59:16443-16451.

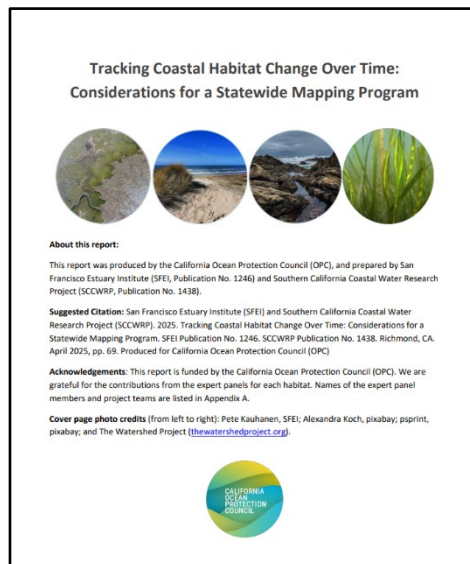
[Jansen, L.](#), N. Tromas, A. Strecker, J. Shapiro. 2025. [Shifts in bacterioplankton during cyanobacterial blooms reflect bloom toxicity and lake trophic state](#). *Harmful Algae* 149:102937.

Larsen, S., L. Comte, X. Giam, K. Irving, P.A. Tedesco, J.D. Olden. 2025. [Community composition as an overlooked driver of spatial population synchrony](#). *PNAS* Nexus DOI:10.1093/pnasnexus/pgaf272.

[McGruer, V.](#), M. Gustavus, K.Z. Hess, H. Vaquero, K. Moody Wood, E. Israfil, J. Gonzalez-Estrella, V.M. Fulfer, S. Moore, W. Cowger. 2025. [Lost on the Pacific Crest Trail: a 4,270 km survey of wilderness waste distribution and characteristics](#). *Waste Management* 206:115063.

Nissen, K., M. Borst, [E. Fassman-Beck](#). 2025. [Influence of Volumetric Water Content Sensor Configuration in Evaluating Bioretention Planter Retention and Evapotranspiration](#). *Journal of Hydrologic Engineering* DOI:10.1061/JHYEFF.HEENG-613.

[Thornton Hampton, L.M.](#), D.B. Wyler, B.C. Almroth, S. Coffin, W. Cowger, D. Doyle, E.D. Hataley, S.J. Hutton, M.M. Mair, E.L. Miller, L. Monclus, E.E. Sharpe, S. Samreen, K.T. Ahmed, Q.P.V. Allamby,



SCCWRP, in partnership with the San Francisco Estuary Institute and the California Ocean Protection Council, has published a technical report summarizing best-practices recommendations for building a coordinated mapping program for four California coastal habitats.

A.L. Antonio Vital, D. Asnicar, J.L. Bare, A. Barrick, K. Berreman, L. Bertrand, V. Boone, A. Bour, J. Brehm, V. Carrasco-Navarro, T. Cook, G.A. Covernton, P. Cubanski, P.M.C. Da Silva, L. de Souza Leite, S.M. Gene, L. Hermabessiere, A. Hooge, Y. Iwasaki, N. Klasios, C.M. Knauss, A.K. Kardgar, P. Kropf, I.B. Kudu, A. Kukkola, C. Laforsch, S.B. Kennedy, F.D.L. Leusch, L.W. Li, H.C. Lu, J. Mahan, U.D. Saif, S. Mondellini, J.P. Norman, Z. Pandelides, T. Petersson, D.A. Philibert, E. Kvist, A.F.R.M. Ramsperger, G. Rigutto, S. Ritschar, M.H. Sandgaard, J. Schmitt, M. Schott, M. Schwarzer, K.J. Seabrook, T.M.

Seifried, R. Sepahi, M. Sina, A.N. Testoff, M. Vercauteren, C.M. Wardlaw, A. Yeh, M. Zajac-Fay, [A.C. Mehinto](#). 2025. [The Toxicity of Microplastics Explorer \(ToMEx\) 2.0. Microplastics and Nanoplastics](#) DOI:10.1186/s43591-025-00145-6.

[Xin, D.](#), A.P. Davis, [E. Fassman-Beck](#). 2025. [Assessment of PFOA and PFOS Sorption to Engineered Media in Biofiltration Columns](#). *Journal of Sustainable Water in the Built Environment* DOI:10.1061/JSWBAY.SWEN G-668.

[Xin, D.](#), [J. Gray](#), T. Zabala, A.P. Davis, [E. Fassman-Beck](#). 2025. [Impact of Media Properties on Dissolved Copper Sorption in Stormwater Biofiltration](#). *ACS ES&T Water* DOI:10.1021/acsestwater.5c00680.

Journal Articles (Accepted)

[Lao, W.](#), [S. Sauers](#), [C.S. Wong](#). Characterization and potential influence of laboratory airborne particle fallout on microplastics analysis. *Journal of Hazardous Materials*.

Nissen, K., M. Borst, [E. Fassman-Beck](#). Bioretention Flow-Through Planter Performance and Design Considerations. *Journal of Sustainable Water in the Built Environment*

Technical Reports

San Francisco Estuary Institute, Southern California Coastal Water Research Project. 2025. [Tracking Coastal Habitat Change Over Time: Considerations for a Statewide Mapping Program](#). Technical Report 1438. Southern California Coastal Water Research Project. Costa Mesa, CA.

Quarter in Review

Conference Presentations

Fassman-Beck, E., J. Fortuna. Automated Detection of Transient Illicit Discharges Using IoT Sensors. California Stormwater Quality Association (CASQA) Annual

Conference 2025. September 16, 2025. Pasadena, CA.

Fassman-Beck, E., D. Xin. 3-yrs old BMP Monitoring from the SoCal Stormwater Monitoring Coalition Regional BMP

Monitoring Network. California Stormwater Quality Association (CASQA) Annual Conference 2025. September 16, 2025. Pasadena, CA.

Jansen, L.S., K.T. Taniguchi-Quan, K. Irving, E.D. Stein. Developing Flow-Ecology Curves to Assess Ecological Risk to Flow Alterations in the North Coast. Annual meeting of the California Bioassessment Workgroup. October 29, 2025. Sacramento, CA.

Mazor, R.D. Improving biological conditions in modified channels. Annual meeting of the California Bioassessment Workgroup. October 29, 2025. Sacramento, CA

Mazor, R.D. A toolkit for assessing nonperennial streams in California. The Symposium on Urbanization and Stream Ecology. October 9. Via webinar.

O'Connor, K., J. Walker, E.D. Stein. Estuary Bioassessment Part 1 – Overview of California's Statewide Estuary Monitoring. Annual meeting of the California Bioassessment Workgroup. October 29, 2025. Sacramento, CA

Schiff, K. Future Research Planning Panel for the Strategy to Optimize Resource Management of Stormwater (Stormwater Strategy, STORMS). California Stormwater Quality Association (CASQA) Annual Conference 2025. September 16, 2025. Pasadena, CA.

Stein, E.D., K. Irving. Regional Temperature Response Relationships Help Inform Urban River Management in a Changing Climate. International Symposium on River Science. October 9, 2025. Davis, CA.

Stein, E.D., J. Walker. Estuary Bioassessment – Part 2: Sentinel site networks as cornerstone of ambient estuary. Annual meeting of the California Bioassessment Workgroup. October 29, 2025. Sacramento, CA

Taniguchi-Quan, K.T., M. Klaar, S. Yi, F. Dyer. Advancing Environmental Flow Management: Holistic Approaches for Sustaining Aquatic Ecosystems. International Symposium on River Science. October 6-9, 2025. Davis, CA.

Taniguchi-Quan, K.T., B. Lane, A. Lee, K. Irving, J. Morgan, E.D. Stein, L. Jansen, T. Grantham, G. Rossi. Ecological risk assessment to inform regional instream flow management. International Symposium on River Science. October 9, 2025. Davis, CA.

Tupitza, J., D. Gillett, J. Walker, E.D. Stein. Estuary Bioassessment - Part 3: Eelgrass bioassessment as a potential bioindicator of estuarine health. Annual meeting of the California Bioassessment Workgroup. October 29, 2025. Sacramento, CA

Xin, D., E. Fassman-Beck, S. Dial-Sauers, D. Nguyen. Treatment effectiveness of microplastics in biofiltration: Runoff and media sampling and analysis. California Stormwater Quality Association (CASQA) 2025 Annual Conference. September 16, 2025. Pasadena, CA.

Conference Posters

Lao, W., C. Wong, L. Loretta Fernandez. Determination of DDT+ in the Palos Verdes Shelf water column by polyethylene and solid phase microextraction passive samplers. American Chemical Society Fall 2025 meeting. August 17-21, 2025. Washington, D.C.

Other Presentations

Fassman-Beck, E. SoCal Stormwater Monitoring Coalition Regional BMP Monitoring Network – Biofilter Performance. California Stormwater Quality Association (CASQA) BMP Subcommittee. October 28, 2025. Via webinar.

Fassman-Beck, E. SoCal Stormwater Monitoring Coalition Regional BMP Monitoring Network – Biofilter Performance. Orange County Stormwater NPDES General Permittee Committee. October 23, 2025. Via webinar.

Fassman-Beck, E. Measuring the Effects of Street Sweeping on Runoff Water Quality. County of San Diego Program Planning Subcommittee Meeting. October 16, 2025. Via webinar.

Fassman-Beck, E. SoCal Stormwater Monitoring Coalition Regional BMP Monitoring Network – Biofilter Performance. County of San Diego Program Planning Subcommittee Meeting. October 16, 2025. Via webinar.

Fassman-Beck, E. SoCal Stormwater Monitoring Coalition Regional BMP Monitoring Network – Biofilter Performance. U.S. Environmental Protection Agency National Green

Infrastructure Bimonthly Meeting. October 8, 2025. Via webinar.

Fassman-Beck, E. SoCal Stormwater Monitoring Coalition Regional BMP Monitoring Network – Biofilter Performance. City of San Diego. September 29, 2025. Via webinar.

Frieder, C.A. Numerical ocean models at the ready for mCDR application in the southern California Current System. California Forum on Abiotic Marine Carbon Dioxide Removal. September 5, 2025. Sacramento, CA.

Frieder, C.A. The OAH Data Portal as a visualization tool for numerical ocean model outputs. Cal OAH Portal Launch and Demo Webinar. September 2, 2025. Via webinar.

Gillett, D.J., R.D. Mazor. Causal assessment and source identification: Tools for inland waters of California. Presentation to the State Water Board Division of Water Quality. September 25, 2025. Via webinar.

Gillett, D.J., R.D. Mazor. Causal assessment tools for biointegrity. Presentation to the State Water Board Integrated Report-TMDL roundtable. October 14, 2025. Via webinar.

Guillemette, R. Breaking It Down: How Method Development for Dissolved eDNA Uncovered New Decay Dynamics. University of Memphis, Department of Biological Sciences Seminar Series. September 10, 2025. Memphis, TN.

Guillemette, R. Environmental DNA in Southern California for aquatic biological monitoring. Cal State University, Los Angeles. September 18, 2025. Los Angeles, CA.

Jansen, L., K.T. Taniguchi-Quan. Framework to Flows Project: Interactions Among Flow, Temperature, and Biota in the San Luis Rey Watershed. Southern Steelhead Coalition. October 21, 2025. Via webinar.

Lao, W., Wong, C., L. Loretta Fernandez. Determination of DDT+ in the Palos Verdes Shelf water column by polyethylene and solid phase microextraction passive samplers. American Chemical Society Fall 2025. August 17-21, 2025. Washington, D.C.

Mazor, R.D. Tools for assessing biological conditions of streams in California. California Stormwater Quality Association (CASQA) seminar series on bioassessment. July 10, 2025. Via webinar.

Mazor, R.D. Bioassessment 101: An introduction to California's bioassessment resources for managers. September 4-5, 2025. Sacramento, CA.

Mehinto, A. Los Angeles Post-Fire Network: Coordination of Water Quality Monitoring. California Water Quality Monitoring Council. August 21, 2025. Via webinar.

Mehinto, A. Ecotoxicology in the 21st Century: Improving water quality, sediment quality and ecological risk assessment. Presentation to the Los

Angeles State Water Board. October 29, 2025. Los Angeles, CA.

Schiff, K. SCCWRP's success with Third Party Administration of Supplemental Environmental Projects. Santa Ana Regional Water Quality Control Board. September 12, 2025. Fountain Valley, CA.

Schiff, K. What Regional Monitoring tells about Ocean Health. City of Los Angeles Bureau of Sanitation Seminar Series. September 17, 2025. Playa Del Rey, CA.

Schiff, K. Microbial Source Tracking and the San Diego River Investigative Order. State Bacteria Water Quality Workgroup. October 1, 2025. Via webinar.

Stein, E.D., Mehinto, A. Wildfire effects on Contaminant Runoff and water quality and Coordination of existing programs for

largescale monitoring. Presentation at the National EPA Nonpoint Source (NPS) Technical Exchange Webcast. October 29, 2025. Via webinar.

Taniguchi-Quan, K.T. California Environmental Flows Framework Meeting: Coordination and Collaboration Across State Programs. Department of Water Resources. August 26, 2025. Sacramento, CA.

Tupitza, J.T. Environmental DNA (eDNA) monitoring for sensitive and invasive species. Santa Ana River Coordination Meeting. August 20, 2025. Via webinar.

Xin, D. Laboratory Experiments to Unpack the BMP Black Box for Dissolved Copper. Orange County NPDES LIP PEA Subcommittee meeting. August 26, 2025. Lake Forest, CA.

SCCWRP Personnel Notes

Commission



Eric Lindberg, Executive Officer for the Santa Ana Regional Water Quality Control Board, was elevated from Alternate Commissioner to Commissioner in August,

replacing Jayne Joy, who retired after serving on the Commission for more than seven years. Lindberg has served on the Commission since 2024.



Dr. Brian Covellone, a Senior Engineering Geologist at the Santa Ana Regional Water Quality Control Board, was named an Alternate Commissioner in August,

replacing Eric Lindberg, who has been elevated to the Commissioner role.



Mark Lombos, who has served as a SCCWRP Alternate Commissioner and CTAG Representative for the past four years, retired in October as the Assistant Deputy Director

of Stormwater Quality at the Los Angeles County Flood Control District. His replacement has not yet been named.

Scientific Leadership

Dr. Elizabeth Fassman-Beck has been appointed to the technical committee for the 2026 Novatech Conference.

Dr. Ryan Guillemette has been appointed chair of the eDNA session for the 2026 annual meeting of the National Shellfisheries Association.

Dr. Raphael Mazor has been appointed to the planning committee for the 2026 annual meeting of the Society for Freshwater Science.

Dr. Raphael Mazor has been appointed chapter liaison for the Society for Freshwater Science.

Ken Schiff has been appointed the water and sediment quality expert for the San Diego Bay Integrated Natural Resource Management Planning Committee.

Ken Schiff has been appointed a technical expert for the California State Water Resources Control Board's Bacteria Working Group.

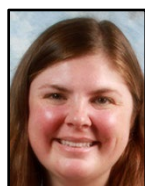
Dr. Stephen Weisberg was selected as one of the convenors for the National Oceanographic Partnership Program Ocean Life Forum, held in September in Maple Lawn, MD.

New Faces



Dr. Ariane Jong-Levinger, who just completed a postdoctoral fellowship at Chapman University, joined SCCWRP in August as an Engineer in the Engineering Department.

At Chapman, she specialized in modeling how different climate and infrastructure management scenarios influence post-fire flood risk.



Shelby Marhoefer-Jess, who most recently worked as a Staff Research Associate at the Scripps Institution of Oceanography, joined SCCWRP in September as

a Senior Research Technician in the Microbiology Department. She will support ongoing efforts to investigate contaminants and pathogens in shellfish.

Promotions



Dr. Ryan Guillemette, a joint postdoctoral researcher with the University of Southern California and SCCWRP since 2023, was promoted in October to a full-time

Scientist in SCCWRP's Biology Department.

CTAG SPOTLIGHT

Geologist leads State's strategy for stormwater

Amanda Magee always knew she wanted to do something related to environmental policy – but she had not considered stormwater management at all until joining the California State Water Resources Control Board's Division of Water Quality.



Amanda Magee

After working in environmental consulting for 18 years, Magee joined the State Water Board in 2018, where she worked on leaking underground storage tank cleanup projects. Because Magee often worked closely with other teams, she was introduced to different aspects of water resource management, including surface water and groundwater.

"I started to become interested in water resources the more I began working on different projects and connecting with other people in other areas," said Magee, a Senior Engineering Geologist. "So when an opportunity came up to work with stormwater, I jumped at it."

Now, Magee leads the STORMS (Strategy to Optimize Resource Management of Stormwater) unit at the State Water Board for promoting stormwater as an important resource rather than a source of pollution, and focuses on developing resources to help stormwater managers capture, reuse and manage runoff more efficiently.

Recently, the STORMS unit developed a standardized method for agencies to report costs associated with municipal separate storm sewer system (MS4) permits in an effort to improve consistency and support more efficient permit renewals. The team is also developing tools to make it easier for small municipalities to estimate their potential for stormwater capture and use.



Amanda Magee, husband Brian, and children Sofia and Jax enjoy the beach during a trip to Santa Cruz in August 2025.

Amanda Magee

Job: Senior Engineering Geologist, California State Water Resources Control Board (since 2020)

SCCWRP role: CTAG Representative (started July 2025)

Prior jobs: Engineering Geologist, California State Water Resources Control Board (2018-2020); Associate Geologist, Stantec (2004-2018); Project Manager, ATC Associates (2000-2004)

Education: B.S. earth science/geology, University of California, Santa Cruz (2000)

Residence: Sacramento

Hometown: Lake Forest

Family: Husband Brian, lecturer at UC Davis; children Jax, 19, a biochemistry student at UC Berkeley, and Sofia, 16, a high school junior; dog Merlin, a 6-year-old super mutt

Hobbies: Baking; trying new food; watching soccer; listening to music; traveling the California coast

Magee became the State Water Board's CTAG Representative in July 2025. She currently also chairs the Southern California Stormwater Monitoring Coalition (SMC), a regional partnership of 18 stormwater management agencies working to develop solutions to regional challenges in stormwater management.

"One of my favorite things about being in this role is all the relationships I get to build with everyone in this field, from permittees to NGOs to academia," Magee said. "It's important to have strong relationships to be able to work together and accomplish our stormwater management objectives."

Magee received a B.S. in earth science and geology from University of California, Santa Cruz. She initially started as an environmental studies major, but became enamored with field trips and hands-on work after taking a geology class. After graduating, Magee joined an environmental consulting firm and worked on subsurface environmental cleanups in Washington and Northern California before joining the State Water Board.

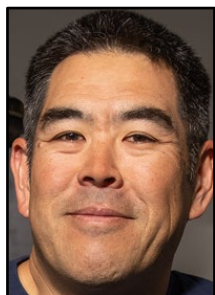
For Magee, being in CTAG is an exciting opportunity to learn more about SCCWRP's research and be able to strengthen partnerships across sectors.

In her spare time, Magee enjoys baking, listening to indie rock, and getting lost in a good book. She and her family are also avid soccer enthusiasts, proudly holding season tickets for the Sacramento Republic FC, and never miss a chance to cheer on their favorite hometown team.

SCCWRP PARTNER SPOTLIGHT

Engineer takes applied approach to ocean science

Dr. Kevan Yamahara combines his engineering expertise with his passion for the ocean to answer questions about marine and coastal environments with an applied science approach.



Dr. Kevan Yamahara

As a Senior Research Specialist at the Monterey Bay Aquarium Research Institute (MBARI), Yamahara works on innovative technologies to help advance aquatic research and ocean monitoring efforts, and then applies them for use by the broader scientific community.

"The engineering side of me likes coming up with solutions to problems, so I'm really driven to find ways to use our tools to answer important questions we have about our ocean," Yamahara said. "The research we're doing should be working toward helping a better cause like protecting our environment, and I want to support that."

Yamahara is part of the team at MBARI that developed the Environmental Sample Processor (ESP) – an autonomous device that collects and filters water samples for real-time monitoring. He and SCCWRP have been working together to use ESP to remotely collect and process water samples for environmental DNA (eDNA) analysis to help detect and monitor invasive species, such as golden mussel and caulerpa, in California waters.

For more than 15 years, Yamahara has been collaborating with SCCWRP on various water-quality projects. When he was a Ph.D.



Dr. Kevan Yamahara, wife Allison, and daughters Toie and Sydney visit Lake Tahoe in March 2025 for a ski trip.

Kevan Yamahara, Ph.D.

Job: Senior Research Specialist, Monterey Bay Aquarium Research Institute (since 2014)

SCCWRP role: Partner on water-quality and environmental DNA research

Prior jobs: Fellow, Center for Ocean Solutions, Stanford University (2011-2014); Graduate Student Research, Stanford University (2006-2011); Deckhand and Captain, Toronado and Aztec Sportfishing (1997-2004)

Education: Ph.D. environmental engineering and science, Stanford University (2011); M.S. environmental engineering and science, Stanford University (2007); B.S. civil and environmental engineering, California State Polytechnic University, Pomona (2006)

Residence: Santa Cruz

Hometown: Torrance

Family: Wife Allison, co-founder of a biotech company; daughters Toie, 7, and Sydney, 4

Hobbies: Running; hiking; backpacking; fishing

student at Stanford University, he and SCCWRP worked on projects measuring fecal indicator bacteria in recreational waters.

"I love working with SCCWRP since they also take that applied approach to science," Yamahara said. "Partners like SCCWRP use the tools we develop in their science and reach audiences that we normally couldn't on our own."

Yamahara's passion for the ocean started early in his life. Growing up in Torrance, he enjoyed surfing and fishing, and even worked on commercial and sportfishing boats in high school.

As an undergrad at Cal Poly Pomona, Yamahara was interested in building bridges and initially studied structural engineering. He later became fascinated with environmental science after taking a wastewater design class.

After graduating with a B.S. in civil and environmental engineering, Yamahara received both a M.S. and Ph.D. in environmental engineering and science from Stanford University.

In his spare time, Yamahara enjoys spending time outdoors with his family, especially backpacking, hiking and skiing. He also enjoys running and is part of a group with his fellow eDNA researchers called the "Runners."

SCCWRP STAFF SPOTLIGHT

Engineer inspired by climate change documentary

After Dr. Ariane Jong-Levinger watched the film *An Inconvenient Truth* in her high school biology class, she was inspired to find a career where she can not only address climate change issues, but also help others better understand them too.



Dr. Ariane Jong-Levinger

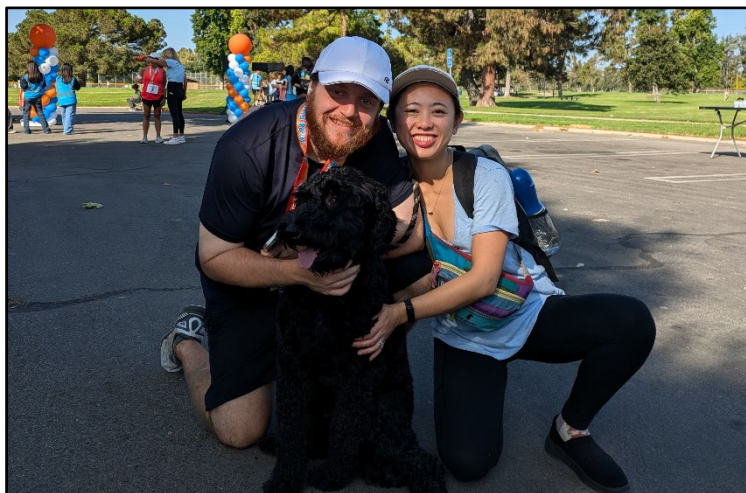
Jong-Levinger thought about potential careers in research, policymaking, and even filmmaking, since the film had such a huge impact on her. She chose to study environmental science and policy at Chapman University, where she explored these options.

During her first year, Jong-Levinger began working under a faculty member as a research assistant and became fascinated with working with data and models, and communicating science through that approach.

"I was really drawn to the computational part of research, which led me down the path of engineering," said Jong-Levinger, who received both her M.S. and Ph.D. in civil and environmental engineering from UCI. "I could do data analysis and modeling while also doing work that addresses climate change."

Jong-Levinger joined SCCWRP in August as an Engineer in the Engineering Department. She is involved in various projects quantifying and evaluating the performance of stormwater best management practices (BMPs) and developing data tools for processing BMP monitoring data.

Jong-Levinger recently completed her postdoctoral fellowship at Chapman University, where she studied the impact of wildfires and storms on flood management infrastructure in Southern California. She also helped develop a model that assesses how different climate and infrastructure management scenarios influence post-fire flood risk.



Dr. Ariane Jong-Levinger celebrates with her husband Will and their dog Koba after the Heroes 4 Hearing 5K race in Fountain Valley in 2024.

Ariane Jong-Levinger, Ph.D.

Job: Engineer, SCCWRP Engineering Department (started August 2025)

Prior jobs: Postdoctoral Fellow, Chapman University (2023-2025); Graduate Student Researcher, University of California, Irvine (2018-2023); Staff Scientist, Council for Watershed Health (2016-2018); Data Analyst, Southern California Coastal Water Research Project (2015-2016)

Education: Ph.D. civil and environmental engineering, University of California, Irvine (2023); M.S. civil and environmental engineering, University of California, Irvine (2020); B.S. environmental science and policy, Chapman University (2016)

Residence: Costa Mesa

Hometown: Wantagh, Long Island, New York

Family: Husband Will, who works in film and television development; dog Koba, a 3-year-old poodle/Wheaton terrier mix

Hobbies: Baking; making origami; hiking; running

"In Southern California, there's a lot of attention on wildfires and proactive work being done to prevent them from happening, but public awareness of post-fire floods and debris flows is less common," Jong-Levinger said. "Even after evacuating from a fire, we still need to think about post-fire flood hazards, unfortunately."

Teaching and communicating science is also an important core of Jong-Levinger's work. As part of her postdoc, Jong-Levinger also taught and mentored undergrad STEM students as part of the Grand Challenges Initiative program.

Jong-Levinger previously worked as a part-time Data Analyst in SCCWRP's Biology Department during her undergrad. After graduating, she became a scientist at the Council for Watershed Health, where she focused on green infrastructure projects and monitoring for the Los Angeles River watershed.

After returning to SCCWRP, Jong-Levinger is excited to be working on applied science that helps inform management actions.

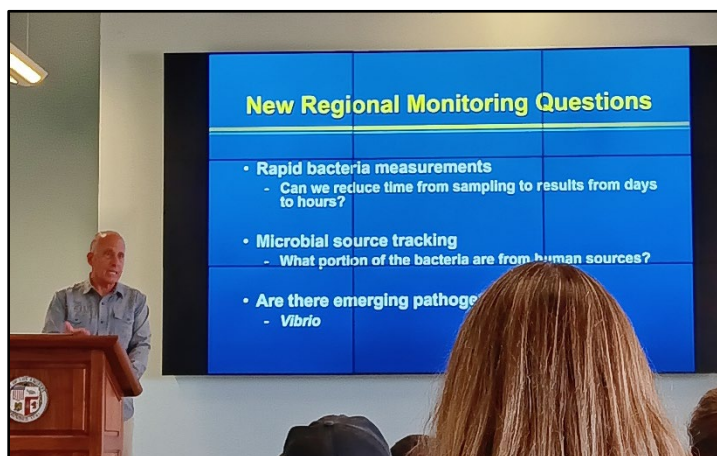
"Even when I was an undergrad, I imagined myself being a researcher at SCCWRP," Jong-Levinger said. "I want to be part of an environment that really fosters doing science to address problems."

In her spare time, Jong-Levinger enjoys baking and making origami. She and her husband Will also run together and participate in 5K and 10K races.

SCCWRP SCENES

Bringing SCCWRP research to member agencies

SCCWRP hosted a five-part monthly seminar series at the City of Los Angeles's Hyperion Water Reclamation Plant from May to September for City staff to learn about SCCWRP research and how it informs aquatic management practices. Each hour-long seminar focused on a different topic: microplastics, beach water quality monitoring, estuary monitoring, stormwater BMPs (best management practices), and the Southern California Bight Regional Monitoring Program. The seminar series fostered meaningful interactions between City and SCCWRP staff, and underscored SCCWRP's commitment to engaging with its member agencies.



Clockwise from above, SCCWRP's Ken Schiff discusses the Southern California Bight Regional Monitoring Program during one of five seminars held at the City of Los Angeles Hyperion Water Reclamation Plant's Environmental Learning Center; SCCWRP's Dr. Leah Thornton Hampton discusses the health effects of microplastics exposure; and SCCWRP Commissioner Jim Marchese, the City of Los Angeles's Assistant Division Manager for Legislative and Regulatory Affairs at the Bureau of Sanitation, introduces Ken Schiff as a seminar speaker.

