

Annual Reporting for FY 2019-2020

Pesticide Toxicity Regulatory Modernization

San Francisco Bay Area Small MS4 Permit Implementation



September 2020

Introduction

This report provides information on regionally implemented activities complying with portions of the Small Municipal Separate Storm Sewer System (MS4) [Phase II Permit](#) issued by the State Water Resources Control Board (Water Board). The Phase II Permit covers stormwater discharges from 24 municipalities and special districts (Permittees) in the North San Francisco Bay Area. This report covers pesticide toxicity regulatory modernization activities implemented through the Bay Area Stormwater Management Agencies Association (BASMAA) related to the following Phase II Permit provisions:

- E.7.a.(ii)(i) – Develop and convey messages specific to proper application of pesticides, herbicides, and fertilizers
- E.11.h. – Permittee Operations and Maintenance Activities (O&M)
- E.11.j. – Landscape Design and Maintenance
- E.15.a. / Attachment G – Implement Pesticide-Related Toxicity Control Program

Effecting regulatory modernization occurs at the State and Federal level. Recognizing that fact, the Permittees have taken an approach to modernizing pesticide regulations that involves cooperating with BASMAA, the California Stormwater Quality Association (CASQA), and/or the Urban Pesticide Pollution Prevention Project (UP3 Project). All of these entities have determined this cooperative approach is not only the most likely approach but is likely the only approach for local agencies to effect meaningful change in the State and Federal regulatory environments.

The actual work of tracking and participating in the ongoing regulatory efforts related to pesticides was accomplished through CASQA. The Phase II and Phase I Permittees made contributions to CASQA through BASMAA. CASQA conducted its activities on behalf of its contributors and its members and coordinated funding contributions and activities through its Pesticides Subcommittee, a group of stormwater quality agencies affected by pesticides or pesticides-related toxicity listings, TMDLs, or permit requirements, as well as others knowledgeable about pesticide-related stormwater issues. FY 2019-20 was another productive year for the Subcommittee. The CASQA Pesticides Subcommittee's annual report for FY 2019-20 (attached) provides a comprehensive and detailed accounting of efforts to track and participate in relevant regulatory processes as well as accomplishments related to pesticides and stormwater quality.

Pesticides Subcommittee Annual Report and Effectiveness Assessment 2019-2020

California Stormwater Quality Association



Final Report
August 2020

Pesticides Subcommittee Annual Report and Effectiveness Assessment

2019-2020

California Stormwater Quality Association

August 2020

Preface

The California Stormwater Quality Association (CASQA) is comprised of stormwater quality management organizations and individuals, including cities, counties, special districts, industries, and consulting firms throughout California. CASQA's membership provides stormwater quality management services to more than 22 million people in California. This report provides CASQA's members with focused information on its efforts to prevent pesticide pollution in urban waterways. It is a component of CASQA's Source Control Initiative, which seeks to address stormwater and urban runoff pollutants at their sources. This report was funded by CASQA, BASMAA, the Sacramento Stormwater Quality Partnership, and Alameda Countywide Clean Water Program.

This report was prepared by Stephanie Hughes under the direction of the CASQA Pesticides Subcommittee Co-Chair Dave Tamayo, with input from Dr. Kelly Moran and Tammy Qualls of Qualls Environmental Consulting.

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Abbreviations Used in this Report

BACWA – Bay Area Clean Water Agencies

BE – Biological Evaluation

CASQA – California Stormwater Quality Association

CEQA – California Environmental Quality Act

CCRWQCB – Central Coast Regional Water Quality Control Board

CVRWQCB – Central Valley Regional Water Quality Control Board

CWA – Clean Water Act

DPR – California Department of Pesticide Regulation

EPA – United States Environmental Protection Agency

ESA – Endangered Species Act

FWS – U.S. Fish and Wildlife Service

FY – Fiscal Year (July 1 through June 30)

IPM – Integrated Pest Management

MAA – Management Agency Agreement between DPR and the Water Boards

MS4 – Municipal Separate Storm Sewer System

NACWA – National Association of Clean Water Agencies

NPDES – National Pollutant Discharge Elimination System

OPP – U.S. EPA Office of Pesticide Programs

OW – U.S. EPA Office of Water

PAH – Polycyclic aromatic hydrocarbon

PEAIP – Program Effectiveness Assessment and Improvement Plan

PMAC – Pest Management Advisory Committee

PPI – Pests, Pesticides, and Integrated Pest Management DPR initiative

PMP – Pesticides-specific Management Practice

PSC – CASQA Pesticides Subcommittee

SPCB – Structural Pest Control Board

SFBRWQCB – San Francisco Bay Regional Water Quality Control Board

STORMS – Strategy to Optimize Resource Management of Storm Water (a program of the State Water Board)

SWAMP – California Water Boards Surface Water Ambient Monitoring Program

SWRCB – State Water Resources Control Board or State Water Board

TMDL – Total Maximum Daily Load (regulatory plan for solving a water pollution problem)

UP3 – Urban Pesticides Pollution Prevention Partnership

UPA – Urban Pesticide Amendments

UPCMP – Urban Pesticides Coordinated Monitoring Program

USGS – U.S. Geological Survey

Water Boards – California State Water Resources Control Board together with the California Regional Water Quality Control Boards

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Executive Summary

This report by the Pesticides Subcommittee (PSC) of the California Stormwater Quality Association (CASQA) describes CASQA's activities related to the goal of preventing pesticide pollution in urban waterways from July 2019 through June 2020.

To address the problems caused by pesticides in California's urban waterways, CASQA collaborates with the California State Water Resources Control Board and the California Regional Water Quality Control Boards (Water Boards). By working with the Water Boards and other water quality organizations, we address the impacts of pesticides efficiently and proactively through the statutory authority of the California Department of Pesticide Regulation (DPR) and EPA's Office of Pesticide Programs (OPP). More than 17 years of collaboration with Urban Pesticides Pollution Prevention (UP3) Partnership, as well as EPA and DPR staff, has resulted in significant changes in pesticide regulation. CASQA's activities and outcomes are described in Section 2. This year's highlights include continued progress on the State Water Board's Urban Pesticides Amendments (UPA) project as well the pesticide regulator actions described below.

Near term/Current problems – Are actions being taken by State and Federal pesticides regulators and stakeholders expected to end pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff?

- 💧 In Fall 2019, DPR finalized regulations to restrict carbaryl use and end sale of carbaryl consumer products. This action makes all carbaryl products in California restricted materials, except for baits labeled only for agricultural use. This regulation was filed with the Secretary of State this spring and will become effective on August 1st.
- 💧 CASQA identified a product registration application containing novaluron and successfully requested this product be routed by DPR for surface water review. The subsequent evaluation did not support registration. DPR subsequently issued a Notice of Proposed Decision to Deny the product.
- 💧 CASQA shared its urban runoff expertise with pesticide regulators by preparing comment letters to EPA for seven pesticide reviews, providing the Water Boards and other Partners with information that triggered additional letters on two more pesticide reviews, and participating in meetings and conference calls focused on priority pesticides and long-term regulatory structure improvements. (See *Tables 3, 4 and 5 and the Appendix.*)
- 💧 CASQA provided feedback to EPA regarding their Framework for Pesticides Risk Assessments Incorporating Endangered Species Act Biological Evaluations (and eventually all pesticides risk evaluations for conventional pesticides) requesting that outdoor impervious surfaces be included in the list of areas that receive pesticide treatment.
- 💧 In response to continued requests from CASQA and Partners, EPA has begun following a precedent for improved label language for pool, spa, and fountain chemicals that was established by the decisions for lithium hypochlorite and copper.
- 💧 CASQA/UP3 reviewed scientific literature in order to update and prioritize the Pesticide Watch List, which it shared with pesticides regulators and with government agency and university scientists to stimulate generation of surface water monitoring and aquatic toxicity data for the highest priority pesticides. (See *Table 2.*)

Long term/Prevent future problems – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?

- 💧 DPR continues to demonstrate its commitment to addressing pesticide impacts on receiving waters through timely mitigation and implementation of improved evaluation procedures.
- 💧 The State Water Board continued to work toward adoption of the UPA. These amendments would institutionalize the State's strategy of utilizing pesticide regulations as the primary mechanism for addressing pesticide water quality problems associated with urban runoff, serving as a TMDL

alternative. Implementation will be supported by a new statewide urban runoff pesticides monitoring program intended to coordinate with existing Water Board and DPR urban pesticides and toxicity monitoring programs.

- 💧 In concert with the development of UPA, the Urban Pesticides Coordinated Monitoring Program (UPCMP) continued progress to establish the initial framework of the monitoring program via the Steering Committee and Technical Committee.
- 💧 CASQA continued to be an active participant in the UPCMP and recruited members to serve on both the Steering Committee and Technical Committee. CASQA organized a meeting of DPR, Water Board, and CASQA representatives for July 24th for DPR to provide details to senior Water Board management on DPR's capacity and progress for addressing urban pesticide issues.
- 💧 A paper was published that was co-authored by Dr. Kelly Moran, and staff from DPR, the State Water Board, and UC Davis, describing many of the key elements of the coordination between DPR and the State Water Board.
- 💧 Although many improvements have been made by OPP since the early 2000s, improvement in scientific evaluations supporting OPP's regulatory efforts and better understanding of urban runoff management systems are still necessary to adequately protect urban surface waters from pesticide impairments. In recent years, the regulatory climate has changed, limiting support of progress by OPP in addressing these concerns.

In FY 2020-2021, CASQA plans to continue to address near-term pesticide concerns and seek long-term regulatory change. Future near-term and long-term tasks are identified in Section 3, Tables 5 and 6. Key topics include:

- 💧 Continued support of the eventual completion and adoption of the UPA by the State Water Board
- 💧 Continued development of the UPCMP in partnership with the Water Boards, DPR, and EPA Region 9
- 💧 Registration review-related activities at EPA for pyrethroids and fipronil (the only such opportunity for the next 15 years)
- 💧 DPR registration applications and proposed decisions for new products

Section 1. Introduction

1.1 IMPORTANCE OF CASQA'S EFFORTS TO IMPROVE PESTICIDE REGULATION

For decades now, the uses of certain pesticides in urban areas – even when applied in compliance with pesticide regulations – have adversely impacted urban water bodies. Currently used pesticides are the primary cause of toxicity in California surface waters, including urban water bodies.¹ Under the Clean Water Act (CWA), when pesticides impact water bodies, local agencies may be held responsible for costly monitoring and mitigation efforts. To date, some California municipalities² have incurred substantial costs to comply with pesticides-related Total Maximum Daily Loads (TMDLs) and additional permit requirements. In some cases (e.g., diazinon, chlorpyrifos), municipal compliance costs have continued more than a decade after termination of virtually all urban use. In the future, more municipalities throughout the state could be subject to similar requirements, as additional TMDLs and Basin Plan amendments are adopted (Table 1). Meanwhile local agencies have no authority to restrict or regulate when or how pesticides are used³ in order to proactively prevent pesticide pollution and avoid these costs.

Under federal and state statutes, EPA and DPR have the authority and responsibility to regulate pesticides and protect water bodies from adverse effects (including impacts from pesticides in urban runoff). Unfortunately, until the relatively recent past these agencies did not recognize the need, nor did they possess the institutional capacity to exercise their authority to protect urban water quality. As a result, past registration actions have allowed a number of pesticides (such as pyrethroids and fipronil) to be used legally in ways that have resulted in widespread pollution in urban water bodies. This situation is depicted in Figure 1.

To change this situation CASQA is actively engaged with state and federal regulators in an effort to develop an effective pesticide regulatory system, based primarily on existing statutes, that includes timely identification and mitigation of urban water quality impacts, and proactively prevents additional problems through the registration and registration review processes (Figure 2).

Table 1. California TMDLs, Statewide Water Quality Control Plans, and Basin Plan Amendments Addressing Currently Registered Pesticides and/or Toxicity in Urban Watersheds⁴

Water Board Region	Water Body	Pesticide	Status
Statewide	All MS4s/All Urban Waterways: Statewide Water Quality Control Plan amendments for urban pesticides reduction ["Urban Pesticides Amendments"] (Inland Surface Waters, Enclosed Bays & Estuaries, and Ocean)	All Pesticides/All pesticide-related toxicity	In preparation
	Sediment Quality Objectives (Enclosed Bays & Estuaries)	Sediment Toxicity ⁵	Approved
	Toxicity Provisions (Inland Surface Waters and Enclosed Bays & Estuaries)	Toxicity ⁵	In preparation

¹ See reports from the California Surface Water Ambient Monitoring Program Sediment Pollution Trends Program including Anderson, B.S., Hunt, J.W., Markewicz, D., Larsen, K., 2011. Toxicity in California Waters, Surface Water Ambient Monitoring Program. California Water Resources Control Board. Sacramento, CA.

² For example, Sacramento-area municipalities spent more than \$75,000 in the 2008-2013 permit term on pyrethroid pesticide monitoring alone; Riverside-area municipalities spent \$617,000 from 2007 to 2013 on pyrethroid pesticide chemical and toxicity monitoring.

³ Local agencies in California have authority over their own use of pesticides but are pre-empted by state law from regulating pesticide use by consumers and businesses.

⁴ Excludes pesticides that are not currently registered in California, such as organochlorine pesticides.

⁵ These TMDLs/Plan provisions can trigger toxicity testing stressor source identification studies, and additional follow up, even when toxicity is linked to current pesticides.

Water Board Region	Water Body	Pesticide	Status
San Francisco Bay (2)	All Bay Area Urban Creeks	All Pesticide-Related Toxicity	Approved
Central Coast (3)	Santa Maria River Watershed	Pyrethroids, Toxicity	Approved
	Lower Salinas River Watershed	Pyrethroids, Toxicity	Approved
		Malathion, Chlorpyrifos, Diazinon ⁶	In development
	San Lorenzo River Watershed (Santa Cruz)	Chlorpyrifos ⁶	Approved
Los Angeles (4)	Marina del Rey Harbor	Copper (Marine antifouling paint) ⁷	Approved
	Oxnard Drain 3 (Ventura County)	Bifenthrin, Toxicity	EPA-Adopted Technical TMDL
	Calleguas Creek, its Tributaries and Mugu Lagoon	Water & Sediment Toxicity ⁵	Approved
	McGrath Lake (Ventura County)	Diazinon & Chlorpyrifos ⁶	Approved
	Colorado Lagoon (Long Beach)	Sediment Toxicity ⁵	Approved
	Dominguez Channel and Greater Los Angeles and Long Beach Harbors Waters	Sediment Toxicity ⁵	Approved
	Ballona Creek Estuary	Sediment Toxicity ⁵	Approved
Central Valley (5)	Sacramento River and San Joaquin River Basins	Pyrethroids	Approved
	Sacramento-San Joaquin River Delta Waterways	Diazinon & Chlorpyrifos ⁶	Approved
	Sacramento & Feather Rivers	Diazinon & Chlorpyrifos ⁶	Approved
	Sacramento County Urban Creeks	Diazinon & Chlorpyrifos ⁶	Approved
	Lower San Joaquin River	Diazinon & Chlorpyrifos ⁶	Approved
Lahontan (6)	Pesticide Discharge Prohibition	All Pesticides	Approved
Santa Ana (8)	Newport Bay	Copper (Marine antifouling paint) ⁷	In preparation
	San Diego Creek, and Upper and Lower Newport Bay	Toxicity (Diazinon & Chlorpyrifos) ⁶	EPA-Adopted Technical TMDL
San Diego (9)	Shelter Island Yacht Basin (San Diego Bay)	Copper (Marine antifouling paint) ⁷	Approved
	Chollas Creek	Diazinon ⁶	Approved

⁶ Use prohibited in urban areas (diazinon) or no meaningful use due to use limitations (chlorpyrifos).

⁷ Primarily addresses pesticides that are directly discharged and should not ordinarily appear in stormwater (marine antifouling paint).

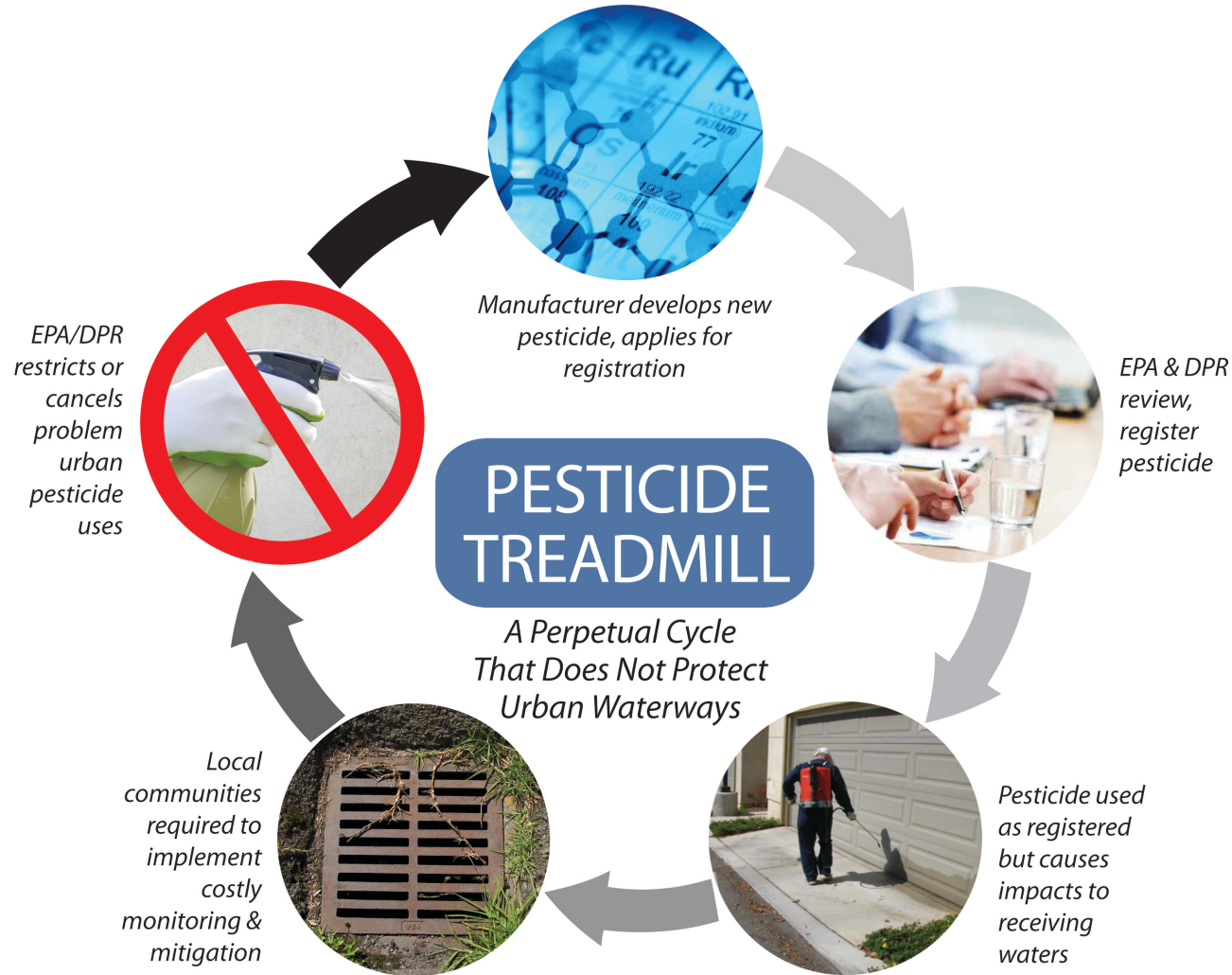


Figure 1. Current Pesticide Regulatory System.⁸

⁸ Photos in Figures 1 and 2 of spraying pesticide along a garage was taken by Les Greenberg, UC Riverside



Figure 2. Proactive Use of the Pesticide Regulatory Structure to Restrict Pesticide Uses that have the Potential to Cause Urban Water Quality Problems.

1.2 CASQA'S GOALS AND APPLICATION TO PROGRAM EFFECTIVENESS ASSESSMENT

CASQA's Vision for Stormwater, first approved by the Board of Directors in 2015, is periodically updated to reflect developments in stormwater management. In August 2019, CASQA released an interim update to support the development of priorities for 2020.⁹ CASQA's Vision, Action 1.3, is to "provide effective and efficient solutions through true source control." Among the three objectives described within Action 1.3 is "control toxicity in receiving waters from pesticide application." In support of this objective, the Vision identifies the following scope:

Anticipated Scope:

- Develop a regulatory system implemented by EPA OPP and California DPR to identify whether use of a pesticide poses a threat to water quality, and then restrict or disallow those uses proactively so that water quality impacts are avoided.
- Respond to the immediate need to participate in EPA pyrethroids, fipronil, and imidacloprid reviews (the only such opportunity for the next 15 years) and to support and encourage DPR steps toward expanded pyrethroids and new fipronil mitigation measures.
- Seek EPA risk mitigation for malathion and carbaryl in urban runoff and the continuation of traditional water quality risk assessments in tandem with Endangered Species Act (ESA) evaluations.
- Continue to leverage successes at the state level as a key stakeholder in the development of statewide Water Quality Control Plan Amendments for urban pesticides reduction.

The effectiveness of CASQA's efforts toward this scope can be expressed in relation to management questions established as part of Municipal Separate Storm Sewer Systems' (MS4s') program effectiveness assessments that are required in some MS4 permits. With respect to addressing urban pesticide impacts on water quality, the following two management questions, derived from the proposed scope for CASQA Vision Action 1.3, are suggested for inclusion in MS4s' program effectiveness assessment:

Question 1: (Near term/Current problems) – Are actions being taken by State and Federal pesticides regulators and stakeholders that are expected to end recently observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff?

Question 2: (Long term/Prevent future problems) – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?

This report is organized to answer these management questions and is intended to serve as an annual compliance submittal for both Phase I and Phase II MS4s. It describes the year's status and progress, provides detail on stakeholder actions (by CASQA and others), and provides a roadmap/timeline showing the context of prior actions as well as anticipated end goal of these activities. This report may also be used as an element of future effectiveness assessment annual reporting.

⁹ <https://www.casqa.org/about/strategic-plan-vision>

Section 2. Results of CASQA 2019-2020 Efforts

At any given time, there are dozens of pesticides with current or pending actions from the EPA or DPR. Addressing near term regulatory concerns is important because some pesticides may pose immediate threat to water quality that can lead to compliance liability for MS4s, and because some of the regulatory decisions made by EPA and DPR will last many years. For example, pesticide registration decisions are intended to be revisited on a fifteen-year cycle. To inform its engagement on near-term regulatory concerns, CASQA uses the pesticide “Watch List” created by the PSC and the UP3 Partnership. The Watch List aids CASQA and the UP3 Partnership in their prioritization of near-term efforts (Section 2.1).

Meanwhile, CASQA and the UP3 Partnership are also working on a parallel effort to effect long-term systemic changes in the regulatory process itself. By identifying inadequacies and inefficiencies in the pesticide regulatory process, and persistently working with EPA and DPR to improve the overall system of regulating pesticides, CASQA and the UP3 are gradually achieving results (Section 2.2).

2.1 NEAR-TERM REGULATORY CONCERNS

CASQA seeks to ensure that the Water Boards and EPA’s Office of Water (OW) work with DPR and the EPA’s OPP to manage problem pesticides that are creating near-term water quality impairments. These efforts address CASQA Vision Action 1.3 as well as Phase II MS4 Program Effectiveness Assessment and Improvement Plan (PEAIP) Management Question 1 regarding observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff.

Assessment Question 1: (Near term/Current problems) – Are actions being taken by State and Federal pesticides regulators and stakeholders that are expected to end recently observed pesticide-caused toxicity or exceedances of pesticide water quality objectives in surface waters receiving urban runoff?

Answer: As detailed below, at the State level, significant progress has been made by DPR in addressing near-term and current problems with pesticides in surface waters receiving urban runoff. DPR continues to implement improved registration processes and responses to observed water quality problems. DPR also continues to implement and evaluate mitigation measures for observed problems with pyrethroids and fipronil.

At the Federal level, less progress has been made at addressing near term problems. Some early actions were taken to address pyrethroid and fipronil problems at the urging of CASQA and DPR. However, EPA does not show a clear understanding of key urban uses in its analyses, and it is still unclear if its upcoming risk management decisions for pyrethroids, fipronil, and imidacloprid and other neonicotinoids will provide any additional protection of urban water bodies.

2.1.1 Updated Pesticide Watch List

A key tool for identifying near-term regulatory concerns is our pesticide “Watch List.” CASQA, working through the UP3 Partnership, reviews scientific literature, government reports, and monitoring studies as they are published. This information is used to prioritize pesticides based on the most up-to-date understanding of urban uses, pesticide characteristics, monitoring, and surface water quality toxicity (for pesticides and their degradates). The PSC uses these insights to update the Watch List each year (Table 2), which serves as a management tool to help us focus our efforts on the most important pesticides from the perspective of MS4 agencies.¹⁰ Comparing the current Watch List to the version published in the 2018/19 PSC Annual Report, we see that the insecticides fipronil, imidacloprid, malathion, and pyrethroids remain as the Priority 1.

¹⁰ The first Watch List was published by the UP3 in 2005.

Table 2. Current Pesticide Watch List (June 2020)

Priority	Basis for Priority Assignment	Pesticides		
1	Monitoring data exceeding benchmarks; linked to toxicity in surface waters; urban 303(d) listings	Pyrethroids (20 chemicals ¹¹)	Fipronil	Imidacloprid (neonic) Malathion
2	Monitoring data approaching benchmarks; modeling predicts benchmark exceedances; very high toxicity and broadcast application on impervious surfaces; urban 303(d) listing for pesticide, degradate, or contaminant that also has non-pesticide sources	Carbendazim (Thiophanate methyl) ¹² Chlorantraniliprole Copper pesticides	Creosote (PAHs) Indoxacarb Neonics (other than Imidacloprid) ¹³ Pendimethalin	Pesticides with dioxins impurity ¹⁴ Polyhexamethylenebiguanide Zinc pesticides (including Ziram)
3	Pesticide contains a Clean Water Act Priority Pollutant; 303(d) listing for pesticide, degradate, or contaminant in watershed that is not exclusively urban	Arsenic pesticides Chromium pesticides	Diuron Naphthenates	Simazine Silver pesticides Trifluralin
4	High or unknown toxicity (parent or degradate) and urban use pattern associated with water pollution; synergist for higher tier pesticide; on DPR priority list	Abamectin ADBAC pesticides ¹⁵ Azoxystrobin Bacillus sphaericus Bacillus thuringiensis (Bti) Bromacil N-Bromosulfamates Busan-77 Carbaryl Chlorinated isocyanurates Chlorine Chlorine dioxide Chlorfenapyr Chlorsulfuron DCOIT DDAC	Dichlobenil Dichlorvos (DDVP) Dithiopyr Halohydantoin Hydramethylnon Hypochlorites Imazapyr Isoxaben Mancozeb Methomyl Methoprene Methyl anthranilate Mineral bases, weak Mineral oil (aliphatic) MGK-264 Novaluron Oryzalin Oxadiazon Oxyfluorfen PCNB	Peroxyacetic acid Phenoxy herbicides ¹⁶ Piperonyl butoxide (PBO) Prodiamine Propiconazole Pyrethrins Pyriproxyfen Sodium bromide Sodium chlorite Sodium percarbonate Sodium tetraborate Spinosad/ Spinetoram Sulfometuron-methyl Tebuconazole Terbutylazine Triclopyr Triclosan Trimethoxysilyl quats

¹¹ Allethrin, Bifenthrin, Cyfluthrin, Cyhalothrin, Cypermethrin, Cyphenothrin, Deltamethrin, Esfenvalerate, Etofenprox, Flumethrin, Imiprothrin, Metofluthrin, Momfluothrin, Permethrin, Prallethrin, Resmethrin, Sumethrin [d-Phenothrin], Tau-Fluvalinate, Tetramethrin, Tralomethrin.

¹² Carbendazim is a registered pesticide, and also a degradate of thiophanate-methyl

¹³ Acetamiprid, Clothianidin, Dinotefuran, Thiamethoxam (degrades into Clothianidin)

¹⁴ 2,4,-D, Chlorothalonil, Dacthal, Pentachlorophenol

¹⁵ Alkyl Dimethyl Benzyl Ammonium Chlorides (ADBAC) includes a family of 21 different quaternary ammonium pesticides.

¹⁶ MCPA and salts, 2,4-D, 2,4-DP, MCPP, dicamba

Priority	Basis for Priority Assignment	Pesticides		
5	Frequent questions from UP3 Partners	Chlorpyrifos (near zero urban use)	Diazinon (no urban use) Glyphosate	Metaldehyde
New	Priority determined on the basis of proposed urban use, aquatic toxicity, and other information in registration application.	Not known but may include the following:	Cyantraniliprole Cyclaniliprole Flupyradifurone	Nitenpyram (Neonic) Nithiazine (Neonic) Sulfoxaflor (Neonic)
None	Based on review of available data, no approved urban use or no tracking trigger as yet identified.	Most of the >1,000 existing pesticides		
Unknown	Lack of information. No systematic screening has been completed by UP3 for the complete suite of urban pesticides.	Unknown		

2.1.2 Description of Near-Term Regulatory Processes

Immediate pesticide concerns may arise from regulatory processes undertaken at DPR or EPA’s OPP. For example, when EPA receives an application to register a new pesticide, there may be two opportunities for public comment that are noticed in the Federal Register, as depicted in green in Figure 3. EPA’s process usually takes less than a year while DPR typically evaluates new pesticides or major new uses of active ingredients within 120 days. Now that DPR implements relatively robust surface water quality review procedures for new pesticide registrations, there is reduced need for CASQA to provide input to EPA on new pesticides.

Figure 3. EPA’s Registration Process for New Pesticides



Another regulatory process, “Registration Review,” depicted in Figure 4, is meant to evaluate currently registered pesticides about every 15 years, to account for new data available since initial registration. In general, it takes EPA five to eight years to complete the entire process. In addition to this process, pesticides are typically evaluated based on Endangered Species Act criteria. EPA regularly updates its schedule for approximately 50 pesticides that will begin the review process in a given year.¹⁷

Figure 4. EPA’s Registration Review – Process to Review Registered Pesticides at a Minimum of Every 15 Years.



¹⁷ See <https://www.epa.gov/pesticide-reevaluation/registration-review-schedules> for schedule information.

DPR also has an ongoing, but informal review process (called continuous evaluation) that can address pesticides water pollution. If it needs to obtain data from manufacturers, DPR can initiate a formal action, called "Reevaluation." These evaluations, mitigation measure development, and mitigation effectiveness evaluation have involved ongoing communication with CASQA and the UP3 Partnership.

While EPA must consider water quality in all of its pesticide registration decisions, at DPR this step is not yet fully established as standard (most outdoor urban pesticide registration applications are routinely routed by DPR for surface water review, but a few – notably antimicrobial products used in storm drains – do not automatically receive this review). CASQA monitors registration applications, to identify those relevant to urban runoff, based on the pesticide watch list in Table 2 and use pattern/toxicity analysis for pesticides that have not previously been reviewed.

2.1.3 Key Near-Term Regulatory Activities and Progress in 2019-20

Table 3 presents a summary of recent UP3 activities to address near-term regulatory concerns and their 2019-2020 results; for additional insight regarding on-going pesticide registrations, see the Appendix. The positive outcomes in Table 3 reflect the success of CASQA's teamwork in the UP3 Partnership. Some of this work occurs during formal public comment periods. To accomplish this, CASQA monitors the Federal Register and DPR's website for notices of regulatory actions related to new pesticide registrations and registration reviews. Since the Watch List is not based on a comprehensive review of all pesticides, CASQA watches for additional pesticides that appear to have any of the following characteristics: proposed urban, outdoor uses with direct pathways for discharge to storm drains, high aquatic toxicity, or containing a priority pollutant. Participating in these regulatory processes can take many years to complete.

In addition, the EPA OPP strives to update their Aquatic Life Benchmarks table on an annual basis.¹⁸ Their 2019 update included two pesticides of interest to urban surface water (see inset at right).

EPA Aquatic Life Benchmarks – 2019 Update

In September 2019, US EPA's Office of Pesticide Programs, Environmental Fate and Effects Division updated its pesticides Aquatic Life Benchmarks table.¹⁸ From the urban surface water quality perspective, this update included two minor changes for pesticides on the Watch List:

- The category "Copper compounds" was added to clarify the applicability of EPA's Office of Water (OW) copper water quality criteria (developed independent from OPP) to all copper-containing pesticides
- The OPP benchmarks for pendimethalin were updated based on the updated toxicity data used to support its 2018 Registration Review decision

Pesticides still awaiting benchmark updates include the many pyrethroids (other than new transfluthrin, which is not yet registered in California) and fipronil and its degradates. These are currently in EPA's Registration Review process.

¹⁸ <https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/aquatic-life-benchmarks-and-ecological-risk>

Table 3. Latest Results of Efforts Communicating Near-Term Regulatory Concerns¹⁹

Regulatory Action or Concern	CASQA Efforts			Partner Support (Letters)	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
DPR					
New product registration application for a rubber product containing zinc, thiabendazole and 2-pyridinethiol-1-oxide (potential tire use)				Sacramento County	Pending. In response to a letter from Sacramento County, DPR stated that the product would not be allowed in rubber, correcting an error in the public notice. This correction was, unfortunately, not reflected in subsequent paperwork. DPR is requesting that the manufacturer correct the label to indicate that it may not be used in rubber in California.
New product registration for an indoxacarb product (Doxem Precise)	✓				Pending. CASQA requested that DPR perform an evaluation of this product. Results pending.
New product registration for a novaluron product (TEKKO 0.2G)	✓				Success! CASQA requested that DPR perform an evaluation of this product. The subsequent DPR evaluation (including modeling) did not support registration. DPR subsequently issued a Notice of Proposed Decision to deny registration.
EPA					
Pyrethroids Ecological Risk Mitigation Proposal for 23 Chemicals [Request for Extension of Comment Period]	✓			BACWA CCWQCB SFBRWQCB CVWQCB NACWA Cities of Cotati, Elk Grove, San Diego, Sacramento, Santa Barbara. County of Los Angeles, Marin County Stormwater PPP, Napa County FCWCD, Alameda	Success. CASQA and Partners requested extension of comment period to provide adequate time for review in light of the complexity of the proposal, the year-end holiday timing, and its timing during the winter rainy season, when member agencies take on substantial extra duties in association with rain events. EPA granted the extension.

¹⁹ Color coding in this table is meant to reflect the “Watch List” prioritization color coding in Table 2.

Regulatory Action or Concern	CASQA Efforts			Partner Support (Letters)	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
				Countywide Clean Water Program, County of Orange, County of Sacramento, County of Santa Barbara, SCVURPPP	
Pyrethroids Ecological Risk Mitigation Proposal for 23 Chemicals	✓		✓	BACWA SFBRWQCB NACWA City of Salinas	<p>Limited Success. Following significant efforts by CASQA and Partners in prior fiscal years, including meeting with new EPA pyrethroid chemical managers, and substantial feedback on the Preliminary Risk Assessment, EPA released the Risk Mitigation Proposal. EPA used CASQA comments to counter arguments by others suggesting that there is not a significant ecological risk. EPA acknowledged the existence of monitoring data that appears to conflict with modeled runoff exposure results.</p> <p>EPA virtually omitted urban runoff from its CWA compliance discussion. EPA's benefits assessment did not distinguish between outdoor impervious surface applications and other types of applications nor did it distinguish among the 22 pyrethroids and pyrethrins, which have very different environmental fates and toxicity, and thus very different potential for aquatic impacts. EPA did not concur with CASQA regarding the need for urban runoff mitigation. Proposed label language changes would continue (and in some cases exacerbate) conflicts between product labels and California's surface water protection regulations for pyrethroids. No resolution in CASQA's request for California-specific labels.</p>
Bifenthrin Proposed Interim Decision	✓			SFBRWQCB BACWA NACWA	<p>Pending. CASQA concluded that special measures to address bifenthrin are an important part of a pyrethroids mitigation strategy because, from the urban water quality standpoint, bifenthrin is far more problematic than other pyrethroid pesticides. CASQA continues to request that EPA terminate urban outdoor use of bifenthrin. Letter prepared this FY for 2020-2021 submittal.</p>

Regulatory Action or Concern	CASQA Efforts			Partner Support (Letters)	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
Pyrethroid Pesticides Cyfluthrin, Deltamethrin, Esfenvalerate, Permethrin, Phenothrin, Prallethrin, and Tau-fluvalinate - Proposed Interim Decision	✓			BACWA NACWA SFBRWQCB	Pending. Prior to the release of this Proposed Interim Decision, CASQA commented on the EPA's Ecological Risk Mitigation Proposal (above). CASQA continues to request that EPA's risk / benefit finding be revised to differentiate among the 23 pyrethroids and pyrethrins and among the various outdoor urban uses of the 23 chemicals. CASQA also requests that EPA's benefits assessment include urban runoff-related costs to municipalities. Letter prepared this FY for 2020-2021 submittal.
Fipronil Risk Assessment	✓			BACWA SFBRWQCB (anticipated) SWQCB (anticipated) NACWA (anticipated)	Pending. Letter prepared this FY for 2020-2021 submittal. CASQA requested that EPA included updated California monitoring data and improvements to the urban risk assessment modeling methods. Also recommended additional mitigation to prevent urban surface water quality degradation.
Neonicotinoid Insecticides (Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, and Thiamethoxam) Proposed Interim Decision [Request for Extension of Comment Period]				BACWA, SFBWQCB City of Elk Grove, City of Sacramento, Orange County, Marin County Stormwater PPP, Riverside County FCWCD, SCVURPPP	Success. Partners requested extension of comment period to provide adequate time for review in light of the complexity of the proposed decision and its timing during the winter rainy season, when member agencies take on substantial extra duties in association with rain events. EPA granted the extension.
Neonicotinoid Insecticides (Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, and Thiamethoxam) Proposed Interim Decision	✓			BACWA SFBRWQCB SWRCB	Pending. In the Proposed Interim Decision released this year, EPA proposed label improvements but did not include significant label language requests. EPA also did not respond to CASQA's request to identify major sources of imidacloprid in urban runoff and expand modeling to include runoff from all outdoor uses including impervious surfaces. CASQA followed up to address unresolved issues.
Endangered Species Risk Assessment Process for Biological Evaluations of	✓			BACWA SFBRWQCB NACWA	Partial Success. EPA acknowledged CASQA's comments and incorporated a significant request by CASQA- that they address pesticides that are applied on outdoor impervious surfaces in Biological Evaluations (BE). EPA also acknowledged CASQA's comment that Bes

Regulatory Action or Concern	CASQA Efforts			Partner Support (Letters)	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
Pesticides - Draft Revised Method					must include invertebrate toxicity data. EPA partially incorporated other comments from CASQA and ignored one of the comments.
Zinc registration review Final Interim Decision	✓			SFBRWQCB BACWA NACWA	Success! CASQA and its Partners sought that the zinc and zinc salts Registration Review decision follows the precedent for improved labels that was established by the decisions for other pool, spa, and fountain chemicals, such as lithium hypochlorite and copper. Further, for all swimming pool, spa, and hot tub products including those containing zinc and zinc salts, CASQA and Partners recommended that the “Environmental Hazards” label statements be applied on the basis of product use (end-use products vs technical grade and manufacturing use) rather than product size to avoid potential conflicting language on product labels. EPA fully incorporated both comments.
Methoprene Registration Review Work Plan				SFBRWQCB BACWA Sacramento County NACWA	Pending. Due to uses for mosquito control that are made directly to neglected swimming pools, catch basins, and other elements of stormwater drainage systems, CASQA Partners called for the collection of data to inform reasonable mitigation measures that would minimize environmental impacts while maintaining the public health benefits of methoprene applications. Asked EPA to consider label language for mitigation measures, including label language for uses with abandoned pools that is consistent with language across pool, spa, and hot tub chemicals that would indicate minimum post-application holding times or other objective criteria that local and state authorities could use in their approval process for discharges to their systems. Further, Partners asked EPA to re-evaluate the aquatic ecological risk associated with discharges of methoprene to aquatic environments by utilizing data for aquatic Dipteran insect species that are more sensitive than the species used for the aquatic risk evaluations in the Preliminary Work Plan.
Chlorine gas/swimming pools Draft Risk Assessment	✓			SFBRWQCB BACWA NACWA	Pending. The Proposed Interim Decision correctly identified potential impacts associated with emptying treated pools into storm drains and acknowledged that a requirement to contact local governments for direction prior to discharge would mitigate this risk (this reflects success of prior CASQA educational efforts related to other pool chemicals). Letters prepared this FY for 2020/2021 submittal supporting EPA’s

Regulatory Action or Concern	CASQA Efforts			Partner Support (Letters)	Outcomes and notes
	Letter(s)	Call(s) or emails	Mtg(s)		
					acknowledgement and recommending that the Registration Review decision follows the precedent for improved labels for pool, spa, hot tub, and fountain products that was established by the decisions for similar end use chemicals.
Halohydantoins/pools, fountains, spas – Draft Risk Assessment	✓			BACWA SFBRWQCB NACWA	Pending. The Draft Risk Assessment did not examine risks associated with discharges of swimming pool, spa, hot tub, and fountain water treated with halohydantoins. Letter prepared this FY for 2020-2021 submittal to request that the halohydantoins decision follow the precedent for improved labels for swimming pool, spa, hot tub, and fountain products that was established by the decisions for other antimicrobials with these uses.
Terbutylazine/fountains Draft Risk Assessment	✓			Sacramento County SFBRWQCB	Success. In January, CASQA Partners formally requested that language to address pool, spa, and fountain emptying be required to be placed on all such product labels. EPA acknowledged the importance of such communication and will be revising future label language on these products, which will require that the sewer/storm agency be notified prior to any discharge of terbutylazine. Follow-up letter prepared by CASQA this FY for 2020-2021 submittal.
Inorganic Halides (Sodium Bromide) Draft Risk Assessment				BACWA Sacramento County	Pending. Partners requested that the Registration Review decision follows the precedent for improved labels that was established by the decisions for other pool, spa, and fountain chemicals, such as lithium hypochlorite and copper. Such label language mitigates possible aquatic impacts from discharge of treated water while also providing consistency for label language across pool, spa, hot tub, and fountain chemicals.

2.2 LONG-TERM CHANGE IN THE PESTICIDES REGULATORY STRUCTURE

Since the mid-1990s, CASQA (and its predecessor organization the Storm Water Quality Task Force), have worked toward a future in which the pesticide regulatory structure at the state and federal level proactively restricts pesticide uses that have the potential to cause urban water quality problems. These efforts directly relate to Phase II MS4 PEAIIP Management Question 2.

Assessment Question 2. (Long term/Prevent future problems) – Do pesticides regulators have an effective system in place to exercise their regulatory authorities to prevent pesticide toxicity in urban water bodies?

Answer: Improvements in processes at EPA and especially at DPR have moved us closer to that future. Many of these improvements are linked to the persistent work of CASQA and the UP3 Partnership to educate regulators on how previous process deficiencies did not adequately address urban pesticide problems.

As detailed below, at the State level, significant progress has been made by DPR and the Water Boards in establishing a comprehensive statewide approach to utilizing pesticide regulatory authorities to prevent pesticide toxicity in urban water bodies. Overall, DPR has a system in place that is reasonably effective at addressing pesticide toxicity in urban water bodies, although improvement is needed to better coordinate this with the requirements of the Clean Water Act and NPDES MS4 permits. DPR and the Water Board, along with CASQA and other stakeholders, are working diligently to strengthen this system and to institutionalize it. This is primarily embodied in the State's effort to establish the UPA and the Management Agency Agreement (MAA) between DPR and the State Water Board.

At the Federal level, OPP has implemented some improvements in how it evaluates and responds to water quality problems associated with pesticides, but it does not do this reliably and does not have a system in place to ensure that this will happen consistently and adequately. Meanwhile, scientific studies are being conducted by USGS and the EPA's Office of Research and Development to better understand the complexities of pollution in urban stormwater (see inset at right).

National Urban Stormwater Study Included Many Priority 1 and 2 Pesticides

In 2019, USGS and EPA scientists published a major scientific paper examining pollutants in urban runoff, entitled "*Urban Stormwater: An Overlooked Pathway of Extensive Mixed Contaminants to Surface and Groundwaters in the United States.*" The authors indicate that this study "provides the most comprehensive representative snapshot of the urban stormwater-contaminant profile derived from randomly sampled sites and sampling days from across the U.S. to date." The study involved low-detection limit measurements of multiple pollutant classes (e.g., pesticides, pharmaceuticals, inorganics, PAHs, PCBs and other organochlorines) in undiluted urban runoff. Pesticides were the most frequently detected pollutant type. Further, organic chemical concentrations and loads were positively correlated with impervious surfaces and highly developed urban catchments.

The study involved 50 storm event urban runoff samples from 21 locations in 17 states, including 2 unnamed locations in California (the 2 largest watersheds sampled). Samples were collected primarily from highly urbanized watersheds, primarily from base-of-watershed discharge pipes and concrete-lined channels.

For current-use pesticides, these nationwide results were generally consistent with other scientific work published in the last decade (much of which is from California), indicating that current use pesticides like pyrethroids, fipronil (and its degradates), imidacloprid, and the fungicide carbendazim are common in urban runoff often at concentrations greater than aquatic life reference values. Multi-pesticide and multi-pollutant mixtures were the norm, raising questions about potential aquatic life effects from cumulative exposures.

While the study measured many Priority 1 and 2 pesticides on the Watch List, most other pesticides on the Watch List were omitted (due, in part, to the absence of standard or convenient low-detection limit analytical methods). For some current-use pesticides (like some pyrethroids and some fipronil degradates), reporting limits were higher than the lowest aquatic life reference values. Most pesticides samples were filtered, which affects reported concentrations of hydrophobic pesticides like pyrethroids that tend to be removed with the suspended solids filtered out of the sample; sediment was not analyzed.

Environ. Sci. Technol. 2019, 53, 17, 10070–10081. Publication Date: August 21, 2019. <https://pubs.acs.org/doi/10.1021/acs.est.9b02867>

Although more effective regulation of pesticides by EPA is still an important goal for CASQA,²⁰ due to the current regulatory climate at federal agencies, CASQA does not expect OPP to be very responsive to requests for additional improvements. Specific examples include the current administration's orders for a blanket reduction in regulations, chronic under-staffing at OPP, and lack of accessibility to OPP staff to share scientific information and stormwater expertise.

As a result, CASQA has decided for the time being to limit its efforts to affect long-term systemic change by EPA and other federal agencies. Instead, CASQA has focused more on solidifying advances made at the state level, which will leverage the considerable authority held by the State of California for regulating the use of pesticides.

2.2.1 Focus on MAA Between DPR and State Water Board

In 1997, just as pesticides were first discovered to be an important pollutant in urban waterways, DPR and the State Water Board adopted their first formal agreement to collaborate to address pesticides water pollution. That agreement focused on agricultural areas; the processes it envisioned did not work well in the urban context. CASQA (and its predecessor organization the Storm Water Quality Task Force) worked with DPR and the Water Boards for the next 20 years toward establishing pesticides water quality protection systems that would work in the urban context. During this time, DPR substantially updated its science-based pesticide registration procedures to include a "surface water protection program" review process, it initiated an urban watershed monitoring program, and it developed approaches to implementing mitigation measures addressing urban water pollution, as evidenced by its actions on pyrethroids and fipronil. The Water Boards engaged with DPR, providing scientific and regulatory information, receiving and using information from DPR to inform design of its regulatory programs (particularly TMDLs), and cooperating in monitoring programs. In mid-2019, DPR and the State Water Board received approval to sign a major update to their formal MAA that memorializes their existing systems and growing cooperation and lays out the steps they are taking toward a "unified and cooperative program to protect water quality related to the use of pesticides." The two agencies agree "to work cooperatively to address the discharge of pesticides that may cause or contribute to surface water or groundwater pollution, including surface water toxicity."

For example, DPR will evaluate surface water quality risks and consider these risks when making registration decisions; promote environmentally sound pest management; and respond to water quality concerns that pose significant adverse effects to aquatic organisms. Meanwhile, Water Boards will confer with DPR when developing regulatory programs related to pesticides; ensure waters are monitored (in coordination with DPR's monitoring and including permittee and State Water Board's own monitoring participation); and require and support use of best management practices relating to pesticides (structural management practices are not intended to be required in urban areas).

The Implementation Plan that accompanies the MAA describes opportunities for coordination and mutual enrichment (including cross-training), expectations for both staff and executive level communication (including an annual management-level meeting between the agencies), and current agency organization and interactions. Excerpts from the Implementation Plan:

"In the urban environment, pesticides are transported by the municipal wastewater collection system and the municipal separate storm sewer system (MS4). PMPs [pesticides-specific management practices] focus primarily on prevention through responsible use according to the pesticide label and DPR regulations and as a part of a holistic IPM [Integrated Pest Management] strategy. DPR conducts education and outreach efforts to ensure professional applicators are up to date on regulatory actions and label changes. Wastewater treatment plants and multi-benefit storm water treatment practices such as low impact development, runoff infiltration, constructed wetlands, and restoration of riparian buffers around waterways can provide some reductions. However, they are not designed for, nor implemented to address, complex mixtures of pesticides and the effectiveness of these practices to remove various pesticides from these systems is not well understood.

²⁰ Long-term regulatory goals at the state and federal level are described in detail in Section 1.2.

DPR will work with the Water Boards to inform pesticide users on urban PMPs. The Water Boards, through their storm water permits, will continue to require PMPs from storm water permittees. Permittees must also include, as appropriate, education and outreach to inform residential and commercial pesticide users on responsible pesticide use and encourage municipal storm water permittees to provide local expertise into DPR's pesticide regulatory process.

The Water Boards and DPR will collaborate to assess the impacts of pesticides in the urban environment through collective and comprehensive monitoring efforts, which optimize the use of monitoring resources of Water Boards, dischargers, and DPR."

2.2.2 Focus on California's UPA

At the urging of CASQA, in 2014 the State Water Board made a strategically important decision to institutionalize its commitment to work closely with DPR and EPA to utilize pesticide regulatory authority as the primary mechanism for preventing and responding to impairments of receiving waters linked to current use pesticides in urban runoff. To accomplish this, it established an urban pesticides reduction project (now titled the Urban Pesticides Amendments or UPA) as a top priority project under the comprehensive stormwater strategy it adopted in December 2015, known as "Strategy to Optimize Resource Management of Storm Water" or STORMS.²¹ In 2018/19, the State Water Board continued working towards developing the Urban Pesticides Amendments which will be changes to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries, and the Water Quality Control Plan for Ocean Waters of California. It is important to note that a critical factor in the State Water Board's decision to move in this direction was DPR's demonstrated commitment and significant progress in addressing urban water quality issues caused by pesticides.²² A 2020 paper co-authored by Dr. Kelly Moran and staff of DPR, State Water Board, and UC Davis, describes many of the key elements of this progress.²³ The abstract for that paper is presented on the following page.



CASQA representatives have been participating actively in the development of the Urban Pesticide Amendments since their inception, as members of the projects Core Team and various work groups, to ensure that they are consistent with CASQA's vision for pesticide control.²⁴ The key elements that we anticipate being in the amendments are listed below.

- 💧 Element 1: Establishment of a framework for the Water Boards to work with DPR and U.S. EPA to utilize pesticide regulatory authority as the primary means for addressing pesticides in urban runoff.
- 💧 Element 2: Adopt a program of implementation addressing urban pesticides water pollution that serves as a TMDL alternative and integrates a feasible compliance pathway for MS4s.

²¹ STORMS' overall mission is to "lead the evolution of storm water management in California by advancing the perspective that storm water is a valuable resource, supporting policies for collaborative watershed-level storm water management and pollution prevention, removing obstacles to funding, developing resources, and integrating regulatory and non-regulatory interests." (http://www.waterboards.ca.gov/water_issues/programs/stormwater/storms/)

²² As reported in previous CASQA Pesticide Subcommittee Annual Reports, DPR's accomplishments include improved modeling, active ingredient screening for urban water quality issues, monitoring, and regulatory mitigation of pyrethroids and fipronil.

²³ Moran, et al., 2020. Water Quality Impairments Due to Aquatic Life Pesticide Toxicity: Prevention and Mitigation in California, USA. Environmental Toxicology and Chemistry—Volume 39, Number 5—pp. 953–966, 2020

²⁴ These goals have been adapted from the CASQA document, "End Goals for Pesticide Regulatory Activities," 2014. Goal 3, above, is directly tied to Goals 2, 4, and 5 of that document.



Water Quality Impairments Due to Aquatic Life Pesticide Toxicity: Prevention and Mitigation in California, USA

Kelly Moran, Brian Anderson, Bryn Phillips, Yuzhou Luo, Nan Singhasemanon, Richard Breuer, Dawit Tadesse, *Environ Toxicol Chem* 2020;39:953–966.

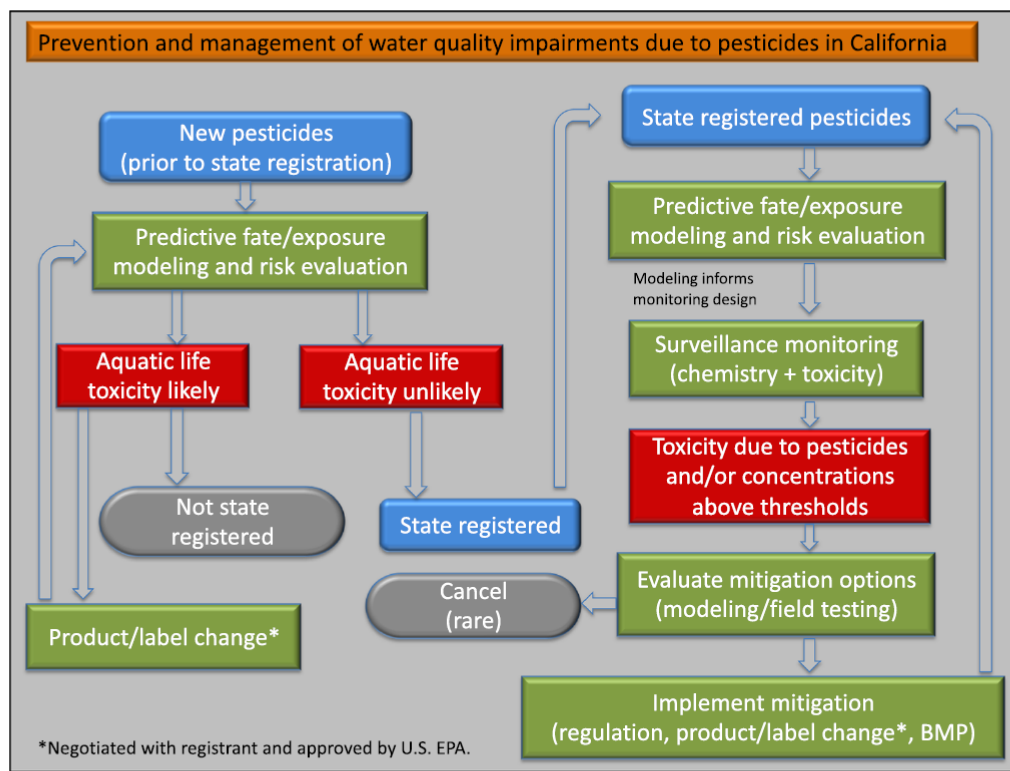
<https://setac.onlinelibrary.wiley.com/doi/abs/10.1002/etc.4699>.

This paper published in 2020 describes key elements of the current State water quality effort.

Abstract

The management of pesticides to protect water quality remains a significant global challenge. Historically, despite regulatory frameworks intended to prevent, minimize, and manage off-site movement of pesticides, multiple generations of pesticide active ingredients have created a seemingly unending cycle of pesticide water pollution in both agricultural and urban watersheds. In California, the most populous and most agricultural US state, pesticide and water quality

regulators realized in the 1990s that working independently of each other was not an effective approach to address pesticide water pollution. Over the years, these California agencies have developed a joint vision and have continued to develop a unified approach that has the potential to minimize pesticide risks to aquatic life through a combination of prevention, monitoring, and management actions, while maintaining pesticide availability for effective pest control. Key elements of the current California pesticide/water quality effort include: 1) pesticide and toxicity monitoring, coupled with watershed modeling, to maximize information obtained from monitoring; 2) predictive fate and exposure modeling to identify potential risks to aquatic life for new pesticide products when used as allowed by the label or to identify effective mitigation measures; and 3) management approaches tailored to the different pesticide uses, discharge sources, physical environments, and regulatory environments that exist for agricultural runoff, urban runoff, and municipal wastewater. Lessons from this effort may inform pesticide management elsewhere in the world as well as other chemical regulatory programs, such as the recently reformed US Toxic Substances Control Act and California's Safer Consumer Products regulatory program. © 2020 SETAC



- 💧 Element 3: MS4 Monitoring program designed to coordinate with existing DPR and State Water Board pesticides and toxicity monitoring to support effective implementation of Elements 1 and 2.
- 💧 Element 4: Requirements for MS4s to support Elements 1 and 3 by contributing expertise on how pollutants present in urban environments enter and behave in urban runoff and water bodies.
- 💧 Element 5: Other actions that can reasonably be implemented by MS4s, such as IPM outreach, in support of pesticides reductions.

CASQA supports the State Water Board's stated goal of implementing the UPA "as an alternative to TMDL development to address pesticide and pesticide-related toxicity impairments in individual water bodies." Achievement of this goal would provide substantial savings of state and MS4 agency resources as compared to establishment of multiple TMDLs throughout the state.

Elements 1-4 are consistent with CASQA Vision Action 1.3. Water Board staff have indicated their intent that the Urban Pesticides Amendments, as shown in Element 5 should also establish a consistent set of "*minimum pesticides source control measures for MS4 dischargers.*"

CASQA representatives have worked with the Water Boards to ensure that such requirements are reasonable and consistent with similar measures already in place in some regions. At this time, the list of potential minimum measures includes use of IPM, education of and outreach to residents and professional pesticide applicators, providing urban runoff scientific and management expertise to support pesticide regulatory processes, non-stormwater discharge prohibitions, and pesticide and toxicity monitoring.

CASQA supports the stated goal to "create a comprehensive, coordinated statewide monitoring framework for pesticides and toxicity in urban runoff and receiving water that improves resource efficiency, usefulness of data, and coordination of data collection to support management decisions."²⁵ A well-designed and managed monitoring framework that is properly representative of urban areas can simultaneously provide more useful information and improve the utilization of resources by eliminating unnecessary MS4 monitoring requirements that do not contribute to effective management of pesticides and pesticide-caused toxicity.

Monitoring. In the previous FY, agreement was reached regarding decision-making channels and membership for the UPCMP. CASQA is an active participant in the UPCMP and recruited members to serve on both the Steering Committee and Technical Committee. These committees have been convened by the Aquatic Science Center using grant funding from the State Water Board. The Steering Committee and Technical Committee are tasked with establishing the initial framework of the monitoring program, including a work plan for its first year of operation. It is intended to have the work plan in place upon adoption of the UPA. However, progress in this direction has been slowed this year by changes in staffing at the State Water Board, and by complications caused by COVID-19. One subsequent meeting of the Technical Group was held in June.

Key joint activities for the UPCMP this FY included:

- 💧 Initial meeting of UPCMP Steering committee, including 3 MS4 representatives recruited by CASQA. Each of these representatives are MS4 staff or consultants funded by CASQA municipal members²⁶.
- 💧 Initial meeting of UPCMP Technical Committee, including 3 MS4 representatives recruited by CASQA. Each of these representatives are MS4 staff or consultants funded by CASQA municipal members²⁷.

²⁵ Informational Document, CEQA Public Scoping Meeting, State Water Resources Control Board, January 25, 2017

²⁶ MS4 representatives on the Steering Committee are from the Alameda Countywide Clean Water Program, Orange County, and Sacramento County.

²⁷ MS4 representatives on the Technical Group are from the Santa Clara Valley Urban Runoff Pollution Prevention Program, Orange County, and Sacramento County (jointly funded by the Sacramento Stormwater Quality Partnership).

Technical Support. CASQA continues to provide technical support to the Water Boards on numerous crucial and highly detailed items related to the UPA, Staff Report, CEQA Document, monitoring program, model permit language, and the relationship of these to the MAA. During June, CASQA organized a meeting of DPR, Water Board, and CASQA representatives on July 24th for DPR to provide detailed information to senior Water Board management on DPR's capacity and progress for addressing urban pesticide issues.

MS4 Input. CASQA Pesticides Subcommittee continued briefings for the MS4 community to explain, gather input, and obtain support for the Urban Pesticide Amendments in advance of their public release for comment. Briefings were provided to representatives of the following MS4 groups:

- Los Angeles County Permittee Group
- Central Valley MS4 Coordinating Committee
- Sacramento Stormwater Quality Partnership
- CASQA Watershed Management and Impaired Waterbodies Subcommittee
- CASQA Policy and Permitting Subcommittee
- CASQA Science and Monitoring Subcommittee
- Sonoma County MS4 Permittee Group

2.2.3 CASQA Participation in Other State Efforts

As presented in Table 4, CASQA has been actively involved with various State agencies and advisory groups that affect pesticide use and pest management in urban areas.

Table 4. Participation in Other State Efforts to Support CASQA's Goals

Agency or Conference	Latest Outcomes
DPR's Pest Management Advisory Committee (PMAC)	<p>Participation on the PMAC has resulted in expanded focus by DPR on urban pest management and water quality issues and generated funding for urban IPM programs. This year the PMAC recommended funding for two IPM research projects that would address pesticides in urban runoff, and one project that would address copper antifouling pesticide impacts of water bodies that are receiving waters of interest to many MS4 agencies. The amount of funding recommended was approximately \$570,000. The projects are listed below.</p> <ul style="list-style-type: none"> • IPM for local Sacramento farmers. [addresses commercial urban farms with high pesticide uses] • Training for pest management professionals. [upgraded facilities and mass media channels for statewide structural pest control licensees] • Training for hull cleaners and boaters. [addresses copper pollution in marinas]
California Structural Pest Control Board (SPCB)	<p>A PSC member is an appointed member of the SPCB. The SPCB recognizes the potential for excessive pesticide application to impact water quality. The SPCB is in the process of adopting regulations to increase continuing education hours required in the IPM category. Finalization of these regulations has been slowed due to the need for California to reconcile its structural licensing requirements with newly adopted Federal regulations for this industry.</p> <p>Five proposals were selected and collectively awarded \$1.02 million to be funded by the SPCB Research Fund. Progress reports were provided at the February 2020 board meeting for five research projects funded in the previous FY by the SPCB. The research topics are listed below, and detailed project updates are available online at https://www.pestboard.ca.gov/about/agenda/20200312_materials.pdf</p> <ul style="list-style-type: none"> • "Diet and Colony Structure of Two Emerging Invasive Pest Ants" • "Investigation of Rodenticide Pathways in an Urban System Through the Use of Isotopically Labelled Bait" • "Evaluation of bait station system efficacy for reduced-risk subterranean termite management in California" • "Development and Evaluation of Baiting Strategies for Control of Pest Yellowjackets in California" • "Improving Urban Pest Ants Management by Low-Impact IPM Strategies" <p>The SPCB is in the process of allocating funding for the 2021 FY.</p>

Section 3. CASQA's Approach Looking Ahead

At any given time, EPA and DPR may be in the process of evaluating and registering various pesticides for urban use. CASQA will continue to track and engage in EPA and DPR activities, with a focus on top priority active ingredients (as identified in the annual Pesticide Watch List) and sharing relevant urban runoff information and CASQA's water-quality specific expertise with pesticides regulators. Key documents to be reviewed will include risk assessments and risk management proposals with an eye toward ensuring that pesticide regulators have and consider accurate information on relevant factors in urban areas such as pesticide use patterns, urban pollutant transport mechanisms, and receiving water conditions. CASQA strives to ensure that pesticide regulators have access to relevant information such as monitoring data, water quality regulatory requirements, and urban runoff agency compliance liabilities and cost information. As necessary, CASQA will continue to recommend changes in an individual pesticide's allowable uses or use instructions, request consideration of impacts on water bodies receiving urban runoff, or ask that regulators fill critical data gaps by obtaining more data from manufacturers. As resources allow and circumstances warrant, CASQA will collaborate with wastewater organizations (such as BACWA), other water quality stakeholders, and the Water Boards in commenting on EPA and DPR actions.

In the coming year, CASQA will continue to address near-term pesticide concerns and seek long-term regulatory change. Although changes at the federal level are important for fully achieving CASQA's goal of protecting water quality through the effective use of pesticide regulations, until there is a more favorable situation at that level, we will continue to focus our efforts on solidifying progress at the state level. In FY 2020-2021, we will continue engagement on specific regulatory actions for priority pesticides at the federal level, while continuing our strategic focus on supporting State adoption of the UPA. CASQA's current priority activities are as follows:

(1) Continue collaboration with DPR to address near-term regulatory concerns, while seeking OPP and OW actions to reduce inconsistencies:

- 💧 Ensure DPR action on fipronil water pollution is completed, including effective professional user education about restrictions on its outdoor urban use.
- 💧 Ensure DPR enforces mitigation measures for pyrethroids and fipronil, and adopts additional measures as necessary.
- 💧 Ensure the state continues to conduct surveillance monitoring to evaluate pyrethroids and fipronil mitigation effectiveness and to evaluate occurrence of new threats like imidacloprid and other neonicotinoid insecticides.
- 💧 Continue to encourage EPA to complete scientific groundwork and to identify and implement pyrethroids, fipronil, malathion, and imidacloprid mitigation measures, recognizing that it is likely that necessary mitigation cannot readily be implemented entirely by DPR.

(2) Seek long-term changes in the pesticide regulatory structure:

- 💧 Leverage our success at the state level and continue to be a key stakeholder in the STORMS project to adopt the statewide UPA. Through this process, CASQA will work with other stakeholders to implement the planned restructuring of California's urban surface water pesticides monitoring to increase its effectiveness and improve coordination.
- 💧 Seek procedure changes such that DPR continues to refine its registration procedures to address remaining gaps in water quality protection.
- 💧 Seek increased transparency of DPR regulatory activities, including timely access to scientific evaluation reports that are the basis of registration decisions.

CASQA will continue to seek opportunities to coordinate on high priority regulatory actions, with the Water Boards and other water quality stakeholders such as POTWs and non-profits, to take advantage of efficiencies, increase effectiveness, and ensure that the water quality community has a consistent message. Table 5 presents CASQA's activities and level of engagement anticipated for FY 2020-2021; CASQA will conduct these activities as priorities indicate and resources allow. Table 6 summarizes upcoming regulatory action items that are likely to proceed and may require CASQA attention in FY 2020-2021.

Table 5. CASQA Pesticide Subcommittee Activities

Activity		Purpose
Regulatory Tracking	Track Federal Register notices	Identify regulatory actions for high priority active ingredients that may require review.
	Track DPR notices of registration applications and decisions	Identify pesticides meriting surface water review that are not within DPR's automatic routing procedures, identify gaps or potential urban runoff-related problems with current DPR evaluation or registration plans other regulations, procedures & policies.
	Track activities at the Water Boards	Identify opportunities for improvements in TMDLs, Basin Plan Amendments, and permits.
	Review regulatory actions, guidance documents, and work plans	Identify potential urban runoff-related problems with current EPA evaluation or registration plans, other regulations, procedures, and policies.
Regulatory Communications	Briefing phone calls, informal in-person meetings, teleconference meetings, and emails with EPA and DPR	Information sharing about immediate issues or ongoing efforts; educate EPA and DPR about issues confronting water quality community. Provide early communication on upcoming proceedings that help reduce the need for time-intensive letters.
	Convene formal meetings, write letters and track responses to letters	Ensure current pesticide evaluation or registration process accurately addresses urban runoff and urban pesticide use and management contexts and take advantage of opportunities to formally provide information suggest more robust approaches to that could be used in future regulatory process. Request and maintain communication on mitigation actions addressing highest priority pesticides.
Advisory	Serve on EPA, DPR, and Water Board policy and scientific advisory committees	Provide information and identify data needs and collaboration opportunities toward development of constructive approaches for managing pesticides.
Educational	Presentations to and informal discussions with EPA, DPR, Water Board, CASQA members,	Educate EPA, DPR, Water Board, and CASQA members about the urban runoff-related shortcomings of existing pesticide regulatory process, educational efforts to support process improvements, and report on achievements. Encourage research and monitoring programs to address urban runoff data needs and priorities. Stimulate academic, government, or private development of analytical and toxicity identification methods to address anticipated urban runoff monitoring needs. Inform development of new pesticides by manufacturers and selection of pesticides by professional users.
	Developing and delivering public testimony	Educate Water Board members about the problems with existing pesticide regulatory process, encourage change, and report on achievements.

Activity	Purpose	
Monitoring and Science	Update Pesticide Watch List based on new scientific and regulatory information	The Pesticide Watch List (Table 2) serves as a management tool to prioritize and track pesticides used outdoors in urban areas.
	Data analysis of DPR/SWAMP/USGS/MS4 monitoring, pesticide use data, and information from scientific literature	Summarize data to educate CASQA members and water quality community, Water Boards, DPR, and EPA.
Reporting	Prepare Monthly Action Plans	Coordinate CASQA's regulatory actions with Partners
	Prepare PSC Annual Report to describe the year's status and progress, provide detail on stakeholder actions, and the context of prior actions as well as anticipated end goal of these activities.	Provide CASQA's members with focused information on its efforts to prevent pesticide pollution in urban waterways. The document serves annual compliance submittal for both Phase I and Phase II MS4s. It may also be used as an element of PEAIps and future effectiveness assessment annual reporting.

Table 6. Anticipated Opportunities for Pesticides Regulatory Engagement in 2020-2021**EPA Pesticide Registration Review (15-year cycle)**

Environmental Risk Assessments

- Priority 2-4 pesticides: Busan 77, Chlorothalonil, Irgarol, Diuron, Dichlorvos (DDVP), Isothiazolinones (DCOIT, BIT, BBIT, MIT, OIT). o-Phenyl phenol, Peroxy Compounds (includes Peroxyoctanoic Acid; Sodium Percarbonate), Propiconazole, Tebuconazole, Ziram; others (schedule unknown)

Proposed Interim Decisions

- Priority 1 pesticides: Fipronil, Pyrethroids: Cyhalothrins, Cypermethrins, Allethrin, Etofenprox, Metofluthrin
- Priority 2-4 pesticides: Carbaryl, Chromated Arsenicals, Creosote, Dichromic acid, DBNPA, Dithiopyr, (phenoxy herbicide), MCPA, MGK-264 (synergist), Methomyl Novaluron, Oxyfluorfen, Pentachlorophenol (Pentachlorophenol, Dioxins), Piperonyl butoxide (PBO) (pyrethroids synergist), Pyrethrins, Simazine, Sodium bromide, Thiophanate methyl, Triclopyr; others (schedule unknown)

Other EPA-related Items

- U.S. EPA “Increasing Consistency and Transparency in Considering Costs and Benefits in the Rulemaking Process” affects how the U.S. EPA uses cost and benefit analysis in setting pollution standards. Rule proposal was expected in 5/19.
- Proposed rule to eliminate some OPP Federal Register Notices (was anticipated September 2018 according to U.S. EPA semi-annual regulatory agenda)
- U.S. EPA Update to Guidelines for Deriving Aquatic Life Water Quality Criteria. Draft scoping document external peer review is next step. Seeking OPP engagement.

DPR New Pesticide Registration Decisions

- Proposed new urban pyrethroids (momfluorothrin, alpha-cypermethrin, phenothrin and transfluthrin products)
- Proposed expansion of bifenthrin use in non-residential urban locations
- Proposed new fipronil products: fipronil-bifenthrin landscaping product, termite product, product for yellow jackets
- Proposed new aerated indoxacarb powder
- Proposed ant and termite product containing the proposed new pesticide broflanilide.
- Others (schedule unknown)

Other DPR-related Items

- Registration Application Surface Water Reviews – continue to follow up on communications requesting review of all storm drain products and outdoor antimicrobials

Water Boards

- State Water Board Provisions for Toxicity Assessment and Control, which include statewide numeric water quality objectives and implementation program
- STORMS Urban Pesticides Amendments
- Pesticides 303(d) listings
- Pesticide TMDL implementation requirements for permittees

Appendix

Regulatory Participation Outcomes and Effectiveness Assessment Summary Tables

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Abemectin (September 2019)

Endangered Species Act Outcomes Evaluation (June 2020)

Imidacloprid (April 2020)

Neonics Extension (April 2020)

Pyrethroids (January 2020)

Pyrethroids Extension (April 2020)

Pyrethroids Update (June 2020)

Terbutylazine (May 2020)

Zinc and Salts (September 2019 and April 2020)

Pesticide: Abamectin; Docket: EPA-HQ-OPP-2013-0360
Use: Insecticide used for ants, mites, and spiders (among other uses).
Why we care: Highly toxic to aquatic invertebrates. Outdoor uses in urban environments have high potential impact MS4 and surface waters.
Actions taken: CASQA has been tracking this pesticide since 2013.
Status: EPA released the Final Interim Registration Review Decision in August 2019.

Next steps: ESA Consultation is required but unlikely to begin before 2022.
Recommendation: No action is needed at this time. Keep on tracking list.

From EPA's Final Interim Decision:	Response from CASQA's Perspective:
<p>EPA is adding a standard Runoff Prevention Advisory Statement to the label:</p> <p><i>"RUNOFF PREVENTION To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems."</i></p>	<p>The standard runoff prevention language that EPA has proposed could be further strengthened. For example, CASQA typically recommends not allowing pesticide use if rain is predicted in the next 48 hours (instead of 24 hours as is proposed by EPA).</p> <p>We should consider impact of "rinsing application over the treated area" which would be highly problematic on impervious surfaces hydraulically connected to MS4 and surface waters.</p>
<p>From EPA's response to comments in the "Abamectin. Response to Comments Regarding HED's [EPA OPP Health Effects Division] Human Health Risk Assessment in Support of Registration Review, it appears that new crack and crevice usages are being evaluated through a different process: HED notes that the human health draft risk assessment also included a separate new use action for a proposed use on crack and crevice and spot treatment for abamectin. Mitigation measures associated with the proposed new use are separate from the registration review action and are being addressed by the registrant petitioning for that particular use pattern.</p>	<p>To better assess the risks from a pesticide, EPA should evaluate pesticide uses in a comprehensive manner that includes the use patterns and mitigation measures proposed and/or approved after the initiation of Registration Review.</p>

Action:	Method for National Level Endangered Species Risk Assessment Process for Biological Evaluations of Pesticides; Docket: EPA–HQ–OPP–2019–0185
Use:	Defines procedures for assessing pesticides risks to endangered species
Why we care:	EPA intends to use these procedures to replace its current ecological risk assessment procedures
Actions taken:	CASQA submitted a comment letter in 2019. CASQA’s comments were echoed by UP3 partners including BACWA, NACWA, the SF Bay Water Board, Xerces Society, Northwest Center for Alternatives to Pesticides (and 8 other groups) and Center for Biological Diversity. DPR made comments similar to CASQA’s.
Status:	EPA released its revised method in March 2020
Next steps:	EPA will be using the revised procedures to conduct ecological risk assessments for pesticides in its ESA pilot program.
Recommendation:	Review ecological risk assessments for ESA pilot pesticides and comment on procedural shortcomings as warranted.

CASQA 08/15/2019 Comments to EPA	EPA Response	Did EPA incorporate CASQA’s comment?
Pesticides Are Applied on Outdoor Impervious Surfaces and Must Be Addressed in BEs	“EPA has corrected its discussion of applications to impervious surfaces in the Revised Method. The discussion was not meant to indicate that EPA would not evaluate applications to impervious surfaces. Rather, it was intended to generate a footprint for developed areas that was more realistic. In the Revised Method, for applications that are not intended to be made directly to impervious surfaces (e.g., to lawns), EPA will make a treated area assumption for the developed land cover class based on the percent of a typical lot that is not represented by impervious surfaces (e.g., footprints of houses, driveways are assumed to not be treated). In these cases, EPA acknowledges that overspray to impervious surfaces can occur, and, as such, the treated area will include a small percent of the impervious surface. For applications designed for impervious surfaces, EPA will model the application using the impervious PWC scenario, along with appropriate adjustments to account for the area treated.” Response to Public Comments Received on Proposed Revised Method for National Level Endangered Species Risk Assessments for Biological Evaluations of Conventional Pesticides, p. 41.	Yes.
Clean Water Act Compliance Assessment Must Be an Integral Part of BEs and the Pesticide Endangered Species Act Consultation Process	“Office of Pesticide Programs and Office of Water work together on water issues to address issues under each of their statutes.” Response to Public Comments Received on Proposed Revised Method for National Level Endangered Species Risk Assessments for Biological Evaluations of Conventional Pesticides, p. 50.	No.
BEs must evaluate all uses of a pesticide that EPA is approving – not just uses that have occurred historically. When EPA reviews a pesticide, it licenses each individual use of that pesticide as described on	“EPA will consider all uses allowed on product labels for the assessed pesticide that are registered under Sections 3, 24(c), and 18 of the Federal Insecticide Fungicide Rodenticide Act (FIFRA) when developing BEs. As stated above, the proposed Revised Method included usage data in the derivation of the Action Area. EPA has changed the	Partially. EPA will consider all legal uses in its first phase, but the actual risk assessment

<p>product labels. If EPA restricts its analysis only to uses that have occurred historically, or to select geographic areas, EPA is effectively licensing uses that it is not evaluating, which is inconsistent with the ESA. This would be the effect of the usage data methodology proposal.</p>	<p>Revised Method so that usage data are no longer incorporated into Step 1. Therefore, all registered uses, even those without demonstrated usage are included in Step 1, definition of the Action Area.</p> <p>EPA incorporates usage data into Step 2 of the Revised Method. When usage data (i.e., PCT [Percent Crop Treated], average rate, application timings, etc...) are incorporated into the risk assessment, the best available, scientifically valid data are used. EPA believes that data on pesticide usage represent critical information for determining whether an individual of a listed species is likely to be exposed and adversely impacted, which is the goal of Step 2.” Response to Public Comments Received on Proposed Revised Method for National Level Endangered Species Risk Assessments for Biological Evaluations of Conventional Pesticides, p. 14.</p>	<p>will leave out any allowed pesticide uses for which there are no usage data.</p>
<p>BEs must use chronic invertebrate toxicity data. The proposal to use only lethal toxicity (LC50) data for aquatic invertebrates deviates from the CWA regulation of aquatic ecosystems to protect food supplies for endangered species.</p>	<p>“EPA will consider effects to mortality, growth or reproduction and other sublethal endpoints linked to survival or reproduction of taxa relevant to a listed species’ prey, pollination, habitat and/or dispersal.” Response to Public Comments Received on Proposed Revised Method for National Level Endangered Species Risk Assessments for Biological Evaluations of Conventional Pesticides, p. 50.</p>	<p>Yes.</p>
<p>Urban pesticide use estimates could be greatly improved with use of reported urban use and sales data collected annually by California Department of Pesticide Regulation (CDPR). Each year, CDPR mandates reporting of pesticide product-specific sales and all professional pesticide use (including urban use). These data provide the quantity of active ingredients. The sales data are collected for every product brand-label combination. Reported use and total annual sales data are freely available and readily accessed from CDPR’s online database at https://www.cdpr.ca.gov/dprdatabase.htm While CDPR considers its product-specific sales data as confidential, these data can be obtained upon request by EPA and consolidated (e.g., by use category) before publishing in risk assessments.</p>	<p>“EPA considers California Pesticide Use Reporting data in assessments, as appropriate. EPA agrees with CBD [Center for Biological Diversity] that pesticide sales data, including those available from California Department of Pesticide Regulation, are of limited use in characterizing the timing and location of pesticide usage. Pesticide sales data can provide some information regarding the scale of usage for a pesticide. For example, historical sales for an established pesticide may be useful in ground truthing the reasonableness of estimated usage that rely on multiple conservative assumptions. One example could be comparing sales data to usage modeled for a year and finding that the single year modelled exceeds the 20-year sales total for the AI. Such an outcome suggests that the model is highly conservative overall. Of course, at a local level, the model may be less conservative than indicated by the disparity between the sales and modelled usage estimates.” Response to Public Comments Received on Proposed Revised Method for National Level Endangered Species Risk Assessments for Biological Evaluations of Conventional Pesticides, p. 11.</p>	<p>Partially.</p>

Pesticide: Imidacloprid; Docket: EPA-HQ-OPP-2008-0844
Use: Outdoor treatments (impervious and pervious surfaces), impregnated materials (wood, siding, etc.), pet treatments, etc.
Why we care: Highly toxic to aquatic invertebrates. Monitoring data exceeds aquatic benchmark in many areas of California. Sales data show that use is increasing.
Actions taken: CASQA submitted a comment letter in 2017 on the Preliminary Aquatic Risk Assessment.
Status: EPA released the Proposed Interim Registration Review Decision (PID) per Fed. Reg. notice Feb. 3, 2020. Comments are due May 4, 2020.

Next steps: EPA will analyze comments and issue a Final Interim Decision.
Recommendation: Send comment letter to EPA on the Proposed Interim Decision to address unresolved issues and concerns.

CASQA Members comments to EPA:	EPA Response:	Did EPA incorporate member comments?
CASQA Concur with EPA's Finding of Significant Risk.	As in the Preliminary Aquatic Risk Assessment. The EPA found significant risk to aquatic life in the Proposed Interim Decision.	Yes.
<p>CASQA Requests EPA Identify Major Sources of Imidacloprid in Urban Runoff. CASQA noted that EPA's PARA model omits most outdoor urban imidacloprid uses. CASQA Suggested Refinements to Imidacloprid Preliminary Risk Assessment:</p> <ul style="list-style-type: none"> • Include modeling of runoff from impervious surfaces for both residential and commercial models. • Evaluate and then model the runoff from all permitted outdoor uses of imidacloprid • Include leaching of impregnated materials in the model. • Perform an urban-specific analysis, including analysis of monitoring results specific to urban areas. 	<p>"EFED's risk assessment indicated, using modeling and monitoring data, that neonicotinoids can potentially enter surface water and groundwater and affect aquatic invertebrates. Although EFED did not explicitly model urban runoff sources, EFED believes the concentrations would not exceed those modeled via agricultural sources. While field and monitoring data provide supporting evidence that neonicotinoids are present in surface waters, supporting metadata for the sampling (i.e., sampling frequency, vicinity of applications to monitoring sites, timing of sample collection relative to timing of applications, etc.) are not available, precluding the quantitative use of monitoring data. While monitoring data from habitats not designed to harbor aquatic organisms may not be directly relevant for ecological risk assessment, they may be indicative of sources that may discharge into aquatic organism habitats. Likewise, while monitoring data from other countries may not be indicative of uses or</p>	<p>No. Although EPA acknowledged that there is a pathway to the storm drain, they did not respond to CASQA's request to identify major sources of imidacloprid in urban runoff or improve modeling of sources.</p>

	products in the United States, they provide a line of evidence that neonicotinoids can contaminate water sources." (PID p.14)	
CASQA Recommends Further Evaluation of Product Labels and Use Restrictions. (see specific requests below)	Although EPA made some small improvements to imidacloprid labels, they did not incorporate the majority of CASQA's label requests.	Partially.
1) Pre-construction termiticide label improvements: "...we request that EPA add a requirement that after a pre-construction termiticide treatment the applicator must post signage identifying sites that have been treated, stating the need to maintain the plastic cover until the foundation is poured, and to manage in accordance with water quality and hazardous waste laws any water that collects in the treated area before the foundation is poured. Such a requirement would bridge a gap between the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and Clean Water Act water quality control programs associated with the NPDES stormwater construction permits."	EPA did not respond to this comment.	No.
2) Require that no applications be made when rainfall is forecast within 48 hours.	EPA partially incorporated CASQA's suggested idea, but only for 24 hours of forecasted rainfall and only for spray (not granular) products.	Partially.
3) Reduce size of perimeter treatment bands around structures for treating for termites and other structural pests to the smallest treated area that will achieve target pest control. Prohibit application on impervious surfaces.	EPA reduced the perimeter treatment area to up to seven feet (on permeable surfaces), up to two feet up a structure, and up to one inch on pervious surfaces.	Partially. A reduced treatment band is an improvement, but the suggested treatment bands do not appear to be based on scientific study. Use on impervious surfaces is still allowed.
4) Prohibit application of granular products to any impervious (non-soil or unvegetated) surface and prohibit application to any area where the product may contact any surface water, storm drain, or urban runoff conveyance system (e.g., gutter).	EPA did not respond to this comment.	No.
5) Reduce target area for granular fly bait, instead of allowing the quantity to be spread over "1,000 square feet".	EPA did not respond to this comment.	No.
6) Disallow all outdoor "paint-on" applications of imidacloprid, especially if painted surface is above impervious area that drains to storm drain system or surface	EPA did not respond to this comment.	No.

<p>water body. If any outdoor uses continue to be allowed, consider reducing application frequency (currently every 4-6 weeks), setting a maximum allowable outdoor treated area, and establishing a total annual application rate.</p>		
<p>7) Disallow product application in cracks and crevices along surfaces that drain into the storm drain system. If allowed, request that EPA and registrants utilize efficacy data to determine the smallest treated area that will achieve target pest control. This will enable labels to limit the spot treatments and crack and crevice treatments – to only the amount necessary – instead of the current 2' x 2' dimensions for spot treatment, and unspecified dimensions for crack and crevice treatments.</p>	<p>EPA updated label requirements to not limit to a 2' x 1' areas as well as limit application to 10% of the treatment area.</p>	<p>Partially.</p>
<p>8) Disallow all usage inside sanitary sewers, storm drains, or inside or around manholes.</p>	<p>Although manholes are not mentioned, it appears that EPA is prohibiting use in sanitary sewers, manholes etc. as they are not in the list of permitted areas.</p>	<p>Yes, but label would be clearer if it explicitly prohibited these uses.</p>
<p>9) Impregnated Materials: (1) Require end use product labels for all products bearing pesticide claims consistent with the recently adopted California guidance for labeling pesticide-impregnated materials (California Notice 2017-08). (2) Consider limiting concentration and/or use locations for materials that show high washoff potential.</p>	<p>EPA did not respond to this comment.</p>	<p>No.</p>

Pesticide: **Neonicotinoid insecticides;** Dockets EPA-HQ-OPP-2012-0329, EPA-HQ-OPP-2011-0865, EPA-HQ-OPP-2011-0920, EPA-HQ-OPP-2008-0844, EPA-HQ-OPP-2011-0581

Use: Outdoor treatments (impervious and pervious surfaces), impregnated materials (wood, siding, etc.), pet treatments, etc.

Why we care: Highly toxic to aquatic invertebrates. Monitoring data exceeds aquatic benchmark in many areas of California

Actions taken: In March 2020, the County of Sacramento sent a letter to EPA requesting a comment period extension. Other agencies also requested an extension including: BACWA, City of Elk Grove, City of Sacramento, Orange County, Marin County Stormwater PPP, Riverside County Flood Control and Water Conservation District, SCVURPPP, and the SF Bay Water Board.

Status: EPA released Proposed Interim Decisions for Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, and Thiamethoxam.

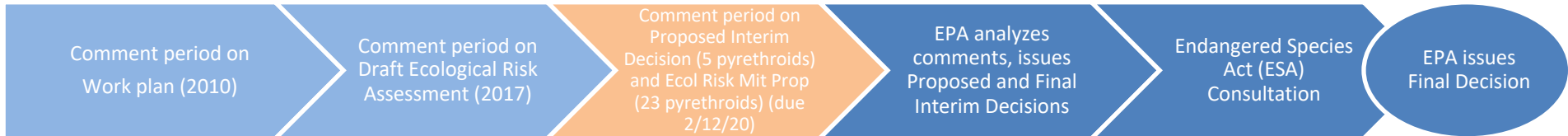


Next steps: EPA will analyze comments and issue a Final Interim Decision.

Recommendation: Send comment letter to EPA on the Imidacloprid Proposed Interim Decision to address unresolved issues and concerns.

County of Sacramento Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
<p>On behalf of the County of Sacramento Department of Water Resources, I request that EPA extend the comment period for the Proposed Interim Registration Decisions (PIDs) for the subject neonicotinoids for one additional month, to May 4, 2020. This will provide adequate time for review in light of the complexity of the proposed interim decisions, the number of chemicals under consideration, and the occurrence of this comment period during our winter rainy season, when staff from our agency and the organizations we collaborate with take on substantial extra duties in association with monitoring of rainfall/runoff events.</p>	<p>EPA extended the review period from April 3, 2020 to May 4, 2020.</p>	<p>Yes.</p>

Pesticide: Pyrethroids; Docket: EPA-HQ-OPP-2008-0331
Use: Insecticides
Why we care: Priority pesticide due to toxicity, use, and monitoring data. Multiple 303(d) listings as well as adopted and pending TMDLs.
Actions taken: CASQA commented on the Preliminary Ecological Risk Assessment for Pyrethroids in 2017.
Status: EPA released the “Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal for 23 Chemicals” in November 2019. EPA also released Proposed Interim Decisions for cyphenothrin, flumethrin, imiprothrin, momflurorhrin, and tetramethrin; decisions for the other 18 pyrethroids are forthcoming.



Next steps: EPA will analyze comments and issue Proposed and Final Interim Decision.
Recommendation: Send comment letter to EPA on the Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal for 23 Chemicals to address unresolved issues and concerns. Do not comment on the non-water quality topics covered by the 5 current proposed decision; evaluate the remaining 18 for potential comments.

CASQA 7/7/2017 Comments to EPA	EPA Response	Did EPA incorporate CASQA’s comment?
<p>Pesticide Discharges to storm drains can be costly and disruptive. Currently, EPA has listed 622 California water bodies as impaired by pesticides under Section 303(d) of the Clean Water Act; of those, 16 are listed for pyrethroids.</p>	<p>EPA discussed impacts, including Clean Water Act compliance challenges and costs for indoor discharges, but did not even mention these for stormwater, except a passing reference to TMDL compliance.</p> <p>Based primarily on market share, EPA asserted that the benefits of pyrethroids use are high.</p>	<p>No. It virtually omitted urban runoff from its Clean Water Act compliance discussion.</p> <p>EPA’s benefits assessment did not distinguish between outdoor impervious surface applications and other types of applications (including underground It did not correctly identify alternatives for outdoor structural pest control.). It relied on an industry-supplied report on lawns/landscaping treatments as the data source for its outdoor urban benefits analysis. EPA also does not distinguish among the 22 pyrethroids and pyrethrins, which have very different environmental fates and toxicity, and thus very different potential for aquatic impacts.</p>

<p>CASQA Concurrs with EPA's Finding of Significant Ecological Risk and Need for Mitigation</p>	<p>None. EPA used CASQAs comments to counter arguments by others suggesting that there is not a significant ecological risk.</p>	<p>Yes.</p>
<p>Mitigation addressing urban runoff is needed. To minimize ecological impacts and reduce the number of watersheds impacted by pyrethroid TMDLs and subsequent costs to state and local government agencies, we request that EPA implement mitigation measures as requested above. If these mitigation approaches are not deemed appropriate nationwide, please consider providing clear mechanisms for California-specific labels and sales restrictions.</p>	<p>“Outdoor urban uses of pyrethroids and pyrethrins are expected to result in potential risks of concern, primarily to aquatic invertebrates and fish. This potential risk is often a result of urban runoff, but may also be a result of spray drift or improper disposal of pyrethroid products. The potential for this risk to occur in the environment is supported by pyrethroid monitoring data from urban settings at levels that would be expected to result in potential risk to aquatic invertebrates. There has been a substantial concern from municipalities and states, particularly California, that urban pyrethroid usage adversely impacts water quality and, in the case of California, contributes to TMDL exceedances. As a result, the EPA is proposing measures to reduce to the urban footprint of the pyrethroid group while still allowing flexibility for the user community and retaining the benefits of efficacious pest control.”</p> <p>“The potential ecological risks, which are expected to be reduced with the proposed mitigation, are outweighed by the high benefits associated with the use of pyrethroids for the control of pests with public health significance.”</p> <p>EPA Proposed mitigation:</p> <ol style="list-style-type: none"> (1) Indoor and Outdoor Use Site Clarification (2) Reduction in distance from building foundations that can be treated with pyrethroids from 10 feet to 7 feet. [California regulations prohibit applications >3 feet from building foundations] (3) Reduction in height above ground level of building treatments from 3 feet to 2 feet [this would make EPA labels consistent with this element of California regulations] (4) Prohibition on applications during rain. [California regulations already prohibit] (5) Unenforceable advisory statement to avoid applications if rain is forecast within 24 hours. [new] (6) Definition of spot treatment (2 sq. ft.) 	<p>No. Proposed mitigations are nice and might reduce slug discharges, but for California, they have no expected benefits for ongoing discharges. Proposed label language changes would continue (and in some cases exacerbate) conflicts between product labels and California’s surface water protection regulations for pyrethroids.</p> <p>Text includes two useful mitigations are proposed for indoor products that are <u>not</u> proposed for outdoor products in the enforceable part of the proposal (the “label table in the appendix”):</p> <ol style="list-style-type: none"> (a) Pictogram and new enforceable label statement: “Do not pour down the drain or sewer. Call your local solid waste agency for local disposal options.” (b) New advisory label statements (English & <u>Spanish</u>): “Do not allow to enter indoor or outdoor drains” and “Follow proper disposal procedures on this label” <p>EPA’s proposal allows some impervious surface applications prohibited by California regulations:</p> <ol style="list-style-type: none"> (a) Within 25 feet of an aquatic habitat located down gradient from an application site (b) Preconstruction termite site within 10 feet of a storm drain located down gradient (c) aquatic habitat protection excludes intermittent streams (which are included in California regulations) <p>EPA mitigations cover all users (not just professional applicators) and include etofenprox, which is currently not covered by California regulations.</p>

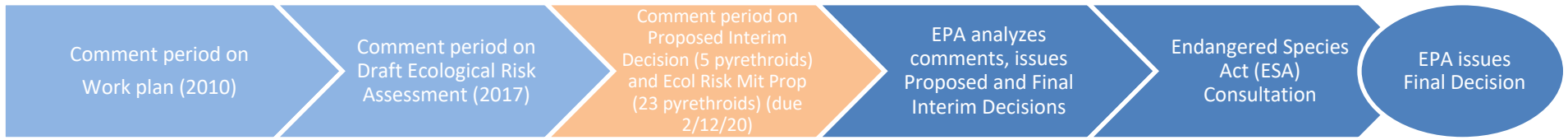
	(7) New requirement: "Do not allow the product to enter any drain during or after application." [No methods are specified as to how to prevent post-application washoff into storm drains] (8) Various other label clarifications.	
EPA's runoff modeling seems to underestimate some exposures as shown by the risk quotients (RQs) calculated from monitored concentrations that are generally higher than the RQs calculated from modeled concentrations (PRA, Part II, pp. 165-167).	EPA acknowledged the monitoring data and noted that it "did not agree with the PWG that it is inappropriate to compare modeled and monitored concentrations". EPA acknowledged the concerns from commenters from California concerning what is required under the Clean Water Act.	Yes.
CASQA agrees with EPA's use of all available aquatic toxicity data including those for sensitive organisms like <i>Hyalella azteca</i> and <i>Americamysis bahia</i>. The San Francisco Bay Regional Water Quality Control Board also commented on this in their 7/6/17 Letter to EPA, "It should be noted that <i>H. azteca</i> are not uniquely sensitive to pyrethroids. Of the few aquatic invertebrate species that have been tested for pyrethroids toxicity, several are similar to the sensitivity to <i>H. azteca</i> ."	EPA considered arguments from both CASQA/SF Water Board and the registrant's lobbying group (Pyrethroid Working Group [PWG]) and ultimately agreed with the comments from CASQA/Water Board on this issue. EPA relied not only on these comments, but also on scientific papers submitted with the comments	Yes.
CASQA Recommends Additional Use Restrictions and Product Label Enhancements.		No, except for improvements to label readability.
1. Reducing overuse of active ingredient. We request that the EPA and registrants review such studies of application sites, applicator methods, and associated residual pesticides in runoff and coordinate with CDPR to develop additional mitigations and associated label restrictions to reduce over-application from creating regulatory and consequent financial burdens that must be borne by state and local governments.	"The EPA has worked extensively with registrants...to develop proposed mitigation to reflect what is practical while also maintaining the efficacy of these uses. The proposed mitigation is designed to reduce the pathway for these chemicals to get into surface waters and storm drainage systems. The language also informs consumers on how to prevent pyrethroids products from ending up in wastewater facilities."	No. EPA's proposal would not meaningfully expand the current California mitigations, which are proving insufficient to resolve pyrethroids water impairments.
2. Adding a minor label requirement for pre-construction (under foundation) termiticide treatments to bridge the gap between FIFRA and	"In following up on the labeling recommendations from CASQA, the EPA consulted with construction experts with specific experience with termiticide applications, regarding	No. EPA did not implement any changes to bridge the gap between FIFRA and the Clean Water act on termiticide treatments.

<p>Clean Water Act regulatory programs. CASQA requests that EPA refine labels for pre-construction termiticide applications with the overall goal of preventing the discharge to water bodies of any water that contacts pesticide treated soil. Specifically, we request that EPA add a requirement that after a pre- construction termiticide treatment the applicator must post signage identifying sites that have been treated, stating the need to maintain the plastic cover until the foundation is poured and to manage in accordance with water quality and hazardous waste laws any water that collects in the treated area before the foundation is poured. Such a requirement would address a gap between FIFRA and Clean Water Act water quality control programs associated with the NPDES stormwater construction permits.</p> <p>CASQA would appreciate the opportunity to discuss the specifics of this recommendation with EPA and registrants and professional applicators as appropriate. We perceive this as a relatively minor change that would address an existing gap between FIFRA and Clean Water Act construction site regulatory programs.</p>	<p>the suggestion that a signage requirement on pyrethroid labels could reduce the amount of pesticides running off into the drainage system. The EPA also met with Dave Tamayo, an environmental specialist from CASQA, on February 25, 2019, to discuss these comments and recommendations. The EPA officials also attended the 2019 Termite Tour, organized by the Association of Structural Pest Control Regulatory Officials, which included discussions on pre- and post-construction termite application practices. There wasn't consensus on the potential effectiveness additional posting and covering of these pre-construction termite applications could be in reducing pesticides in surface water. Therefore, the EPA is not proposing these changes in the ecological risk mitigation proposal. However, the EPA welcomes additional comments on this topic during the public comment period."</p>	
<p>3. Enhancing overall readability and enforceability of label language. CASQA requests that EPA seek to eliminate all conflicting and unclear language by coordinating with CDPR and registrants in the development of label language that more clearly provide instructions that result in protection of water quality. If EPA does not concur that label enhancement is necessary on a nationwide basis, CASQA requests that EPA provide clear mechanisms for establishing California-specific label instructions. CDPR is unable to take this action on its own because CDPR does not have the authority to establish pesticide label language, which is under the sole authority of EPA.</p>	<p>"The EPA has made a significant effort to propose changes to pyrethroid labels to improve consistency and help users find adequate directions."</p>	<p>Partially. Proposed label language includes a few useful clarifications but maintains some language that is confusing and includes many statements that are unenforceable.</p> <p>No changes were made to bifenthrin labels, which have additional mitigation that has confusing wording.</p>

<p>4. California-Specific Labels. If EPA does not find it appropriate to make these changes on a nationwide basis, we request that EPA provide CDPR the ability to work with registrants to establish California specific instructions on product labels. Since EPA controls product labels – the most effective means of controlling product usage – EPA’s explicit approval of state-specific label language is essential.</p>	<p>“The EPA has worked closely with CDPR in the past on adding state-specific labeling restrictions to many pesticide products, including products containing pyrethroids. The EPA will continue to discuss implementation options with states and stakeholders when geographic-specific restrictions may be needed.”</p>	<p>No resolution. EPA’s proposal differs significantly from California regulations, in ways that will further confuse applicators who tend to focus on product labels (in their hands) instead of regulations (not in their hands). EPA does not explicitly state whether it will allow or support California-specific labels.</p>
<p>CASQA Requests EPA Terminate Urban (“Residential”) Use of Bifenthrin Due to Its Persistence in Aquatic Ecosystems. CASQA has concluded that special measures to address bifenthrin are an important part of a pyrethroids mitigation strategy because, from the urban water quality standpoint, bifenthrin is far more problematic than other pyrethroid pesticides.</p> <ul style="list-style-type: none"> • Bifenthrin Exceeds EPA Aquatic Life Benchmarks More Often Than Any Other Pyrethroid • Bifenthrin Is Substantially More Persistent in Aquatic Environments Than Other Pyrethroids • Bifenthrin is among the most highly toxic pyrethroids • Bifenthrin is One of Multiple Insecticides Commonly Used in Urban Environments • Due to Bifenthrin’s Unique Persistence, It Is Too Hazardous to Use in Urban Settings <p>CASQA further requests that if EPA does not concur that this measure is appropriate on a nationwide basis, that EPA implement such a measure for California by adding California-specific statements to all residential bifenthrin product labels (e.g., “not for use in California”). CDPR is unable to take this action because CDPR does not have the authority to establish pesticide label language, which is under the sole authority of EPA.</p> <p>While the discussion above focuses on bifenthrin, CASQA requests that EPA provide similar controls to ensure that</p>	<p>“With regard to aquatic risk, bifenthrin is not so unique when compared to other pyrethroids that it warrants additional bifenthrin-specific mitigation... bifenthrin does not consistently have the highest RQ exceedances for aquatic invertebrates. The agency disagrees with CASQA that bifenthrin is more toxic to aquatic invertebrates than other pyrethroids. All pyrethroids are very highly toxic to aquatic invertebrates.”</p> <p>“The EPA is not proposing ecological mitigation for bifenthrin beyond what is outlined for all pyrethroids in the Pyrethroids and Pyrethrins: Ecological Risk Mitigation Proposal For 23 Chemicals due to the benefits of its use (USEPA 2016), and the agency’s expectation that greater detection frequencies and concentrations of alternative insecticides (including other pyrethroids and fipronil) would occur if bifenthrin were removed from the market, because these alternative insecticides would likely take its place in the market.”</p>	<p>No. EPA is using a scientifically questionable basis for its assertion that bifenthrin is no more problematic than other pyrethroids. The datasets EPA is using and EPA’s modeling have scientific errors that have been enumerated in other studies. Bifenthrin may not be the most toxic pyrethroid, but based on monitoring data it appears to be the most persistent pyrethroid in urban watersheds. The combination of toxicity and persistence is the issue (it does not need to be the “top ranked” in either category to merit removal from the market). EPA’s RQs are admittedly scientifically incorrect, so they should not be cited as the basis of any decision.</p> <p>Other data sources – particularly DPR’s environmental monitoring data - lead to the conclusion that bifenthrin is the main contributor to ecological risks from pyrethroids and that this contribution is high relative to its usage. This indicates that substitution by another pyrethroid would improve water quality.</p> <p>Interestingly, despite the assertion that there should be no difference in risk mitigation among the pyrethroids, EPA notes “Bifenthrin, cypermethrin, deltamethrin, and esfenvalerate had particularly high chronic RQs.”</p>

<p>there is adequate mitigation for any other pyrethroid that has similar or greater persistence in aquatic environments.</p>		
<p>Pyrethroids Have Been Identified as a Contributor to the Decline of Important Delta Fish Because of their presence and toxic effects, both directly and through food-web impacts, pyrethroids have been identified as potentially playing a significant role in the decline of important fish species in the Sacramento-San Joaquin Delta Estuary (Delta)...As a result of concerns about pyrethroid impacts in the Delta, establishing control programs for the pyrethroid discharges to the Delta was prioritized in the Delta Stewardship Council's Delta Plan and the Central Valley Regional Water Quality Control Board's Delta Strategic Workplan (CRWCB-CVR 2014). (San Francisco Bay Regional Water Quality Control Board's 7/6/17 Letter to EPA)</p>	<p>EPA acknowledged the SF Water Board's concerns and noted that "pyrethroids are expected to result in risks to aquatic biota in many situations. EPA has considered water quality issues in developing its ecological risk mitigation proposal for the pyrethroids/pyrethrins."</p>	<p>Partially. Although EPA acknowledged the SF Water Board's concerns, the mitigations proposed by EPA are not enough to address the risk.</p> <p>EPA stated that it will address endangered species in individual risk management decisions. This seems to conflict with the concept of the single ecological risk management decision to cover all 23 chemicals, but what it will likely be is a description of next steps for Endangered Species Act Compliance, not a set of mitigation measures for aquatic endangered species.</p>

Pesticide: Pyrethroids; Docket: EPA-HQ-OPP-2008-0331
Use: Insecticides
Why we care: Priority pesticide due to toxicity, use, and monitoring data. Multiple 303(d) listings as well as adopted and pending TMDLs.
Actions taken: In November 2019, CASQA sent a letter to EPA requesting a comment period extension. Other agencies also requested an extension including: NACWA, BACWA, SF Bay Water Board, Central Coast Water Board, Central Valley Water Board, SCVURPPP, Sacramento County, Santa Barbara County, City of Santa Barbara, Alameda County, Napa County Flood & Water Conservation District, Orange County, City of Cotati, City of Sacramento, City of San Diego, LA County Public Works, Marin County Stormwater PPP, and City of Elk Grove.
Status: EPA released the “Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal for 23 Chemicals” in November 2019. EPA also released Proposed Interim Decisions for cyphenothrin, flumethrin, imiprothrin, momflurorhtrin, and tetramethrin; decisions for the other 18 pyrethroids are forthcoming.



Next steps: EPA will analyze comments and issue Proposed and Final Interim Decision.
Recommendation: Send comment letter to EPA on the Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal for 23 Chemicals to address unresolved issues and concerns. Do not comment on the non-water quality topics covered by the 5 current proposed decision; evaluate the remaining 18 for potential comments.

CASQA 11/25/2019 Comments to EPA	EPA Response	Did EPA incorporate CASQA’s comment?
<p>On behalf of the California Stormwater Quality Association (CASQA1), we request that the comment period for the Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal be extended to February 28, 2020 to provide adequate time for review in light of the complexity of the proposal, the year-end holiday timing of the review period, and its timing during the winter rainy season, when staff from our member agencies and the organizations we collaborate with take on substantial extra duties in association with rain events.</p>	<p>EPA extended the review period from January 13, 2020 to February 12, 2020.</p>	<p>Yes.</p>

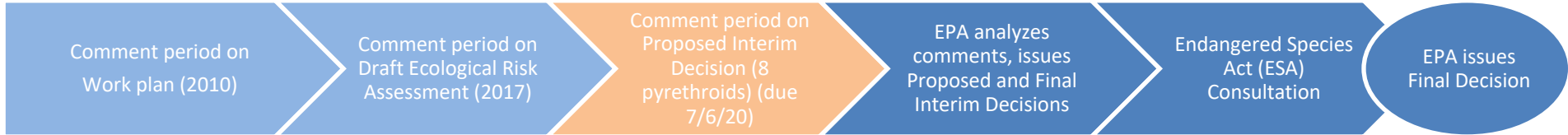
Pesticide: **Several pyrethroids;** Dockets: EPA-HQ-OPP-2008-0331. Docket includes: bifenthrin (EPA-HQ-OPP-2010-0384), cyfluthrin (EPA-HQ-OPP-2010-0684), deltamethrin (EPA-HQ-OPP-2009-0637), esfenvalerate (EPA-HQ-OPP-2009-0301), permethrin (EPA-HQ-OPP-2011-0039), phenothrin (EPA-HQ-OPP-2011-0539), prallethrin (EPA-HQ-OPP-2011-1009), and tau-fluvalinate (EPA-HQ-OPP-2010-0915).

Use: Insecticides

Why we care: Priority pesticide due to toxicity, use, and monitoring data. Multiple 303(d) listings as well as adopted and pending TMDLs.

Actions taken: In February 2020, CASQA sent a comment letter to EPA on the Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal.

Status: EPA released Proposed Interim Decisions for bifenthrin, cyfluthrin, deltamethrin, esfenvalerate, permethrin, phenothrin, prallethrin, and tau-fluvalinate.



Next steps: EPA will analyze comments and issue Final Interim Decision on these eight pyrethroids.

Recommendation: Send comment letter to EPA on these eight Proposed Interim Decisions.

CASQA 2/12/2020 Comments to EPA	EPA Response	Did EPA incorporate CASQA's comment?
EPA's benefits assessment should include urban runoff-related costs to municipalities	No response. In the March 2020 PIDs EPA noted that they "had addressed" comments in a Joint Response issued on 11/12/2019, months before CASQA submitted its 2/12/20 comment letter.	No.
EPA's risk / benefit finding should be revised to differentiate among the 23 pyrethroids and pyrethrins and among the various outdoor urban uses of the 23 chemicals	EPA issued a single risk mitigation proposal with only one set of measures covering all 23 pyrethroids and pyrethrins, despite finding large differences in aquatic risks among the pyrethroids and pyrethrins.	No.
EPA should end outdoor urban use of bifenthrin	No response.	No.
EPA should provide California-specific labels for outdoor structural pest control products that are consistent with California regulations	No response.	No.
CASQA supports EPA-proposed label changes, with modifications	EPA kept the anti-dumping product label improvements but did not consider CASQA's suggested refinements from the February 2020 comment letter.	Partially.

Pesticide: Terbutylazine; Docket: EPA-HQ-OPP-2010-0453
Use: Fountain algaecide / microbiocide / microbiostat.
Why we care: Highly toxic to aquatic invertebrates.
Actions taken: County of Sacramento (a CASQA member) sent EPA comments on the Draft Risk Assessment in January 2020, respectively.
Status: EPA released the Proposed Interim Decision in May 2020.

Next steps: EPA will review comments on the Proposed Interim Decision and issue a Final Interim Decision
Recommendation: Write a response letter, supporting the Sacramento County comments that EPA included in the Proposed Interim Decision.

Sacramento County comments to EPA (Jan. 2020):	EPA Response:	Did EPA incorporate member comments?
<p>Our primary concern with the subject pesticides is that the Draft Risk Assessment neglected to consider storm drain discharges of terbutylazine-containing fountain water and the ensuing risk to aquatic life. The Draft Risk Assessment assumed that there would be “no significant exposure to aquatic organisms...from the decorative/ornamental fountain uses given that the label prohibits discharge of this product into lakes, streams, ponds, estuaries, oceans, or other waters, unless in accordance with the National Pollutant Discharge Eliminations Systems (NPDES) permit.”</p>	<p>EPA made label changes (see below) that will help reduce the amount of terbutylazine that is discharged into the storm drain by requiring notification to local sanitary sewer/ storm drain authorities.</p>	<p>Yes.</p>
<p>Sacramento County requests that the current language be changed to match the copper label, which would also provide consistency for label language across pool, spa, hot tub, and fountain chemicals, which follows: “Before draining a treated pool, spa, hot tub, or fountain, contact your local sanitary sewer and storm drain authorities and follow their discharge instructions. Do not discharge treated pool, spa, hot tub, or fountain water to any location that flows to a gutter or storm drain or natural water body unless discharge is allowed by state and local authorities.”</p>	<p>“The agency agrees with the requested label changes and is proposing additional label changes to address the potential ecological risks by reducing exposure and clarifying the appropriate use methods, as described in Appendix B.”</p>	<p>Yes.</p>

<p>Sacramento County also notes that the following language exists on several terbutylazine labels: <i>"Experience will demonstrate the level of (product) is required."</i> We are concerned that this vague label language could lead to overuse these products. We are also concerned that label language states that users should maintain a concentration of product, cited in ppm, to get adequate algae control, but does not specify a practical, low-cost method for determining terbutylazine concentrations in treated fountain water. We respectfully request that EPA provide a dosing table, based on the size range (in volume of water) for fountains, to guide consumers in the application amount and frequency of application of the product.</p>	<p>EPA did not address this comment.</p>	<p>No.</p>
<p>For all fountain products, including those containing terbutylazine, we also recommend that the "Environmental Hazards" label statements be applied on the basis of product end use rather than product size. This would mimic EPA's decision for lithium hypochlorite products. As explained in our attached lithium hypochlorite comments, this approach avoids potential conflicting language on product labels.</p>	<p>EPA did not address this comment.</p>	<p>No.</p>

Pesticide: Zinc and Zinc Salts; Docket: EPA-HQ-OPP-2009-0011
Use: Swimming pool algicide, herbicide for moss, material preservative, wood preservative.
Why we care: Highly toxic to aquatic invertebrates. High potential for significant discharges to MS4 and surface waters. 303(d) listings, TMDLs, CWA Priority Pollutant.
Actions taken: County of Sacramento (a CASQA member) and NACWA sent EPA comments on the Draft Risk Assessment in March and January 2019, respectively.
Status: EPA released the Proposed Interim Registration Review Decision in July 2019. Comments are due September 30, 2019.



Next steps: EPA will analyze comments and issue a Proposed Interim Decision. No ESA consultation is planned as EPA made a “no effect” determination.

Recommendation: Send comments to EPA to declare support of the improved product label language.

CASQA Members comments to EPA:	EPA Response:	Did EPA incorporate member comments?
<p>We are writing to request that the zinc and zinc salts Registration Review decision follows the precedent for improved labels that was established by the decisions for other pool, spa, and fountain chemicals, such as lithium hypochlorite and copper. In those Registration Review decisions, EPA worked carefully through the various issues to develop practical label language that mitigates possible aquatic impacts from discharge of treated pool, spa, and hot tub water, while preventing excess flows into sewer collection systems. Sacramento County requests that the current language be changed to match the lithium hypochlorite label, which would also provide consistency for label language across pool, spa, and hot tub chemicals, which follows:</p> <p><i>“Before draining a treated pool, spa, or hot tub, contact your local sanitary sewer and storm drain authorities and follow their discharge instructions. Do not discharge treated pool or spa water to any location that flows to a gutter or storm drain or natural water body unless discharge is allowed by state and local authorities.”</i></p>	<p>“Due to the scenarios outlined in these public comments, the requested label language has been added as a proposed requirement.” (p. 6)</p>	<p>Yes.</p>
<p>For all swimming pool, spa, and hot tub products including those containing zinc and zinc salts, we also recommend that the “Environmental Hazards” label statements be applied on the basis of product end use rather than product size... this approach avoids potential conflicting language on product labels.</p>	<p>“The requested changes to the uses triggering NPDES permit language have been considered by the Agency and are included as a proposed requirement. Both of the proposed changes are addressed in Appendix A of this document. The Agency thanks the submitters for their comments.”</p>	<p>Yes.</p>

Pesticide: Zinc and Zinc Salts; Docket: EPA-HQ-OPP-2009-0011
Use: Swimming pool algicide, herbicide for moss, material preservative, wood preservative.
Why we care: Highly toxic to aquatic invertebrates. High potential for significant discharges to MS4 and surface waters. 303(d) listings, TMDLs, CWA Priority Pollutant.
Actions taken: County of Sacramento (a CASQA member) and NACWA sent EPA comments on the Draft Risk Assessment in March and January 2019, respectively. CASQA commented on the Proposed Interim Decision in September 2019.
Status: EPA released the Interim Decision in February 2020.



Next steps: No ESA consultation is planned. EPA will likely proceed to issuing a Final Decision.
Recommendation: No action is needed at this time.

CASQA Members comments to EPA (September 2019):	EPA Response:	Did EPA incorporate member comments?
<p>CASQA supports the following proposed label language for swimming pool, spa, and hot tub products: <i>“Before draining a treated pool, spa, or hot tub, contact your local sanitary sewer and storm drain authorities and follow their discharge instructions. Do not discharge treated pool or spa water to any location that flows to a gutter or storm drain or natural water body unless discharge is allowed by state and local authorities.”</i></p>	<p>The language in the Interim Decision exactly matches what was proposed in the Proposed Interim Decision. (p. 12)</p>	<p>Yes.</p>
<p>CASQA also supports EPA’s clarification that Office of Pesticide Programs’ standard NPDES permit label language is only for manufacturing-use products and is not suitable for end use products.</p>	<p>-For end-use products: NPDES permit language for pool, spa, or hot tub use is not required and must be removed if currently on the label associated with these uses.</p> <p>-For technical grade and manufacturing use products, the following NPDES statement must be included: “Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.” (p. 12)</p>	<p>Yes.</p>