SWAMP Strategy

CA Surface Water Ambient Monitoring Program (SWAMP)

2024-03-01

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Welcome!

Welcome to the Surface Water Ambient Monitoring Program (SWAMP) Strategy!

This is an online reference and resource written by the California State Water Resources Control Board (State Water Board) SWAMP Team. The SWAMP Team is composed of multiple team members at the State Water Board within the SWAMP Unit, SWAMP Information Management and Quality Assurance Center (SWAMP IQ), and others in the Office of Information Management and Analysis (OIMA).

Content in this SWAMP Strategy includes strategic and tactical planning documentation for SWAMP's Science and Data Communication projects and Statewide Programs (e.g., Bioaccumulation, Bioassessment, Freshwater Harmful Algal Blooms, and Toxicity and Contaminants), including:

- **About Pages** - provide brief background to Program or Project, including a description of core principles and programmatic drivers, and a list of key contacts (e.g. About SWAMP)

- **Strategic Planning Pages** - provide descriptions of strategic priorities and associated projects/actions to advance SWAMP's Vision and thematic priorities.

    - SWAMP Strategic Priorities - describe overarching priorities SWAMP has set for all Projects and Programs over the specified time frame, *in addition to* core workload or efforts required for standard operations and maintenance.

    - Workplans - describe strategic projects and actions to advance SWAMP's four thematic priorities and vision.

- **Partner Pages** - provide an overview of key partners for each Program/Project

Recommend deleting the text below (except for Quarto paragraph & logos) and/or integrating into other pages

For each of the statewide programs and projects, planning documentation is organized into two broad categories (1) mid-term program plans and (2) short-term program plans.

Mid-term Program Plans: 3-5 year plans

- Quality Assurance Program Plans
- Monitoring Plans
- Data Management
- Communication and Engagement Plans
- Multi-Year Budgets
- Monitoring Standard Operating Procedures (SOPs)
- Data Management and Analysis SOPs

Short-term Program Plans: 1 year

- Annual Monitoring Plan
- Annual Budget
- Individual Program Work Plan

Other relevant program information including program partners and networks are also included.

This Quarto book is an open, living, and continuously iterating resource. If you have suggestions for additions or revisions you think should be incorporated into this book, please follow the guidance provided in the Contributing chapter.
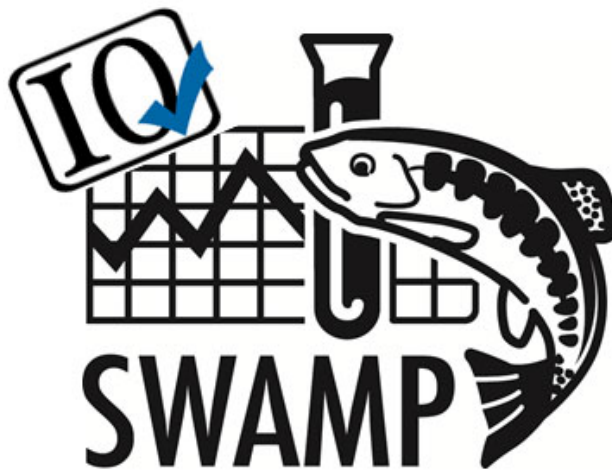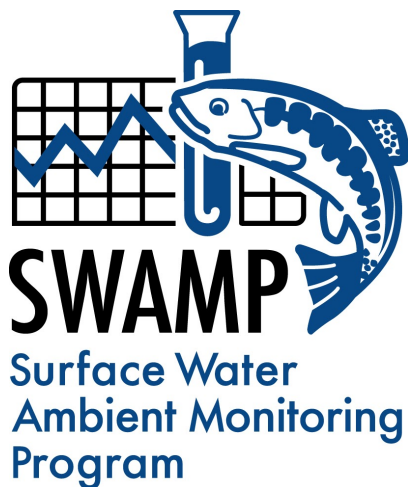
Part I

SWAMP

1 About SWAMP

1.1 SWAMP

SWAMP sits within the Water Board's Office of Information Management and Analysis (OIMA), which serves as an advocate for data management, a bridge between data collectors and users, as well as, provides transparency of the Water Board's information management infrastructure.

> The SWAMP mission is to provide resource managers, decision makers, and the public with timely, high-quality data, information and tools needed to evaluate the condition of all surface waters throughout California.

SWAMP accomplishes this through carefully designed, externally reviewed statewide and regional surface water monitoring programs, and by assisting other entities state-wide in the generation of comparable data that can be brought together in integrated assessments that provide answers to current management questions. In addition to providing information and tools, SWAMP's vision is to help enhance monitoring, assessment and reporting activities throughout the Water Boards.

Statewide SWAMP Monitoring Programs include:

- Bioaccumulation Monitoring Program
- Bioassessment Program
- Freshwater and Estuarine HABs Program
- Toxicology and Contaminants Program

> **i** Note
>
> Reminder to add icons and new links when ready

1.2 SWAMP IQ

SWAMP IQ assists SWAMP Statewide and Regional monitoring programs, and other ambient monitoring projects and programs throughout the state by offering resources that support each

stage of water quality monitoring, from sample collection to data entry, as well as providing quality assurance review, verification, and data storage.

SWAMP IQ strives to promote question-driven monitoring, and to ensure the highest quality data is used to evaluate the health of California's water bodies.

1.3 Core Principles

> 💡 Tip
>
> Values = **WHO** we are and the foundation of how we work
> Purpose = **WHY** we do what we do
> Vision = **WHERE** we want to go
> Mission = **HOW** we work to achieve our vision
> Paragraphs below were pulled from existing SWAMP SAP - AH recommends reviewing and revising to make more succinct (~1 sentence each) and better aligned with descriptions above.

1.3.1 Our Values

Link to OIMA & Water Boards value documents and describe how we apply those to SWAMP

1.3.2 Our Purpose

Reference - State Water Board Strategic Plan, Open Data Resolution, etc.

1.3.3 Our Vision

Water Board monitoring data and information are used to inform decisions that help protect and restore California watersheds, and to provide California communities with easy to find, up to date information about the conditions of their local lakes, rivers and streams.

1.3.4 Our Mission

Our mission is to generate high quality, accessible, and usable data and information that is used to protect and restore California's watersheds, and to inform California communities about local conditions of waterbodies monitored by SWAMP.

1.3.5 Guiding Principles

SWAMP has established the following guiding principles as the foundation upon which to prioritize its actions (SWAMP Strategy, 2010):

- SWAMP monitoring evaluates the physical, chemical, and biological integrity of California's waters.

- Monitoring and assessment at both statewide and regional levels is necessary to protect and restore water quality.

- Monitoring of both high-quality waters and those known or suspected to be degraded is essential to a robust ambient monitoring program.

- Monitoring is designed to support a network of information users that include state, federal, and local agencies, the regulated community, the interested public, and their elected representatives.

- Monitoring efforts are prioritized and coordinated to maximize utility and minimize costs.

- SWAMP seeks to make the most efficient use of data collected by all Water Board programs, as well as the large amount of data collected by other agencies and the regulated community.

1.4 Background & History

Pull from SWAMP SAP?

1.5 Key Contacts

Add table from SWAMP Manual?

1.6 Key Resources

Best to integrate links below into text above and delete this section altogether

Purpose	Webpage
Overview of SWAMP	SWAMP Website
Overview of SWAMP IQ	SWAMP IQ Website

Purpose	Webpage
Current SWAMP program priorities and strategies	[SWAMP Strategic Action Plan, 2020-2023](#)
Detailed overview of SWAMP monitoring standards and requirements	[SWAMP Quality Assurance Program Plan (QAPP), 2022-2024](#)
Overview of OIMA	[OIMA Website](#)
Strategic actions to improve the way the Water Boards use data and information about CA water resources	State Water Resources Control Board [Strategic Data Action Plan (SDAP), draft](#)
Projects carried out in the SDAP	State Water Resources Control Board [SDAP, project portfolio summaries](#)

2 Strategic Priorities (2025 - 2030)

Structure inspiration: https://www.waterboards.ca.gov/board_info/priorities/docs/workplan_2023.pdf

The priorities and associated statewide work plans do not include everything related to the core workload or efforts required to operate and maintain SWAMP, SWAMP IQ and Statewide Monitoring Programs (e.g. monitoring, data processing, program management) . Additionally, the below priorities are subject to change based on need.

Below we have highlighted *additional* priorities that staff will tackle in addition to core efforts.

2.1 Strategic Themes

All of SWAMP's strategic priorities are categorized under the four themes described below.

2.1.1 Program Management

Related to: planning, budgets, contracts, etc.

2.1.2 Monitoring & Assessment

Related to: data collection & analysis + data use/assessment

2.1.3 Data Quality & Management

Related to: QAQC, storage, sharing, etc.

2.1.4 Communication & Engagement

Related to: how we communicate using our data and with our partners & the public

2.2 SWAMP Strategic Priorities (2025 - 2030)

Pulled from SWAMP SAP - potentially delete this section if we can describe adequately in above thematic sections

1. Align monitoring and assessment efforts with Water Board Programs and public needs.

2. Establish and maintain effective coordination and communication systems and processes.

3. Develop and share user-centered resources, training, and tools.

Part II

Bioaccumulation

3 About

3.1 Background & History

Pull from SWAMP SAP? or last EPA report?

3.2 Key Contacts

Add table from SWAMP Manual? Include Program, Data, SWAMP IQ & Workgroup Leads

3.3 Key Resources

Best to integrate links below into text above and delete this section altogether

4 Workplan

This Workplan for the SWAMP Statewide Bioaccumulation Monitoring Program describes strategic projects and actions the Program intends to implement to advance SWAMP's four thematic priorities and vision.

All of the Program's priority projects and associated actions are categorized under SWWAMP's four strategic themes: Program Management, Monitoring, Data Quality & Management, Communication & Engagement. For more information on each of these themes, see SWAMP Priorities (2025-2030).

Key: * = highest-priority actions for the current strategic planning period (2025 - 2030)

4.1 Program Management & Coordination

The Program will continue all essential activities to support management and coordination of all operational activities within the Program (e.g. annual strategic planning and implementation, contract and budget tracking and updates, etc.). In addition, the program has committed to implementing the below strategic projects to further advance Program and SWAMP mission and vision:

4.1.1 Project 1: Modernize and Streamline Program and STEW Webpages

Action 1.1: STEW Webpages - Work with the Water Quality Monitoring Council Director and the Division of Information Technology (DIT) to finalize the implementation of modernized STEW webpages. Although webpage mock-ups were completed and submitted in 2022, they have not yet been implemented. The focus of this action will be to update mock-ups, as needed, and support the Council Director and DIT to finalize and fully transition to the new webpages.

Action 1.2: Program Webpages - Work with the SWAMP Lead and DIT to finalize the implementation of modernized Program webpages. Although webpage mock-ups were completed and submitted in 2023, they have not yet been implemented. The focus of this action will be to update mock-ups, as needed, and support SWAMP and DIT to finalize and fully transition to the new webpages.

4.1.2 Project 2: Increase coordination with partners

Action 2.1: Water Boards Partners - Continue outreach to and development of consistent coordination with key State Water Board programs in the Division of Water Quality (DWQ) (e.g. Integrated Report). While lines of communication exist, more regular communication and collaboration on topics related to the Program would be beneficial for all parties, particularly as it related to projects that increase transparency of how Program data are used in DWQ programs, support the implementation of Tribal Beneficial Uses (TBUs), and advance equity overall.

Action 2.2: Other Bioaccumultion Monitoring and Related Programs - Continue outreach to and development of consistent coordination with other bioaccumulation monitoring programs to more efficiently and effectively use collective resources to accomplish motioning objectives. Other related programs include, but are not limited to:

- U.S. EPA National Aquatic Resource Surveys
- Regional Monitoring Program for Water Quality in San Francisco Bay (Bay RMP)
- Southern California Bight Regional Monitoring Program (Bight RMP)
- The Delta Regional Monitoring Program (Delta RMP)
- Biomonitoring California

Action 2.3: California Native American Tribes - Continue outreach to and development of consistent coordination with California Native American Tribes (Tribes) that have an interest in bioaccumulation monitoring. Specifically, continue to communicate, build relationships, and explore capacity building opportunities with Tribes that participated in the Bioaccumulation Monitoring Program Training Series.

4.1.3 Project 3: Support Implementation of AB 762

In 2019 the California legislature passed and the governor signed into law Assembly Bill No. 762 (AB 762), which authorized the Water Board to provide grant funding to County health officials for posting health advisories when the Water Boards and OEHHA determine that consuming certain fish or shellfish presents a significant health risk.

The ultimate goal of the below activities is to contribute to the coordination, communication, and implementation of the grant funding process and priorities to satisfy the mandates of AB 762 and to improve risk communication to communities most at risk of consuming contaminated fish and shellfish.

Action 3.1: Improve coordination with the Division of Financial Assistance (DFA) - Continue working with DFA management and staff to improve coordination and communication of grant opportunities and reporting.

Action 3.2: Improve coordination with the Office of Environmental Health Hazard Assessment (OEHHA) - Continue working with OEHHA management and staff to improve coordination, communication, and tracking of locations in need of a new or updated advisory signs.

4.1.4 Project 4: Develop Next Cycle of Long-term Plans

Action 4.1: Program QAPP (2026-2028 | 2029-2031) - Review and update the Program QAPP (2023-2025) to describe all monitoring and analysis components of the Program from 2026 - 2028. Repeat process to develop QAPP for 2029-2031 monitoring and analysis.

Action 4.2: Long-term Monitoring Plan (2030-2034) - Begin soliciting and synthesizing feedback to inform the Program's next long-term monitoring plan. A recommended timeline is provided below:

- *Jul 2028 - Feb 2029: Feedback solicitation* - feedback should be solicited from the Water Boards (e.g., Regions, Integrated Report), Tribes, other California Agencies (e.g. OE-HHA, CDFW, CDPH), US EPA, other bioaccumultion monitoring and related programs (e.g. Bay RMP, Bight RMP, Delta RMP), and provide opportunities for others not listed above to provide feedback (e.g. survey, STEW Meeting Open Forums, etc.).
- *Mar - Apr 2029: Feedback synthesis & discussion* - All feedback should be synthesized and presented to the STEW, and the STEW should be given at least one opportunity to discuss synthesized information, and provide additional recommendations and feedback, as appropriate. The synthesis and STEW recommendations should be presented to SWAMP Management, who will review, consider, and decide the Programs final long-term priorities.
- *May - Nov 2029: The Long-term Monitoring Plan Development* - The Program and contractors will develop a long-term monitoring plan that reflects and responds to the feedback that was received during the Long-term Monitoring Priorities Assessment Process and SWAMP Priorities at that time. It is recommended a draft be shared in or before Jul 2029, and the final version is published in or before Nov 2029.

4.2 Monitoring & Assessment

The Program and contractors, with guidance from the STEW, will continue all essential activities to support the monitoring and assessment of status, trends, and impacts of contaminants in fish and shellfish on beneficial uses in California waterbodies, according to the priorities identified in the Program's Long-term Monitoring Plan (2025-2029). [INSERT LINK WHEN AVAILABLE]

In addition, the program has committed to implementing the below strategic projects to further advance Program and SWAMP mission and vision:

4.2.1 Project 5: Explore feasability of consistent and robust PFAS monitoring

Action 5.1: **PFAS Archives Project** - Continue implementation of a plan to analyze a suite of archive tissue samples for per-and polyfluoroalkyl substances (PFAS). The objective of the PFAS Archive Project is to begin to fill PFAS data gaps throughout the state to support the development of fish consumption thresholds and OEHHA advisory tissue levels (ATLs) for PFAS. State and Regional Water Boards Budgets will enabled analysis of close to 200 samples in 2024. Prioritize the analysis of additional archiveswhen budget permits as well as the development of a data report that summarizes and interprets the results of PFAS Archive data.

Action 5.2: PFAS Monitoring Feasability - Once PFAS archive results and interpretation are synthesized, review and discuss the need for and feasibility of including consistent and robust PFAS monitoring into regular statewide monitoring plans.

4.2.2 Project 6: Explore the feasibility of developing and implementing a statewide consumption survey

The 2024 Long-term Monitoring Priorities Assessment Process confirmed and quantified the need for a consistent, robust, and statewide consumption survey (or surveys). Of the nine Regional Water Boards and one State Board Division (DWQ) that provided feedback during the process, 90% of respondents (9/10) identified the need to have information on consumption patterns to better inform their work.

A number of Regions also discussed efforts they have underway to develop or implement local or regional consumption surveys. The ultimate goal of the below activities is to learn from and build on existing consumption survey efforts, and make a plan to coordinate and leverage resources to implement a robust, statewide fish consumption survey (or surveys) to understand consumption locations, fishing intensity, target species, methods, and concerns of consumers at water bodies throughout the state.

Action 6.1: Synthesize lessons from recent consumption survey efforts - A number of consumption surveys have been conducted at California water bodies (see the California Fish Consumption Study Inventory. More recently (2022-2024):

- The San Francisco Regional Water Board (Region 2) has been working with Community Based Organizations (CBOs) in the region to develop a San Francisco Bay consumption survey questionnaire
- The Los Angeles Regional Water Board (Region 4) has been conducting a subsistence fishing survey for a select number of freshwater bodies in the Region

One the Region 2 and Region 4 efforts have been completed, review methods and results in the context of more historical surveys, discuss with Regional Board SWAMP Coordinators

(and/or survey leads) and synthesize methods, costs, lessons, and anything else that might be helpful.

Action 6.2: Identify resources and partners needed for robust and comprehensive implementation of a statewide consumption survey - Present synthesis results (Action 5.1) to SWAMP Mangement, the STEW, and others as appropriate (e.g. DWQ, OEHHA, CDFW) to explore the feasibility of developing and implementing a statewide fish consumption survey, and to identify resources and partners needed for comprehensive implementation.

4.3 Data Quality & Management

The Program will continue all essential activities to support the generation and management of quality, statewide bioaccumulation monitoring data. In addition, the program has committed to implementing the below strategic projects to further advance Program and SWAMP mission and vision:

4.3.1 Project 7: Continue to Streamline Sample Analysis & QAQC Processes

The ultimate goal of the below activities is to reduce the amount of time it takes for raw and synthesized data to be available in the California Environmental Data Exchange Network (CEDEN) or the California Open Data Portal after samples are collected in the field. At the time of writing of this Workplan, the Bioaccumulation Monitoring Program has yet to make data collected in 2021 available in CEDEN - a 3+ year delay. Ideally, data would be available in CEDEN and the California Open Data Portal within 1 year after it is collected in the field.

Action 7.1: Continue to Streamline Sample Analysis & Reporting - Continue to work with SWAMP IQ, SWAMP Management, and field and laboratory contractors to continue to streamline and expedite the sample analysis and reporting process.

Action 7.2: CEDEN 2.0 - Support SWAMP IQ in the review and testing of how CEDEN 2.0 reviews and displays tissue data, when requested.

4.3.2 Project 8: Add Data Summaries to the California Open Data Portal

Action 8.1: Add Data Summaries to the California Open Data Portal - Work with Contractors to make data or interpretive report data summaries available on the California Open Data Portal. More specifically, for this action, the Program commits to:

- uploading accessible reports (in PDF format) as well as summarized tables (in Excel or .csv formats) to the California Open Data Portal
- associating those uploads with the raw data (e.g. tissue results)

- developing and using a consistent upload naming convention so it is easy to search for content uploaded by the Program
- developing and using consistent tags to make it easy to filter search results and reduce the time it takes for the user to find what they are looking for. Example tags include, but are not limited to: "bioaccumulation", "surface water", "tissue", and "fish", "shellfish" or "bivalves"

4.4 Communication & Engagement

The Program will continue all essential activities to support existing communication and engagement efforts. In addition, the program has committed to implementing the below strategic projects to further advance Program and SWAMP mission and vision:

4.4.1 Project 9: Continue Realignment Implementation

Using the Program Realignment Plan (Dec 2020), Realignment Plan Update (Dec 2022), and Realignment Tribal Engagement Plan (Mar 2022) as guides, the Realignment process will continue to focus on incorporating community perspectives and needs into Program efforts; with the aim of improving the Program's monitoring and communication efforts and ensuring the resulting data and information are useful and used by the Water Boards, OEHHA, the public, subsistence-dependent communities, and tribes.

Action 9.1: Complete San Francisco Region Realignment (2024 - 2026) - Work with Region 2 Realignment partners and contractors to implement the three-year Realignment process in the Region.

Action 9.2: Prepare of future Realignment Cycles (2025-2026 | 2028-2029) - Engage with Water Boards coordinators and Tribes in Regions who have not undergone the Realignment Process to continue to build relationships and discuss the interest and readiness of the tribes, communities, and Regions to participate in future Realignment cycles.

Action 9.3: Begin the next Realignment Cycle (2027-2029, Region TBD) - Work with Regional Realignment partners and contractors to implement the three-year Realignment process in the Region.

4.4.2 Project 10: Continue Development Data Visualization and Risk Communication Tools

Action 10.1: SWAMP Data Dashboard - Support the development, review, and testing of the Bioaccumulation Monitoring Program components of the SWAMP Data Dashboard to

ensure it elegantly and effectively visualizes, summarizes, and contextualizes all data collected by the Program.

Action 10.2: Cultural Consumption Application - Work with contractors, OEHHA, and Tribes to develop an interactive and user-friendly application that includes and contextualizes monitoring data, thresholds, and advisories associated with fish consumption and human health. The goal of the application will be to make it easier for tribal and subsistence consumers to understand the risk associated with consuming fish and shellfish and to make informed decisions on how to consume fish and shellfish safely and according to their cultural practices.

5 Partners

5.1 Overview

Understanding and addressing issues and impacts of bioaccumulation throughout all California waterbodes is nuanced and complex, and therefore requires multiple partners working together to achieve common goals. The SWAMP Bioaccumulation Monitoring Program (Program) and Safe to Eat Workgroup (STEW) are highly collaborative, and we're always looking for new collaborators and partners!

5.2 Partner Network

Below is a visual representation of the partners currently in our network as well as descriptions of and links to partner websites.

Figure 5.1: Network map of STEW and Program partners

5.2.1 SWAMP Bioaccumulation Monitoring Program Contractors

Moss Landing Marine Laboratories' (MLML) Marine Pollution Studies Laboratory (MPSL): Our MLML/MPSL partners lead the sample collection and processing efforts.

San Francisco Estuary Institute (SFEI): Our SFEI partners lead the data analysis, interpretation and reporting process, and help Co-chair the STEW!

5.2.2 Other SWAMP Programs

SWAMP Regional Monitoring Programs: Many Regional SWAMP Programs augment the efforts of the Statewide Bioaccumulation Monitoring Program, or conduct bioaccumulation related studies of their own to address regionally-specific water quality concerns.

SWAMP Information Management and Quality Assurance Center (SWAMP IQ): SWAMP IQ conducts a thorough quality assurance review and verification of all of our data before adding the data to our public data systems.

SWAMP Statewide Freshwater and Estuarine Harmful Algal Bloom (FHAB) Program: We're working with the FHAB Program to better understand the nexus between harmful algal blooms and bioaccumulation risks.

SWAMP eDNA Metabarcoding Monitoring and Analysis Project (SeMMAP): We're beginning to work with SeMMAP to better understand the extent to which environmental DNA (eDNA) can be used to support our monitoring efforts.

5.2.3 Other Monitoring Efforts

Whenever possible, we try to collaborate with other bioaccumulation monitoring programs, including:

- Regional Monitoring Program for Water Quality in San Francisco Bay (Bay RMP)
- Southern California Bight Regional Monitoring Program (Bight RMP)
- The Delta Regional Monitoring Program (Delta RMP)
- Marine Biotoxin Monitoring Program
- US EPA National Aquatic Resource Surveys

    - The National Coastal Condition Assessment (NCCA)
    - The National Lakes Assessment (NLA)
    - The National Rivers and Streams Assessment (NRSA)
    - The National Wetland Condition Assessment (NWCA)

- Biomonitoring California

5.2.4 Other California State Agencies

We work closely with other CA State Agencies to make sure our data is used to protect public health, and is communicated effectively in the public health space so that those that are most impacted by consuming contaminated fish and shellfish can make informed decisions to reduce their exposure to harmful pollutants in fish and shellfish.

- The Office of Environmental Health Hazard Assessment (OEHHA) is the lead state agency for the assessment of health risks posed by environmental contaminants. OEHHA uses our data to develop site specific and statewide fish advisories.

- The California Department of Public Health (CDPH) is the state department responsible for public health in California. We're building stronger relationships with some of their programs (e.g., Center for Healthy Communities) to more efficiently and effectively achieve our respective missions.

- The California Department of Fish and Wildlife (CDFW) is the state department responsible for managing California's fish, wildlife, and plant resources, and the habitats upon which they depend. We're building stronger relationships with some of their programs (e.g., Regional monitoring experts, Fishing in the City) to more efficiently and effectively achieve our respective missions.

5.2.5 Other State and Regional Water Board Programs

The State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Water Boards), collectively known as the California Water Boards (Water Boards) are dedicated to a single mission:

> To preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations.

Under the federal Clean Water Act (CWA) and the state's pioneering Porter-Cologne Water Quality Control Act, the State and Regional Water Boards have regulatory responsibility for protecting the water quality of nearly 1.6 million acres of lakes, 1.3 million acres of bays and estuaries, 211,000 miles of rivers and streams, and about 1,100 miles of exquisite California coastline!

There are a number of programs that partner with us and/or use our data to inform their work, including:

- Tribal Affairs and their Tribal Beneficial Use efforts
- Statewide Mercury Control Program
- Integrated Report Program
- TMDL Programs
- Bacteria Objectives
- Biostimulation, Cyanotoxins, and Biological Condition Provisions
- Ocean Standards Unit
- Wetlands Program
- Constituents of Emerging Concern (CEC)

- Per- and Polyfluoroalkyl Substances (PFAS)

For more details on how our data are used in some of these programs, see:

- How are bioaccumulation data used to protect and restore water quality in CA?
- How are bioaccumulation data used to protect human health in CA?
- General bioaccumulation data use FAQs

5.2.6 California Native American Tribes & Tribal Organizations

California Indian Environmental Alliance (CIEA): We work closely with our CIEA partners on a number of bioaccumulation related projects. CIEA is also an active member of the STEW!

We're working on building more relationships with California Native American Tribes through the Program's equity initiatives. See the Tribal Engagement FAQ for more information on how tribes and tribal organizations can engage with the Program and/or the STEW.

5.2.7 Other California Water Quality Monitoring Council Workgroups

Equity Workgroup: STEW Co-chairs are actively involved with this Workgroup and its efforts to operationalize equity in all levels of the Council.

We're working on building stronger partnerships with the following Workgroups:

- California Cyanobacteria and Harmful Algal Bloom (CCHAB) Network
- California Estuary Monitoring Workgroup
- California Water Quality Monitoring Collaboration Network
- California Wetland Monitoring Workgroup
- Healthy Watersheds Partnership
- California Ocean & Coastal Ecosystem Workgroup

5.2.8 Academic Institutions

We're working on building more relationships with the academic community so we can leverage our partnerships, advance needed research, and connect with emerging academics and future scientists and leaders of California! Partner academic institutions include:

- CSU-WATER (Water Advocacy for Education and Research)
  - CSU Northridge Water Science Lab
- CSU COAST (Council on Ocean Affairs, Science & Technology)

Are you at an academic institution conducting research related to bioaccumulation, fish advisory development, and/or statewide bioaccumulation monitoring efforts - but are not included in the list above? Please let us know by emailing the SWAMP Bioaccumulation Monitoring Program Coordinator & STEW Co-chair at Anna.Holder@waterboards.ca.gov!

Part III

Bioassessment

6 Workplan

This Workplan for the SWAMP Statewide Bioassessment Monitoring Program describes strategic projects and actions the Progam intends to implement to advance SWAMP's four thematic priorities and vision.

All of the Program's priority projects and associated actions are categorized under SWWAMP's four strategic themes: Program Management, Monitoring, Data Quality & Management, Communication & Engagement. For more information on each of these themes, see SWAMP Priorities (2025-2030).

Key: * = highest-priority actions for the current strategic planning period (2025 - 2030)

6.1 Program Management & Coordination

6.1.1 Project 1: 1 sentence description of project

Task/Action 1.1: 1-2 sentence description of task

6.2 Monitoring & Assessment

6.2.1 Project 2: 1 sentence description of project

Task/Action 2.1: 1-2 sentence description of task

6.3 Data Quality & Management

6.3.1 Project 3: 1 sentence description of project

Task/Action 3.1: 1-2 sentence description of task

6.4 Communication & Engagement

6.4.1 Project 4: 1 sentence description of project

Task/Action 4.1: 1-2 sentence description of task

Part IV

FHABs

7 Workplan

This Workplan for the SWAMP Statewide Freshwater and Estuarine Harmful Algal Bloom (FHAB) Program describes strategic projects and actions the Progam intends to implement to advance SWAMP's four thematic priorities and vision.

All of the Program's priority projects and associated actions are categorized under SWWAMP's four strategic themes: Program Management, Monitoring, Data Quality & Management, Communication & Engagement. For more information on each of these themes, see SWAMP Priorities (2025-2030).

Key: * = highest-priority actions for the current strategic planning period (2025 - 2030)

7.1 Program Management & Coordination

7.1.1 Project 1: 1 sentence description of project

Task/Action 1.1: 1-2 sentence description of task

7.2 Monitoring & Assessment

7.2.1 Project 2: 1 sentence description of project

Task/Action 2.1: 1-2 sentence description of task

7.3 Data Quality & Management

7.3.1 Project 3: 1 sentence description of project

Task/Action 3.1: 1-2 sentence description of task

7.4 Communication & Engagement

7.4.1 Project 4: 1 sentence description of project

Task/Action 4.1: 1-2 sentence description of task

Part V

Toxicology & Contaminants

8 Workplan

This Workplan for the SWAMP Statewide Toxicology & Contaminants (T&C) Program describes strategic projects and actions the Progam intends to implement to advance SWAMP's four thematic priorities and vision.

All of the T&C Program's priority projects and associated actions are categorized under SWWAMP's four strategic themes: Program Management, Monitoring, Data Quality & Management, Communication & Engagement. For more information on each of these themes, see SWAMP Priorities (2025-2030).

Key: * = highest-priority actions for the current strategic planning period (2025 - 2030)

8.1 Program Management & Coordination

8.1.1 Project 1: 1 sentence description of project

Task/Action 1.1: 1-2 sentence description of task

8.2 Monitoring & Assessment

8.2.1 Project 2: 1 sentence description of project

Task/Action 2.1: 1-2 sentence description of task

8.3 Data Quality & Management

8.3.1 Project 3: 1 sentence description of project

Task/Action 3.1: 1-2 sentence description of task

8.4 Communication & Engagement

8.4.1 Project 4: 1 sentence description of project

Task/Action 4.1: 1-2 sentence description of task

9 Contributing

9.1 Who can contribute

Currently, only members of the SWAMP Team are able to actively contribute to this manual.

9.2 How we contribute

We develop the content for this SWAMP Manual using RStudio, build the book using Quarto (via RStudio), and collaborate and publish using GitHub (also via RStudio).

If you are *NOT* a member of the SWAMP Team, but have suggestions for additions or revisions you think should be incorporated into this book, please [**TBD**]**.**

9.2.1 Setup

To contribute, SWAMP Team members must do the following, and it should only take about 20 minutes to complete:

1. **Install R and RStudio**

   Both R and RStudio should be available in the Software Center (for Windows 10) or Company Portal (for Windows 11) – if you don't see them in your Software Center/Company Portal or you have issues/questions during the instillation process, please send a request to the DIT HelpDesk and they can help you install them.

   Also see these step by step instructions on how to install these programs – you will only need to go through steps 1 and 2

   If you are new to R, it would also be helpful if you could review the Getting Started Module so you can begin to familiarize yourself with the fundamentals of the program.

2. **Install Quarto**

   Quarto download and install instructions

3. **Create a GitHub Account**

   Create your free personal account GitHub account

   Tips on choosing your username

4. **Download and Install Git**

   Follow your operating system's normal Git installation process. Note: you will not see an application called Git listed but if the installation process completed it was likely successful, and we will confirm together.