Original document to share with outside WB staff

Work Plan for the Statewide Bioassessment Program

The purpose of this workplan is to ensure the Surface Water Ambient Monitoring Program (SWAMP) Bioassessment Monitoring Program mission and vision are made concrete. It describes current priorities, and strategies to meet program objectives. It is adaptable and meant to be shared with others to inform our day to day work. The program vision, mission and priorities are stated up front as the plan's foundation.

This project work plan is consistent with priorities and general approach outlined in the SWAMP 2020-2023 Strategic Action Plan (SWAMP SAP).

Vision

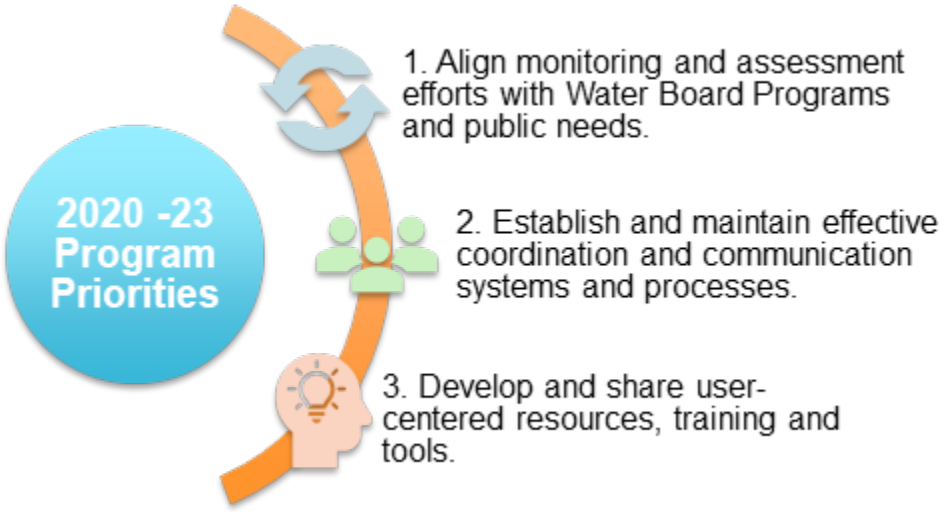
The Water Board monitoring data and information are used to inform decisions that help protect and restore California watersheds, and to provide Californian communities with easy to find, up to date information about the conditions of their local lakes, rivers and streams.

To fully integrate measures of ecological integrity into California's water resource management programs; California prioritizes this information to measure, protect and restore its waterbodies.

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. The goal of the Bioassessment Program is to develop the State Water Board's capacity to monitor the ecological condition of California's wadeable freshwater streams and rivers through the evaluation of biological data (i.e., bioassessment).

Progress will be documented in the 'Updates' section of each action table. Workplan will be updated bi-weekly during staff check-ins.



Program Background

Biological assessment (bioassessment) evaluates the condition of a waterbody based on the organisms living within it. It involves surveying the types and numbers of organisms present in the water and comparing the results to established benchmarks of biological health. Scientists and managers use this approach to directly and quantitatively measure the ecological health of a waterbody and to monitor the cumulative impacts of environmental stressors on surface waters.

The goal of the Bioassessment Program is to develop the State Water Board's capacity to monitor the ecological condition of California's wadeable freshwater streams and rivers through the evaluation of biological data (i.e., bioassessment). The program provides monitoring results to the Water Board and other managers to improve the protection and restoration of the state's freshwater streams and their watersheds. In pursuing these objectives, the program undertakes several activities, including:

- Generating bioassessment data through its core monitoring programs and through leveraging complementary programs
- Standardizing sampling and lab protocols to produce comparable bioassessment data
- Developing analytical tools (e.g., indices) to interpret bioassessment data
- Outreach, training, and facilitation to support use of bioassessment data in programs within and outside of the Water Boards.

The Bioassessment Program has primary oversight over two of SWAMP's statewide monitoring programs: the Perennial Streams Assessment (PSA) and the Reference Condition Management Program (RCMP). It also develops and maintains the infrastructure for conducting bioassessment in California including field and lab methods, data analysis tools and taxonomic standardization, and provides quality assurance for other monitoring programs. Data from the Bioassessment Program are used to assess the ecological status of California water bodies through the calculation of stream health scores.

The data produced by PSA are used to:

- produce long-term average estimates of stream conditions and ecological status, statewide and for each of the six major ecological subregions of the state.

The data produced by RCMP are used to:

- predict the expected natural composition of lotic freshwater organisms in streams throughout California.
- support the development and testing of indices (e.g., CSCI, ASCI, IPI).
- setting assessment thresholds by which stream health can be measured.
- placing high quality sites in Category 1 in the Integrated Report – aided in development of the Biostimulatory Substances Objective and Program to Implement Biological Integrity.
- provide baseline to assess the effects of drought and climate change and characterize "reference conditions" (i.e., conditions at minimally disturbed sites) to track the effects of climate change, and support the development of water quality objectives to include biological expectations and in-stream flow requirements.

Purpose of the Work Plan

The purpose of this program work plan is to clearly assign tasks, manage workflow and track the various program components and milestone deadlines. Work plan implementation will help to articulate strategic actions to program staff, management, and contractors and make connections to program priorities explicit.

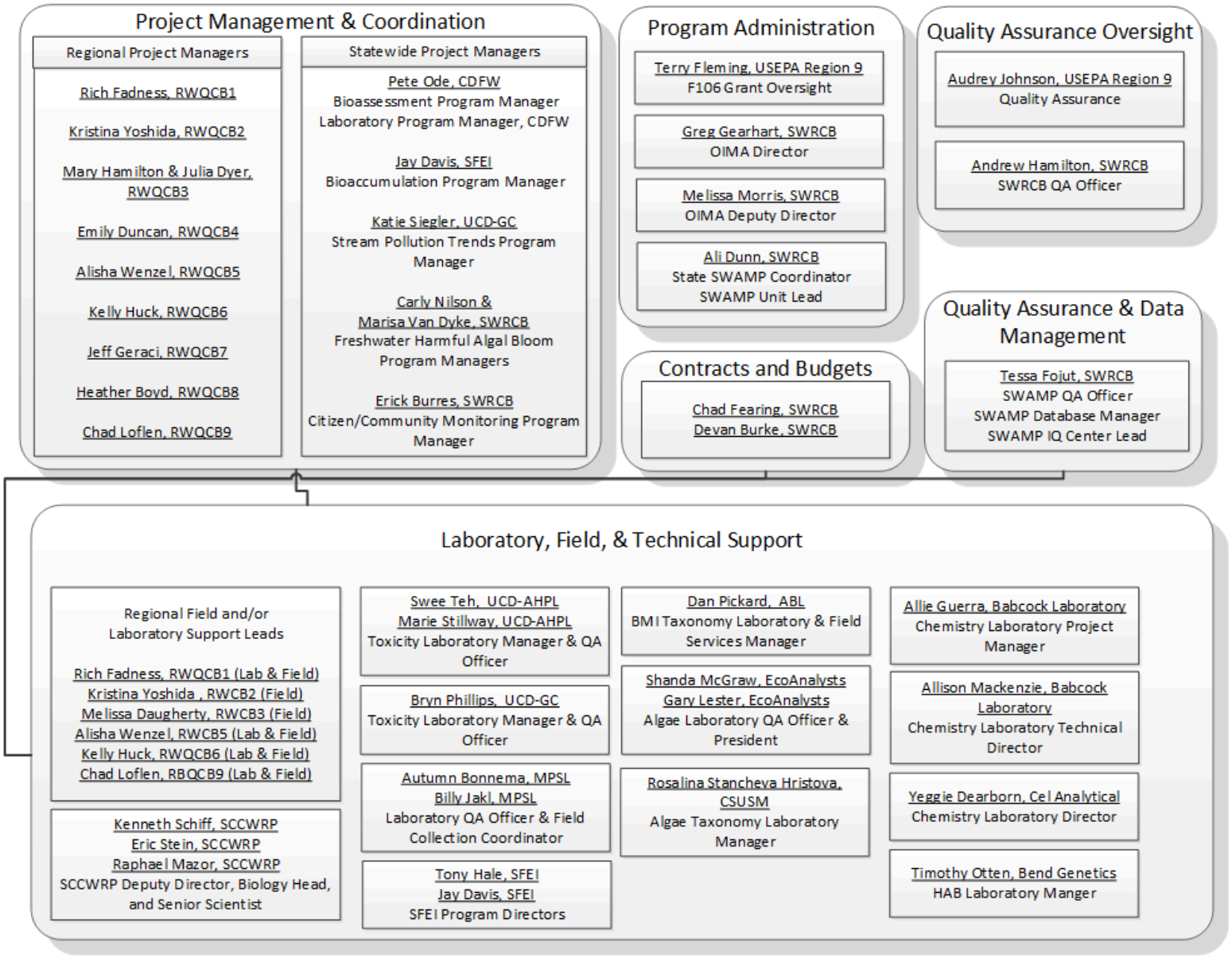
The Bioassessment program will adapt activities to ensure data and information are useful and used by program staff. This may include adjustments to monitoring design, communication strategies, assessment information, etc. Projects and actions to address data and information usability and use will be documented and regularly updated in this Work Plan.

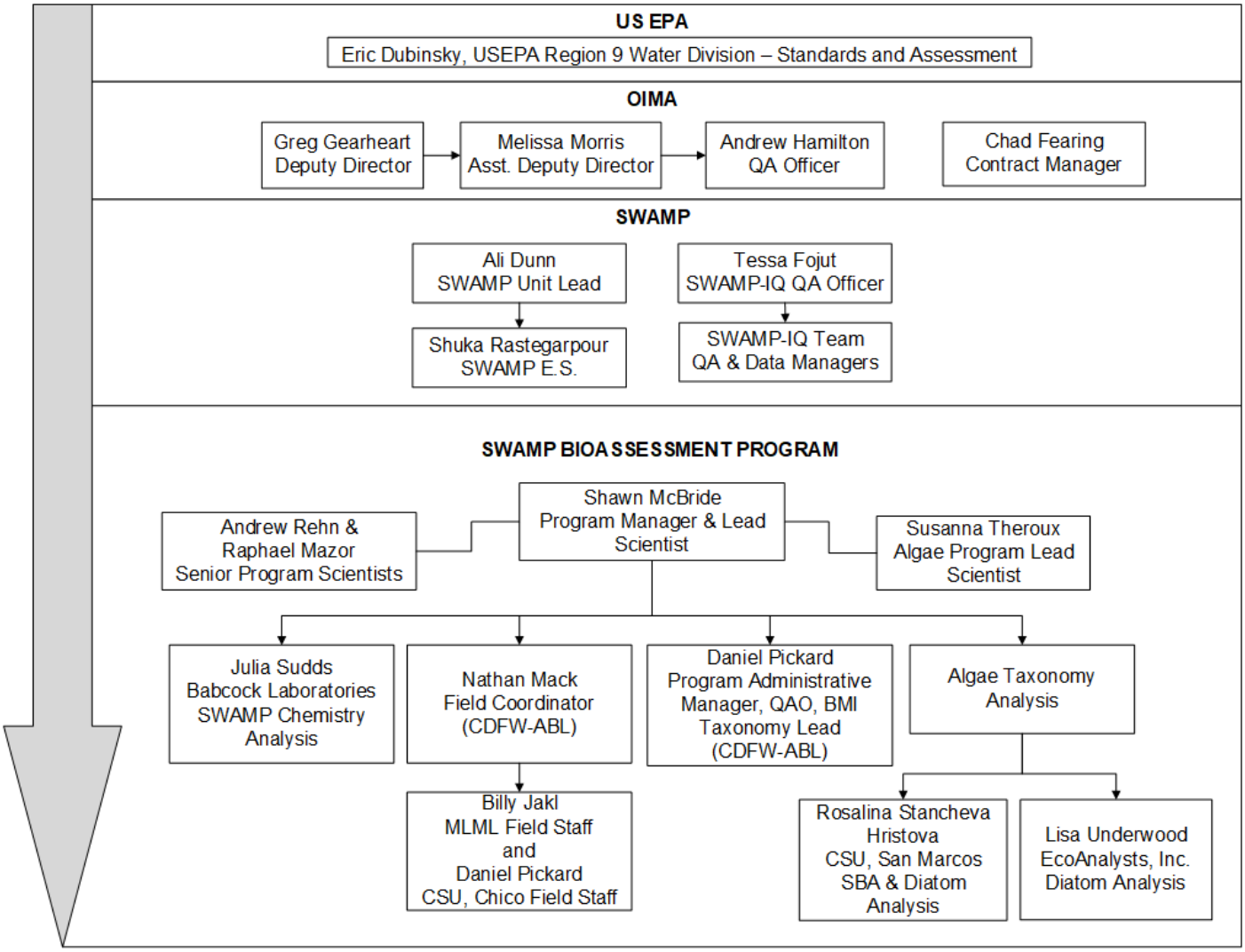
Support from program management is critical to ensure that program adaptations are worthwhile. As such, the Division of Water Quality Deputy Director, Office of Information Management and Analysis Deputy Director and United States Environmental Protection Agency Region 9 Coordinator will be briefed on planned program adaptations.

The Bioassessment program workplan will be kept up to date and shared to help communicate program progress towards alignment and integration.

Roles and Responsibilities

Detailed descriptions of roles and responsibilities of the individuals involved in the Program are included in the SWAMP QAPrP and also from the Bioassessment QAPP. The QAPP was developed to define the requirements for collecting data as a part of the Program, and describes the Program, the monitoring projects, and the roles and responsibilities of each member of the Program. General roles and responsibilities are summarized below:


Project Management & Coordination
Regional Project Managers
Rich Fadness, RWQCB1
Kristina Yoshida, RWQCB2
Mary Hamilton & Julia Dyer, RWQCB3
Emily Duncan, RWQCB4
Alisha Wenzel, RWQCB5
Kelly Huck, RWQCB6
Jeff Geraci, RWQCB7
Heather Boyd, RWQCB8
Chad Loflen, RWQCB9
Statewide Project Managers
Pete Ode, CDFW
Bioassessment Program Manager
Laboratory Program Manager, CDFW
Jay Davis, SFEI
Bioaccumulation Program Manager
Katie Siegler, UCD-GC
Stream Pollution Trends Program Manager
Carly Nilson & Marisa Van Dyke, SWRCB
Freshwater Harmful Algal Bloom Program Managers
Erick Burres, SWRCB
Citizen/Community Monitoring Program Manager
Program Administration
Terry Fleming, USEPA Region 9
F106 Grant Oversight
Greg Gearhart, SWRCB
OIMA Director
Melissa Morris, SWRCB
OIMA Deputy Director
Ali Dunn, SWRCB
State SWAMP Coordinator
SWAMP Unit Lead
Quality Assurance Oversight
Audrey Johnson, USEPA Region 9
Quality Assurance
Andrew Hamilton, SWRCB
SWRCB QA Officer
Contracts and Budgets
Chad Fearing, SWRCB
Devan Burke, SWRCB
Quality Assurance & Data Management
Tessa Fojut, SWRCB
SWAMP QA Officer
SWAMP Database Manager
SWAMP IQ Center Lead
Laboratory, Field, & Technical Support
Regional Field and/or Laboratory Support Leads
Rich Fadness, RWQCB1 (Lab & Field)
Kristina Yoshida , RWCB2 (Field)
Melissa Daugherty, RWCB3 (Field)
Alisha Wenzel, RWCB5 (Lab & Field)
Kelly Huck, RWQCB6 (Lab & Field)
Chad Loflen, RBQCB9 (Lab & Field)
Kenneth Schiff, SCCWRP
Eric Stein, SCCWRP
Raphael Mazor, SCCWRP
SCCWRP Deputy Director, Biology Head, and Senior Scientist
Swee Teh, UCD-AHPL
Marie Stillway, UCD-AHPL
Toxicity Laboratory Manager & QA Officer
Bryn Phillips, UCD-GC
Toxicity Laboratory Manager & QA Officer
Autumn Bonnema, MPSL
Billy Jakl, MPSL
Laboratory QA Officer & Field Collection Coordinator
Tony Hale, SFEI
Jay Davis, SFEI
SFEI Program Directors
Dan Pickard, ABL
BMI Taxonomy Laboratory & Field Services Manager
Shanda McGraw, EcoAnalysts
Gary Lester, EcoAnalysts
Algae Laboratory QA Officer & President
Rosalina Stancheva Hristova, CSUSM
Algae Taxonomy Laboratory Manager
Allie Guerra, Babcock Laboratory
Chemistry Laboratory Project Manager
Allison Mackenzie, Babcock Laboratory
Chemistry Laboratory Technical Director
Yeggie Dearborn, Cel Analytical
Chemistry Laboratory Director
Timothy Otten, Bend Genetics
HAB Laboratory Manger



Roles and Responsibilities of Statewide Program Coordinator:

- Serve as Water Boards internal communication liaison for the Bioassessment program
- Serve as communication liaison with Bioassessment program science leads (CDFW, CSU Chico, SCCWRP, etc.)
- Coordinate and facilitate the California Aquatic Bioassessment Workgroup Meeting and the Bioassessment Work Group Meeting
- Review contract deliverables in coordination with the Contract Manager
- Update and maintain Bioassessment Water Boards website
- Provide support and/or develop data visualization products for the Bioassessment program

Work Plan

Priority 1. Align and Integrate Monitoring and Assessment Efforts with Water Boards Programs

Goal: To ensure data generated by the SWAMP Bioassessment program is useful and used by Water Board and Regional Board program staff in support of their management activities aimed at protecting and/or restoring ecological health.

Objective: By 2023, increase number of State Board and Regional Board programs using/considering SWAMP bioassessment generated data in policy, permits and any other regulatory mechanisms. (to be compared to 2020)

Action 1.1. Conduct briefings and presentations to State Water Board program managers, executives and board members on the Bioassessment Program, including ecological data generated, resources, training and tools developed and available.

Brief Description:	The SWAMP program manager with support by program staff, will conduct a series of presentations and briefings to program managers in Division of Water Quality, Division of Water Rights and Division of Drinking Water; executive management and board members to inform them of the work plan and to solicit feedback on key programs to engage with to implement program priorities.
Team:	● Shawn McBride (Bioassessment Program Manager) ● Ali Dunn (Statewide SWAMP Program Coordinator) ● Raphael Mazor (Principal Scientist) ● Felisha Walls (Bioassessment Program Coordinator)
Timeframe and Duration:	Executive Management Summer 2021

	Staff Workshops: TBD
Resources Needed:	Staff time and contractor time
Key Communication & Collaboration Aspects:	Active engagement by program staff and management, executive management and board members. This includes: follow through of action items and identification of key programs and staff to work with.
Work Product(s):	● Board briefing package (e.g. Briefing document) ● Presentation slides ● Presentation and briefing summary notes
Updates:	● Board briefings conducted 2020, DWQ exec briefed 2021, presentation made to DWQ DMG 2021 ● Staff workshops have not been conducted due to COVID restrictions ● Beginning summer 2022: Targeted outreach to WB RTs TMDL, IR, 319(h) NPS, stormwater/npdes

Action 1.2. Establish State Water Board Division/Office and SWAMP/OIMA coordinator leads for bioassessment program and associated regulatory/non-regulatory project/program; conduct kick-off meetings and clearly define roles and responsibilities.

Brief Description:	The purpose of this action is to establish key points of contact that will support and maintain communication across State Water Board programs and with

	the bioassessment program science leads, introduce team members to one another and define roles and responsibilities. The establishment of coordinator leads across programs and science leads is needed to sustain coordination activities and critical communication feedback loops.
Team:	● OIMA/SWAMP ● Division of Water Quality supervisors and program leads ● SWAMP bioassessment program team
Timeframe and Duration:	Winter 2022, continuous
Resources Needed:	Staff time
Key Communication & Collaboration Aspects:	Coordinator lead roles and responsibilities will be included in each of the statewide program work plans (Action 2.1).
Work Product(s):	● Kick-off meeting agendas, presentation slides and summary notes ● Roles and responsibilities document for the Bioassessment program
Updates:	● Need to update roles and responsibilities document with DWQ lead contacts

Action 1.3. Create a Bioassessment program linkage/data disparity map

Brief Description:	The purpose of the program linkage map is to clearly illustrate data and information connections to/from data generated by the bioassessment program. This information will be used to identify areas of alignment as well as data gaps/misalignment, in conjunction with guidance from program and executive management (Action 1.1). In addition, the program linkage map can be used to communicate with community science groups, Water Quality Monitoring Council workgroups and other entities conducting monitoring to coordinate efforts and potentially fill in data gaps.
Team:	● Ali Dunn (Statewide SWAMP Program Coordinator)
Timeframe and Duration:	12 months
Resources Needed:	Staff time, data visualization software, access to data, contractor time
Key Communication & Collaboration Aspects:	This action relates to Action 1.1
Work Products:	● Inventory tables of SWAMP program purposes, analytes and field measures monitored/data generated ● Inventory tables of Water Board programs, purposes and data needs ● Program linkage/data disparity map that shows proposed program adaptations that would further fulfill Water Board program needs
Updates:	● Ali Dunn working on presentation to draw connections for all statewide programs

	● Ali Dunn to work with Lori to develop case study/example of linkages and working relationships between SWAMP data and program uses

Action 1.4. Adapt core monitoring program (PSA and RCMP) efforts to generate data needed by Water Board programs

Action 1.4.

Brief Description:	Monitoring plans are adapted annually based on Water Board program feedback received at the fall Bioassessment Workgroup meeting of the prior year. The purpose of this action is to ensure data collected by the program is useful and used by Water Board programs, such as Integrated Report/assessment, and other planning and implementation programs.
Team:	● Shawn McBride (Bioassessment Program Manager) ● Ali Dunn (Statewide SWAMP Program Coordinator) ● Raphael Mazor (Principal Scientist) ● Felisha Walls (Bioassessment Program Coordinator) ● Andrew Rehn (Senior Scientist) ● Bioassessment Workgroup
Timeframe and Duration:	Annually and ongoing
Resources Needed:	Contractor time, lab services, field crews, staff time
Key Communication & Collaboration Aspects:	
Work Products:	● Annual monitoring plan ● Bioassessment workgroup presentation slides and meeting notes

Updates:	● 1/26/2023: At the November Bioassessment Workgroup meeting options were presented to adapt the core monitoring program efforts to align with WB program needs (see notes for details and background). 2023 monitoring will focus on: ○ Repeat monitoring at select PSA sites that are scoring lower than we expect them to, and the program will do causal assessment for sites that are in fact performing lower than when first sampled and assessed.

Action 1.5. Create SWAMP Policy Recommendation Guidance/Framework/for use of bioassessment data.

Action 1.5.

Brief Description:	Purpose: provide a 'how-to guide' for use of bioassessment data for number of Water Board program applications. This would be accomplished through development of policy pathway documents/modules, for example: ● Bio Objectives/biointegrity – part of biointegrity policy package (include application of causal assessment)? ● Protecting healthy watersheds and high quality waters ● Setting in-stream flow targets/recommendations ● Performance standards for 401 certifications ● Integrated reports/TMDLs and alternatives to TMDL ● Use of bioassessment in NPDES/MS4
Team:	● Lead: Ali Dunn (Statewide SWAMP Program Coordinator)

	● Rebecca Fitzgeralnd (DWQ Program Lead) ● Felisha Walls (Bioassessment Program Coordinator)
Timeframe and Duration:	Spring 2023 - TBD
Resources Needed:	Contractor time, lab services, field crews, staff time
Key Communication & Collaboration Aspects:	
Work Products:	● SWAMP + DWQ Framework for use of bioassessment to protect biological integrity
Updates:	● 1/26/2023: Ali met with Rebecca Fitzgerald to discuss how SWAMP can support protection of biological integrity for various programs she oversees. Next steps - Ali+ Shuka to share outline with Rebecca and DWQ team, schedule brainstorm session, plan contract timing and funding with Devan Burke.

Priority 2. Establishment and maintenance of effective coordination and communication systems and processes

Goal: To institute a working communication feedback loop within the Bioassessment program and associated State Board programs that use SWAMP-generated bioassessment data and information, and for the public to understand ecological conditions of local waterbodies monitored by SWAMP.

Objective: By 2022, all associated State Board programs and community partnerships will be identified, and the most effective communication strategy will be established and implemented within each group.

Action 2.1. Quarterly meetings with California Fish and Wildlife and Southern California Coastal Water Research Project staff are to take place to effectively communicate updates, resolve questions, and manage the statewide program

Brief Description:	Routine meetings and other effective means of communicating are essential to be implemented so that all key bioassessment contractual partners are up to date on all programmatic components, resolve questions, and maintain the work plan.
Team:	● Felisha Walls (Bioassessment Program Coordinator) ● Shawn McBride (Bioassessment Program Manager) ● Ali Dunn (Statewide SWAMP Program Coordinator) ● Raphael Mazor (Principal Scientist) ● Chad Loflen (R9 SWAMP Coordinator) ● Andrew Rehn (Senior Scientist) ● Daniel Pickard (BMI Taxonomy and Field Services Manager)
Timeframe and Duration:	January 2021. Meetings will take place quarterly (every 3 months). However, the team will get together to discuss the method and frequency of team meeting/collaborative sessions to take place prior to implementation for the duration of the program implementation.
Resources Needed:	Staff time, contractor time
Key Communication & Collaboration Aspects:	A kick-off meeting will be held to review the draft version of the Work Plan and approve the contents, discuss the most effective communication strategy that works best within the group, and the frequency that discussions should be held.

Work Product(s):	• Agenda to be developed and distributed prior to each meeting so that discussions are organized • Meeting notes will be produced to outline: updates, changes to the program, unresolved questions, programmatic needs and action items
Updates:	• Felisha Walls to schedule quarterly meetings. Q1 prior to spring bioassessment workgroup meeting and Q3 prior to fall bioassessment workgroup meeting. • Ali Dunn to build draft agenda and add some ideas for discussion – monitoring results, more detailed monitoring plans, assessment tools, etc. contract deliverables updates.

Action 2.2. Actively and regularly engage in other Water Board program roundtable meetings, including presenting bioassessment program updates and reporting back to the SWAMP Roundtable and Bioassessment Workgroup with other program updates and information.

Brief Description:	Program roundtables provide a consistent platform to share and exchange information across programs. Based on feedback from in-depth workshops with program staff and management (Action 1.3 of the SWAMP SAP), SWAMP staff will regularly engage in related program roundtable meetings. Engagement includes providing regular updates and presentations on bioassessment training and available resources, monitoring methods/results/technologies, contracts, reports, etc.
Team:	• Felisha Walls (Bioassessment Program Coordinator)

Timeframe and Duration:	Spring 2020 and on, continuous
Resources Needed:	Staff time
Key Communication & Collaboration Aspects:	Active engagement by roundtable participants, follow through of action items, and connections built.
Work Product(s):	● Program information package ● Presentation slides
Updates:	● Felisha attending Integrated Roundtable and Stormwater Roundtable will provide updates to RTs as interest indicates after we do targeted outreach this summer

Action 2.3. Actively coordinate and manage contract deliverables, timeline, etc.

Brief Description:	The SWAMP program currently has three contracts in place in support of the Bioassessment Program: The Department of Fish and Wildlife, the Southern California Coastal Water Research Project, and California State University, Chico Aquatic Bioassessment Lab
Team:	● Shawn McBride (Bioassessment Program Manager) ● Ali Dunn (Statewide SWAMP Program Coordinator) ● Susanna Theroux (Principal Scientist) ● Daniel Pickard (BMI Taxonomy and Field Services Manager) ● Felisha Walls (Bioassessment Program Coordinator) ● Chad Fearing (Contract Manager)

Timeframe and Duration:	Fall 2020 and on, continuous
Resources Needed:	Staff time and contractor time
Key Communication & Collaboration Aspects:	Discussions concerning contract deliverables, deadlines, and timelines will be made during the Bioassessment program quarterly meetings (Action 2.1)
Work Product(s):	● Contract deliverables
Updates:	● 5/19/2022 Ali Dunn and Shuka Rastegarpour to be more involved in Contract development/reissuance language ● Need to track contract deliverables more closely as part of quarterly meetings with CDFW + others and include as part of our check-ins

Action 2.4. Bioassessment Program data flow documentation and storage

Brief Description:	The Bioassessment program collects data generated through the Perennial Streams Assessment (PSA) and the Reference Condition Management Programs (RCMP). The field data that is collected is used to calculate several different ecological indices. These calculate indices and the accommodating metadata should be stored in a public accessible place and easily accessible (i.e. California Environmental Data Exchange Network [CEDEN]). Additionally, all future indices and data collected should be loaded into CEDEN so that information is continuously accessible and available.
Team:	● Felisha Walls(Bioassessment Program Coordinator)

	● Ali Dunn (Statewide SWAMP Program Coordinator) ● Tessa Fojut (SWAMP Quality Assurance Officer)
Timeframe and Duration:	January 2020 and on, continuous
Resources Needed:	Staff time
Key Communication & Collaboration Aspects:	SWAMP staff must work with the data providers to ensure a smooth transition of data input into CEDEN and to continue data upload into CEDEN annually. These discussions can also be made during the Bioassessment Work Group Meetings.
Work Product(s):	● Consistent framework for biological data input to CEDEN, including data flow process and timeline ● Watershed delineation layers published in Portal
Updates:	● Shuka Rastegarpour and SWAMP IQ developed biological data input to CEDEN workflow ● Shuka Rastegarpour to continue providing data workflow timing updates at Fall BAWG and Winter SWAMP RT ● Publicly accessible Indices and associated metadata in CEDEN (As of November 2021): A total of 408 projects with associated CSCI and IPI scores are in CEDEN; and 286 of the projects were loaded in 2021. A total of 13K CSCI and IPI scores are in CEDEN; and ~12K of those scores were loaded in 2021. Programs include PSA, RCMP, USFS, Regions 2 and 6, and SF RMC (for Region 2) ● SMC data in CEDEN as of July 11, 2022

	• Added 440 analytes to the analyte table in SWAMP/CEDEN to allow upload of index scores and associated metadata • Added 11 Bioassessment Quality Assurance (QA) codes to appropriately flag data based on field ID • Added 1218 new vocabulary in the Field Observation Variables table for the Ephemeral Streams Project • 154 new Terrestrial Organisms added to the Organism lookup table • 1/25/2023 Watershed delineation layers project to be resumed Spring 2023. - Contact: Matt Brush, mbrush@csuchico.edu • 1/10/2022: Uploaded historical indices and associated metadata • Bioassessment data accessibility will be addressed through SWAMP reporting module documentation, data dashboard and communicated via bioassessment webpage – by Summer/Fall 2022

Priority 3. Development and sharing of user-centered assessment resources, training and tools

Goal: To create resources and tools based on the user's needs that are usable, manageable and accessible.

Objective: To update existing resources and develop new resources and tools within the next 3 years.

Action 3.1. Host the annual California Aquatic Bioassessment Workgroup Meeting with the California Society of Freshwater Science

Brief Description:	The annual California Aquatic Bioassessment Workgroup and the California Society of

	Freshwater Science meet to educate and inform current and up-to-date research on bioassessment and freshwater sciences. This meeting attracts researchers, policymakers, educators and students, and helps build partnerships.
Team:	• Shuka Rastegarpour (Bioassessment Program Coordinator) • Ali Dunn (Statewide SWAMP Program Coordinator) • Officers of the California Chapter of the Society for Freshwater Science
Timeframe and Duration:	7 months. Planning starts in March/April of every year and the event is held in October.
Resources Needed:	Staff time
Key Communication & Collaboration Aspects:	The team should meet on a weekly or bi-weekly basis once planning starts.
Work Product(s):	• Planning process agenda and supporting documentation • The California Aquatic Bioassessment Workgroup Meeting and the California Chapter of the Society for Freshwater Science Meeting • Speaker PowerPoint presentations • Video recording of the meeting
Updates:	• California Aquatic Bioassessment Work Group Meeting Page • 2021 Zoom Attendee numbers: 186 unique viewers on Day 1 and 153 unique viewers on Day 2 • 2022 Registered attendees: 272

Action 3.2. Conduct bi-annual bioassessment workgroup meetings

Brief Description:	The bi-annual bioassessment workgroup meeting is held for SWAMP partners (U.S EPA, F&W, SCCWRP, etc.) and Regional Board SWAMP coordinators to provide updates on their bioassessment program/monitoring activities, make group decision making, and to network and build partnerships with other agencies and Water Board programs.
Team:	● Shuka Rastegarpour (Bioassessment Program Coordinator) ● Ali Dunn (Statewide SWAMP Program Coordinator)
Timeframe and Duration:	Twice a year: late winter (February) and fall (October)
Resources Needed:	Staff time
Key Communication & Collaboration Aspects:	Major documents and reports are to be routed amongst the group to read ahead of time to prepare for discussions on the day of the workgroup meeting.
Work Product(s):	● Meeting notes ● Document and reports that are presented ● Speaker Powerpoint presentations
Updates:	

Action 3.3. Internal inventory and review of existing biological data interpretive tool and resources

Brief Description:	It is essential to review the existing resources and tools developed for this program and 1) identify its users and its usefulness, 2) identify areas of the product that should be enhanced, 3) identify additional areas of the product that can be improved for new users,

	4) update workplan to add action items for implementing proposed updates to existing resources/tools. This relates to Action 1.3 in the SAP.
Team:	● Ali Dunn (Statewide SWAMP Program Coordinator) ● Shuka Rastegarpour (Bioassessment Program Coordinator)
Timeframe and Duration:	Ongoing
Resources Needed:	Staff time
Key Communication & Collaboration Aspects:	An initial internal kickoff meeting will be held between State Board staff to discuss the existing resources and list out/prioritize the resources/tools that we believe will be beneficial to Regional Board staff and other associated agencies. Follow up meetings will be held with Regional Board staff that will also include discussions regarding action 3.4.
Work Product(s):	● Agenda to be developed and distributed prior to each meeting so that discussions are organized ● List of prioritized State Board resources/tools that current exist to present to the Regional Board ● Meeting notes will be produced to outline: discussion of each resource/tool, the need for the resource/tool, and whether enhancements to the existing resource/tools are needed, and who will be involved in updating the existing resources/tools. ● Work Plan to be updated with new actions for updating/creating new tools

Updates:	

Action 3.4. Conduct outreach and inquire program staff on the tools and resource needs

Brief Description:	This will open up a discussion on new resources/tools that will be useful to State and Regional Board staff that have not been developed yet. Workplan is to be updated to add action items for implementing proposed resources/tools. All resources/tools highlighted will be listed out and prioritized.
Team:	● Ali Dunn (Statewide SWAMP Program Coordinator) ● Shuka Rastegarpour (Bioassessment Program Coordinator)
Timeframe and Duration:	Ongoing
Resources Needed:	staff time
Key Communication & Collaboration Aspects:	The priority list is to be presented to the Regional Board staff to initiate discussions and ultimately develop a final list of resources/tools to consider.
Work Product(s):	● Agenda to be developed and distributed prior to each meeting so that discussions are organized ● List of prioritized resources/tools that are needed ● Meeting notes will be produced to outline: discussion of each resource/tool and the need for it, and steps moving forward for items to be developed and who would be involved in the development. ● Work plan to be updated
Updates:	

Action 3.5. Create and maintain a SWAMP Reporting Modules R Shiny Application

Brief Description:	The SWAMP Reporting module will be a central hub where all bioassessment information, resources, tools, and data, including metric index scores (e.g. ASCI, IPI and CSCI) will be accessed to help improve querying, accessibility, communication, and use of the data. The primary users for this Reporting Module are technical staff.
Team:	● Anna Holder (Support Staff)
Timeframe and Duration:	Spring 2024
Resources Needed:	Staff time and R Shiny Application
Key Communication & Collaboration Aspects:	It is ideal for this action to be implemented after all new and existing resources/tools are developed, and then all items are organized onto the bioassessment dashboard platform.
Work Product(s):	● SWAMP Reporting Module R Shiny Application
Updates:	● Anna Holder presented at the March 23, Bioassessment Work Group Meeting and asked for feedback for future use of the reporting module and will kickoff a Technical Advisory Group discussion in Summer 2022 ● Anna Holder started developing the Data Management Plan to describe the goals of the Reporting Module. Draft as of 5/17 ● 1/26 Final Data Management Plan ● Progress shown on GitHub ○ GitHub Repository

	○ SOP Documentation

Action 3.6. Create and maintain bioassessment dashboard, including index scores (ASCIs, IPI and CSCI) to communicate results of and data generated by Bioassessment monitoring program.

Brief Description:	The bioassessment dashboard will be a central hub where all bioassessment information, resources, tools, and data, including metric index scores (e.g. ASCI, IPI and CSCI), will be displayed to help improve accessibility, communication, and use of the data.
Team:	● Michelle Tang (Support Staff)
Timeframe and Duration:	Summer 2022, 12-month period to compile and program.
Resources Needed:	Staff time
Key Communication & Collaboration Aspects:	It is ideal for this action to be implemented after all new and existing resources/tools are developed, and then all items are organized onto the bioassessment dashboard platform.
Work Product(s):	Bioassessment dashboard
Updates:	● Public Beta released of the Data Dashboard ● 1/26/2023: CSCI and IPI scores are available on SWAMP dashboard. Need to follow-up with Rafi and Andy for list of reference sites. Michelle will update dashboard to highlight reference sites, status and include photos where available. Scope incorporation of SCAPE layers into dashboard (Michelle and Rafi).

	○ Ali to follow-up with Michelle by 2/2/2023

Action 3.7. Update, Develop and Maintain Bioassessment Training Courses

Brief Description:	The Training Academy courses are to be redeveloped to better communicate the goal of the Bioassessment Program and to additionally train students for the tools, resources, and data available for use.
Team:	● Shuka Rastegarpour (Bioassessment Program Coordinator)
Timeframe and Duration:	Summer 2022, completed
Resources Needed:	Staff time
Key Communication & Collaboration Aspects:	Staff will need to outline the courses and find committed instructors for the designated courses and ensure that they have the resources and tools needed to teach the course.
Work Product(s):	● Bioassessment Training Academy Course Proposal
Updates:	● Bioassessment 101: An Introduction to Bioassessment Summer date: 7/12/2022 ● Bioassessment 101: An Introduction to Bioassessment Spring date: 3/23/2023

Action 3.8 Update bioassessment webpage to put data and information front and center

Brief Description:	The Bioassessment program webpage is the central location where the public can have easy access to data, Standard Operating Procedures, Reports/publications, and resources for monitoring.
Team:	● Shuka Rastegarpour (Bioassessment Program Coordinator)
Timeframe and Duration:	Fall 2023, 3-6 months and continuous
Resources Needed:	Staff time.
Key Communication & Collaboration Aspects:	Staff will need to coordinate the SWAMP IQ staff to ensure proper display of information.
Work Product(s):	● Webpage mockup ● Survey form to receive responses to the mockup proposal ● Priority list of documents that needs to become accessible ● Web Request Forms ● Accessibility Reports ● A Bioassessment Program webpage that is accessible and easily navigable.
Updates:	● 6/10/2022 Working with SWAMP IQ to check overlap on links and available documents before proceeding to update the webpage ● 7/1/2023 Made all document on webpage accessible ● 7/1/2023 Archived old documents on webpage and placed in H drive

Action 3.9 Collaborate with Healthy Watersheds Partnership to provide ecological data and support development of landscape assessment tool

Brief Description:	SWAMP/OIMA is engaged in a multi-disciplinary, multi-agency effort called the Healthy Watersheds Partnership (HWP) to monitor and assess the conditions of stream and river ecosystems to better inform the public, resource managers and decision makers. One goal of the HWP is to create an objective landscape assessment tool in the form of a web-based platform, or dashboard, that will allow a user to easily leverage relevant datasets to better understand the condition of their watershed and potentially their local waterbodies and subject these data to analysis tailored to a specific outcome.
Team:	● Ali Dunn (Statewide SWAMP Program Coordinator) ● Shuka Rastegarpour (Bioassessment Program Coordinator) ● Corey Clatterbuck (Support Staff)
Timeframe and Duration:	Spring 2019-Spring 2021
Resources Needed:	Staff time.
Key Communication & Collaboration Aspects:	Attend HWP meetings and provide support for the development of the landscape assessment tool.
Work Product(s):	● HWP landscape assessment dashboard
Updates:	●

Action 3.10 Explore integration of indices for management use and decision support.

Brief Description:	The storage of ecological indices into CEDEN (Action 2.4) should be an accessible resource that can be used by DWQ program managers. SWAMP, DWQ Bioassessment coordinators (Action 1.2) and program manager will explore the applicability of ecological index integration into their program use and decision making.
Team:	● Ali Dunn (Statewide SWAMP Program Coordinator)
Timeframe and Duration:	12 months
Resources Needed:	Staff time.
Key Communication & Collaboration Aspects:	Work with DWQ coordinator lead/s identified in Action 1.2 to engage with DWQ programs that can use and incorporate ecological indices into their program decision making.
Work Product(s):	● Meeting Notes ● Meeting resources and documentation ● Presentation Slides ● State Board use of ecological indices for program support and decision making
Updates:	●

pHAB index, long term assessment in reference sites

1:1 with Regions on Bioassessment plans