



Monitoring Plan

2012

**North Coast Regional Water Quality
Control Board**

Russian River

Freshwater Beaches Monitoring Program

April 2012



www.waterboards.ca.gov/swamp

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Introduction

The Porter-Cologne Water Quality Control Act and the federal Clean Water Act (CWA) direct that water quality protection programs be implemented to protect and restore the integrity of waters of the State. California Assembly Bill 982 (Water Code Section 13192; Statutes of 1999) requires the State Water Resources Control Board (SWRCB) to assess and report on the State's water quality monitoring programs.

AB 982 required the SWRCB to prepare a proposal for a comprehensive surface water quality monitoring program. The SWRCB report to the Legislature entitled, "Proposal for a Comprehensive Ambient Surface Water Quality Monitoring Program" (November 2000 Legislative Report) proposed to restructure existing water quality monitoring programs into a new program, the Surface Water Ambient Monitoring Program (SWAMP). The SWAMP was envisioned as an ambient monitoring program that would be independent of, yet coordinated with, other water quality regulatory programs, and serve as a measure of: (1) the overall status of the beneficial uses of the State's water resources, and (2) the overall effectiveness of the prevention, regulatory, and remedial actions taken by the State Water Board and the nine Regional Water Quality Control Boards (RWQCB). To implement this directive, funding for ambient surface water quality monitoring was allocated to the State Water Board (and thereby to the Regional Water Boards) beginning in State Fiscal Year 2000–2001.

Overview of the Surface Water Ambient Monitoring Program (SWAMP)

The SWAMP is a comprehensive environmental monitoring program focused on providing the information the SWRCB and RWQCBs need to effectively manage the State's water resources. The SWAMP is designed to integrate all existing water quality monitoring occurring at the SWRCB and RWQCBs and coordinates with monitoring programs at other agencies, permitted facilities, and citizens groups. The RWQCBs establish monitoring priorities for the water bodies within their jurisdictions, in coordination with the SWRCB. This monitoring is done in accordance with the protocols and methodologies laid out in the SWAMP program.

SWAMP Goals

SWAMP is intended to meet four goals:

1. Create an ambient monitoring program that addresses all hydrologic units of the State using consistent and objective monitoring, sampling and analytical methods; consistent data quality assurance protocols; and centralized data management. This will be an umbrella program that monitors and interprets those data for each hydrologic unit at least one time every five years.
2. Document ambient water quality conditions in potentially clean and polluted areas. The scale for these assessments ranges from the site-specific to statewide.
3. Identify specific water quality problems preventing the SWRCB, RWQCBs, and the public from realizing beneficial uses of water in targeted watersheds.
4. Provide the data to evaluate the overall effectiveness of water quality regulatory programs in protecting beneficial uses of waters of the State.

As designed, the Surface Water Ambient Monitoring Program (SWAMP) is a combination of (1) regional monitoring to provide a picture of the status and trends in water quality and (2) site-

specific monitoring to better characterize problem and clean locations. This approach balances these two important monitoring needs of the SWRCB and serves as a unifying framework for the monitoring activities being conducted by the SWRCB and RWQCBs. The coordinated SWRCB and RWQCB involvement in study design and sampling is critical to providing comprehensive, effective monitoring (Report to the Legislature, November 30, 2000, Pg. iv).

Although the original intent was to develop a program with adequate and secure funding to meet these goals, sufficient funding was never secured to create and fully implement a complete and robust region-wide monitoring plan as well as site-specific studies as outlined in the original design. As a consequence, the North Coast Regional Water Quality Control Board's (Regional) SWAMP monitoring efforts through fiscal year (FY) 2007-08 focused on the first component of the overall program design, "regional monitoring" of status and trends. The "regional monitoring" component of the Regional SWAMP Program is responsive to the four stated goals of the statewide SWAMP Program, but is most responsive to goals 1, 2, and 3. Beginning in calendar year (CY) 2008, through a change in contracting and implementation of our monitoring efforts, the Regional SWAMP effort has been able to expand the scope of the Program to include "site-specific" monitoring to more fully respond to goals 3 and 4.

The watershed evaluation process employed by the North Coast Regional Water Quality Control Board (Regional Board) is responsive to the Watershed Management Initiative as called for in the State Water Resources Control Board Strategic Plan (updated in 2001). Implementation of the Watershed Management Initiative involves designating Watershed Management Areas (WMAs) and performing monitoring with the following objectives:

- Assessing water quality related issues on a watershed basis,
- Developing prioritized water quality goals for watersheds from the issues, and
- Addressing the issues with various programs.

Regional SWAMP Program Goals and Objectives

The Regional SWAMP program now includes multiple active projects, and is also in the process of analyzing data and preparing reports for two past projects. All of these projects are intended to meet the above four stated goals of the SWAMP Program (see page 2):

Current Projects:

- Status and Trends in the North Coast Region (FY2000-01 – present)
 - Addresses Goals 1, 2 and 3
- Garcia River Watershed Condition Monitoring (CY 2008 – present)
 - Addresses Goals 3 and 4
- Augmentation of the statewide SWAMP Reference Condition Monitoring Program (RCMP) (CY 2010 – present)
 - Addresses Goals 3 and 4
- Russian River Freshwater Beaches Monitoring Program (CY 2011 – present)
 - Addresses Goals 2, 3 and 4

Past Projects:

- South Fork Eel Nutrient Study (CY 2010)
 - Addresses Goals 3 and 4
- Russian River Nutrient Study (CY 2011)

- Addresses Goals 2, 3 and 4

This document only represents the monitoring plan for the Regional Board's Russian River Freshwater Beaches Monitoring Program for calendar year 2012, while the other projects listed above are addressed by separate monitoring plans which can be found on the State Water Board's SWAMP website:

http://www.waterboards.ca.gov/water_issues/programs/swamp/regionalreports.shtml

North Coast Region's Goals and Objectives for the Russian River in 2012

The goal for the Regional Board's SWAMP effort is to monitor and report on indicator bacteria concentrations as determined through the use of IDEXX® Enterolert and Colilert procedures. The data is provided to the Sonoma County Public Health Department for the determination of public beach use warnings or closures. In addition, the data is reported on the Regional Board's website, allowing the public to make informed decisions regarding beach use. This monitoring program is designed to answer the question, "Is It Safe to Swim In Our Waters?"

Environmental Setting

Sections of the Russian River have been listed under the Clean Water Act Section 303(d) for impairment due to elevated concentrations of indicator bacteria. Elevated bacteria concentrations pose a human health risk to water contact recreationists in the community. A TMDL is currently under development.

Regional Board staff are monitoring the Russian River for indicator bacteria to identify contamination. Potential contamination has been identified in three areas of the lower and middle Russian River watershed (Hydrologic Units 114.10 and 114.20). This has led to the placement of waters within these areas on the federal Clean Water Act Section 303(d) list of impaired waters. The contamination identified has been linked to impairment of the contact recreation (REC-1) and non-contact recreation (REC-2) designated beneficial uses. Health advisories have been published and/or posted by Sonoma County and the City of Santa Rosa authorities.

Water Quality or Regulatory Criteria

The North Coast Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan) (NCRWQCB, 2007) promulgates specific Water Quality Objectives (WQOs) for indicator bacteria in the Middle and lower Russian River watershed. These WQOs are established to protect REC-1 beneficial use. The Basin Plan includes both narrative and numeric WQOs as described below:

"The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels. In no case shall coliform concentrations in waters of the North Coast Region exceed the following: In waters designated for contact recreation (REC-1), the median fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed 50/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml."

Monitoring History – 1996-2011

Beginning in 1996, the Regional Board collaborated with the Sonoma County Department of Health Services to begin the implementation of an instream water quality monitoring program, focusing on the monitoring of indicator bacteria at recreational freshwater beaches within the Russian River watershed. In 2011, the NCRWQCB obtained an accreditation from the California Department of Public Health, Environmental Laboratory Accreditation Program to operate a microbiology lab for processing samples utilizing the IDEXX® Enterolert and Colilert Quantitray procedures.

In 2011, the Regional Board began data collection for the development of the Russian River Indicator Bacteria TMDL for selected stream reaches on the mainstem Russian River and some select tributaries, as outlined on the federal Clean Water Act Section 303(d) list of impaired waters.

Site Selection

Site selection for the Russian River Freshwater Beaches Monitoring Program is based on locations of the public beaches in the Russian River watershed.

Sample Collection

Samples will be collected on a weekly basis and analyzed by the Region-1 Microbiology Laboratory beginning on May 17 and ending October 11, for a total of 22 sampling events. Samples will be collected on Thursdays of each week to provide the most current conditions prior to weekend beach use by the public.

The field crew will collect the samples at sites where the geo-coordinates were previously recorded on the site reconnaissance form during past field work at these stations, (See Table 1). Sample collection and subsequent processing and testing will be performed according to protocols specified in the most recent version of the SWAMP Quality Assurance Program Plan (QAPrP) and region-specific QAPP's/SOP's.

Table 1. Sampling Locations

Station ID	Station Name	Location	Latitude	Longitude
114RR4234	Alexander Valley Campground	Alexander Valley Road	38.65857	-122.82969
114RR3119	Camp Rose	Camp Rose Road	38.61361	-122.83115
114RR2940	Memorial Beach	Old Redwood Hwy	38.60357	-122.85993
114RR2036	Steelhead Beach	Old River Road	38.50024	-122.89944
114RR1898	River Access Beach	River Drive	38.51073	-122.92384
114RR1325	Johnson's Beach	Church Street	38.49938	-122.99900
114RR0898	Monte Rio Beach	Bohemian Hwy	38.46604	-123.00926
114RR5748	Cloverdale River Park	Crocker Road	38.82307	-123.00985

Analysis

During all weekly site visits, the Regional Board will collect standard field parameters, and grab samples for the analysis of e-coli, enterococcus and total coliform. Table 2 lists the individual constituents.

Table 2. Analytes per Sample Category.

Field Measurements	
Dissolved Oxygen	pH
Specific Conductivity	Temperature
Bacteria	
Total Coliforms	E. coli
Enterococcus	

Field Measures

Field measurements for dissolved oxygen (DO), specific conductivity, pH, and temperature will be collected using a Yellow Springs Instrument (YSI) 600XL Datasonde (Sonde) and 650MDS (Multiparameter Display System). All field equipment is calibrated using certified calibration standards and following the manufacturer specifications prior to and following each sampling event. Calibration records are maintained at the Regional Board office and are used to determine instrument accuracy.

Indicator Bacteria

E. coli and total coliforms analysis will be conducted by the Region-1 Microbiology Laboratory, utilizing the IDEXX, Colilert®. *Enterococcus* analysis will be conducted by the Region-1 Microbiology Laboratory, utilizing the IDEXX, Enterolert®.

Quality Assurance

This monitoring study will be consistent with the SWAMP Quality Assurance Program Plan (SWAMP 2008).

Data Management

All data from this study will be managed in accordance with the SWAMP data Management Plan (2009) and SWAMP Standard Operating Procedures (SOPs). Data will be entered and stored in the SWAMP v2.5 Database. Regional Board Staff will load field sheet, field parameter, and bacteria data into the database.

Data in the SWAMP Database will be made available to the public through the California Environmental Data Exchange Network (CEDEN). Information on CEDEN is available at www.ceden.org.

Schedule and Reporting

This project will focus on microbiological monitoring of freshwater recreation beaches in the middle and lower Russian River watershed. It will consist of seasonal water sample collection and laboratory analyses. The project will provide data sets after each sampling event.

Data generated by this effort will enhance the State's ability to answer the general question: "Is It Safe to Swim In Our Waters?". Data generated can be used to comply with the Clean Water Act Sections 305(b) and 303(d) Integrated Report, which aims to assess all of California's waterbodies for impairment identification and protection. Data from this effort will aid in evaluating the success of TMDLs;

Monitoring for the 2102 calendar year will begin in May 2012 and continue through October 2012. Data analysis will be performed continuously throughout the life of the project and results will be posted on the Regional Board's website in an ongoing basis. In addition, the data will be shared with the Sonoma County Public Health Department for evaluation and determination of possible recreational beach warnings or closures to protect human health.

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