SWAMP
Surface Water Ambient Monitoring Program

Monitoring Plan	2012 - 2015

North Coast Regional Water Quality Control Board

Water Quality Status and Trends

January 2012

California Water Boards

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 North Coast Region's Status and Trends Monitoring Program for calendar years 2012-2015. This monitoring plan focuses specifically on the status and trends portion of the Regional SWAMP program 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

Status and Trend Monitoring Program

Overview

It is intended that this portion of Regional SWAMP Program will target specific locations in each Hydrologic Unit (HU) (see figure 1), and focus on collecting information from sites in water bodies of the State to support remedial actions as well as the potential listing or delisting under Clean Water Act Section 303(d). Information collected through this program will also be used in the development of TMDLs as appropriate, as well as monitor the effectiveness of implementation activities in which TMDLs currently exist.

Permanent or long-term monitoring stations have been established throughout the region as early as 2001, while the most recent status and trend stations will be established during the course of this four-year plan to broaden the Regional Board's understanding of water quality conditions within the north coast region. All stations will be sampled at the same frequency and time of year in each of the four years.

CY2012 represents the twelfth year of the Regional Board's Status and Trend Monitoring Program. The goal for the Status and Trend Monitoring Program is to monitor and assess the ambient water quality in the watersheds of the north coast region to determine if beneficial uses are being protected. This monitoring project is designed to answer the following questions:

- What is the spatial variability of ambient water quality in the north coast region?
- What is the seasonal variability of ambient water quality in the north coast region?
- What is the temporal variability or trends of ambient water quality in the north coast region?
- Is there evidence that beneficial uses are not being protected in the north coast region?

The Regional SWAMP Program rotates through watersheds on a planned basis as resources allow. The Regional Board believes that this is the best use of resources at this time: to focus on a few watersheds at a time, cycling back through them every four years as funding allows. Having the cycle identified and the goals prioritized will make resource needs more apparent.

The watersheds are prioritized based on a number of factors, including any known or suspected water quality impairment, adequacy of existing data, the extent of development and/or land use change, likelihood for water quality to degrade or improve, and the availability of management tools to address the problematic areas.

FY2000-01 through FY2004-05

The Regional SWAMP Program began the Status and Trend Monitoring Program in FY2000-01. Our original monitoring design, utilized a two-component approach to address regional monitoring: 1) long-term monitoring "permanent" sites for trend analysis, and 2) rotating "temporary" sites for basin surveys. The original rotation schedule was closely coordinated with the TMDL development schedule to provide additional current information on water quality parameters to the TMDL development process.

Under this approach, an original set of (29) "permanent" long-term stations were developed and monitored on a yearly basis, while (74) "temporary" stations were established as rotating stations and sampled at the same frequency and time as the trend stations for that particular yearly rotation cycle only.

FY2005-06 through FY2007-08

Beginning with FY2005-06 the Regional SWAMP program realized reductions in programmatic funding coupled with increasing contracting costs. Sufficient resources were not available to effectively address both components of our original Status and Trends monitoring design. Consequently, the monitoring efforts from FY2005-06 through FY2007-08 were mainly focused on maintaining most (19) of the original long-term stations.

The "permanent" stations that were not maintained during this time were mostly located within the Trinity and Klamath River watersheds where TMDLs had been completed or additional data was not required to complete the TMDLs under development.

FY2008-09 through CY2011

In March 2008, Regional Board staff issued a report, "Summary Report for the North Coast Region (RWQCB-1) for years 2000-2006", of the data collected by the status and trend monitoring program from FY2000-01 through FY2005-06. The report demonstrated that, in general, the water quality conditions in the north coast region were mostly of sufficient quality to meet most of the beneficial uses as outlined in the North Coast Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan). However, data collected did not provide sufficient information for current 303(d) listed waterbodies to be delisted, and instead added five new waterbodies to the 303(d) list for impairments due to excess water column aluminum concentrations. These waterbodies were the Lower Eel River, Middle Fork Eel River, Middle Main Eel River, South Fork Eel River, and Gualala River.

Beginning in CY2008, the Regional Board determined that the Regional SWAMP Program should expand the monitoring efforts to include "site-specific" monitoring to document ambient water quality conditions in potentially clean and polluted areas and provide data to evaluate the overall effectiveness of our regional water quality regulatory programs, while still maintaining the Status and Trend Monitoring Program.

To meet this additional goal of site-specific monitoring, the Status and Trend Monitoring Program ceased yearly site visits to long-term trend sites and instead began sampling the sites on a four-year rotation basis. This allowed the Regional SWAMP Program to visit 20 of the original long-term sites and 20 of the original rotating basin sites during this 3 year period.

CY2012 through CY2015

For CY2012 through CY2015, the Regional SWAMP Program will continue the four-year sampling rotation. This effort will focus on visiting 28 of the original long-term sites and 38 of the rotating basin sites, while also adding 12 new sites that will provide important additional information to assist in establishing more complete watershed-wide datasets as well as data from areas that have not been sampled in the past.

North Coast Region – Description

The north coast region comprises all of the watershed basins draining into the Pacific Ocean from the California-Oregon state line (including Lower Klamath Lake and Lost River basins) south to the southern boundary of the watershed of the Estero de San Antonio and Stemple Creek in Marin and Sonoma Counties (Figure 1). The North Coast Region covers all of Del Norte, Humboldt, Trinity, and Mendocino Counties, major portions of Siskiyou and Sonoma Counties, and small portions of Modoc, Glenn, Lake, and Marin Counties. The North Coast Region encompasses a total area of approximately 19,390 mi^2; including 340 miles of scenic coastline, 362 miles of designated Wild and Scenic Rivers, 416 mi^2 of National Recreation Areas, and 1627 mi^2 of National Wilderness Areas, as well as urbanized and agricultural areas.

The north coast region is characterized by steep, mountainous forested terrain with distinct temperature and precipitation zones. The climate along the coast is mild and foggy, experiencing moderate variations in seasonal temperatures. In these temperate areas, coastal redwoods and Douglas fir-tanoak forests dominate the landscape. Inland areas, away from the coastal influence, undergo more extreme seasonal temperature ranges with seasonal maximums of more than 100°F. Oaks and pines interspersed with grasslands and chaparral are more common inland. The region experiences significant amounts of rainfall, with precipitation exceeding 100 inches annually in coastal areas, and can have as little as 10 inches annually fall on the Modoc Plateau. This large amount of precipitation can create significant flooding in the region, and produced three devastating floods in the 20^{th} century.

The north coast region is rich in wildlife resources. Deer, elk, bears, mountain lions, and many upland bird and mammal species can be found in the region. Additionally, the region is home to several species listed as threatened or endangered under the Federal Endangered Species Act (FESA). Aquatic systems are a valuable resource. Tideland areas along the north coast provide important habitat for marine invertebrates and nursery areas for forage fish, game fish, and crustaceans as well as foraging habitat for many species of waterfowl and shore birds. Numerous streams, rivers, and reservoirs support both coldwater and warmwater fish.

Major components of the economy are tourism and recreation, logging and timber milling, aggregate mining, commercial and sport fisheries, sheep, beef and dairy production, and vineyards and wineries.

The North Coast Regional Water Quality Control Board faces numerous water quality issues. Overarching issues for the North Coast Region are the protection of the coastline, protection and restoration of anadromous fish populations, protection of drinking water, and pollution prevention. Flow in rivers and streams is becoming an issue, as is the use of agricultural

chemicals in vineyards. Lack of or limited funding for water quality monitoring and watershed assessment compounds the difficulty of addressing these issues.

Due to the rural nature of the north coast, the north coast region has very little data on surface water quality in most of our watersheds, with the exception of the Russian River watershed and the Klamath River Basin in California. In preparation for the 2008 Integrate Report, approximately 63% of the data submitted review and consideration in the north coast region came from the Regional SWAMP Program's Status and Trends Monitoring Program.

The general driving force for the Regional SWAMP Program's Status and Trends Monitoring Program will be to continue the effort to document the status and trends in water quality and to increase the number of stations sampled throughout the north coast region.

Site Identification and Monitoring Activities

The North Coast Region includes 14 Hydrologic Units (see figure 1):

- Winchuck River Hydrologic Unit (101)
- Rogue River Hydrologic Unit (102)
- Smith River Hydrologic Unit (103).
- Klamath River Hydrologic Unit (105).
- Trinity River Hydrologic Unit (106).
- Redwood Creek Hydrologic Unit (107).
- Trinidad Hydrologic Unit (108)
- Mad River Hydrologic Unit (109)
- Eureka Plain Hydrologic Unit (110)
- Eel River Hydrologic Unit (111).
- Cape Mendocino Hydrologic Unit (112)
- Mendocino Coast Hydrologic Unit (113)
- Russian River Hydrologic Unit (114)
- Bodega Hydrologic Unit (115)

Of the 14 Hydrologic Units, the Winchuck River and Rogue River Hydrologic Units (HU 101 and 102 respectively) are predominantly Oregon waterbodies with limited watershed areas that are included within the Regional Board's jurisdiction. Therefore the Regional Board does not include these waterbodies in the status and trends program, but instead focuses on the waterbodies which are predominantly within California.

North Coast SWAMP Monitoring Sites

Watershed site selection targets: a) the integrator sites located low in the watershed, b) the discharge of a major tributary which drains the watershed, and c) multiple locations along the main stem usually upstream or downstream of major tributary inputs. Long-term trend monitoring locations chosen for each of the subsequent four years are shown in Tables 1- 4 and shown spatially in figure 2. All sites will be sampled five times per year for field measurements, conventional water quality, metals, and seasonally for pesticides, see Table 5 for sample timing. The first three numbers of each station code represents the Hydrologic Unit (HU) in which the station is located.

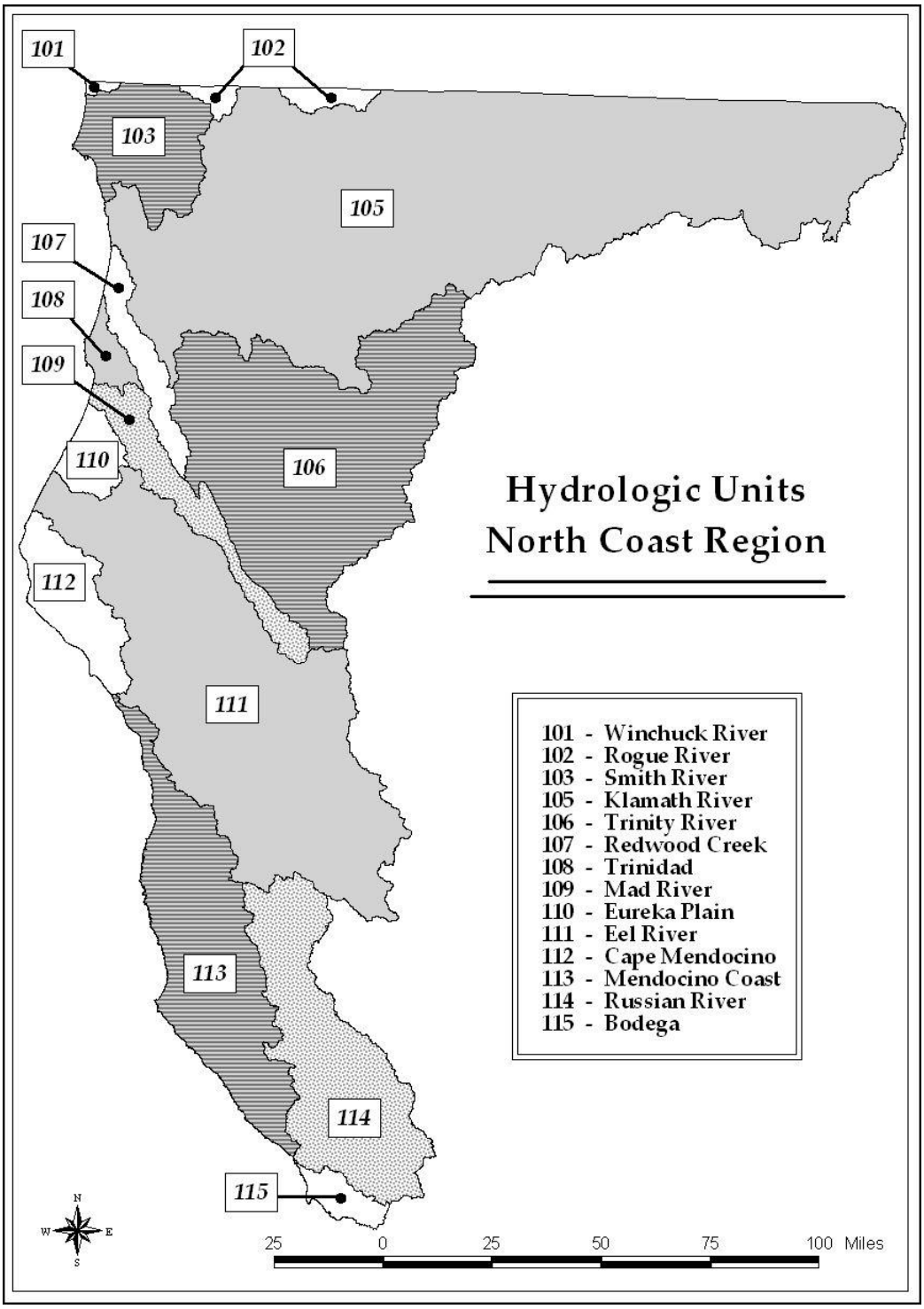

Figure 1. Hydrologic Units in the North Coast Region.

Table 1: Status and Trend Monitoring Program Locations - 2012

Station Code	Station Description	Year Est.	Original Station Status	FY00-01 - FY04-05	FY05-06 - FY07-08	FY08-09 - CY2011
103SF0039	South Fork Smith River above Hiouchi	2001	TREND	18	11	
103SM1917	Smith River below Dr. Fine Bridge	2001	TREND	18	11	
103SM6897	Smith River above South Fork Smith River	2001	TREND	18	11	
107RE0437	Redwood Creek at Orick	2001	TREND	18	11	
108LITCRN	Little River at Crannel	2002	Rotating	2		4
109MA1087	Mad River at Blue Lake below Hatchery	2001	TREND	18	11	
110ELKRVR	Elk River	2012	Rotating	5		4
110FR4118	Freshwater Creek	2002	Rotating	4		4
110JA2619	Jacoby Creek	2002	Rotating	5		4
110SA1720	Salmon Creek at Highway 101	2002	Rotating	4		4
113GA2733	Garcia River at Eureka Hill Road	2001	Rotating	2		
113GRNHW1	Greenwood Creek at Highway 1	2001	Rotating	2		
113GU4637	Gualala River at Gualala Regional Park	2001	TREND	15	12	
113NAVDIM	Navarro River at Dimmick	2001	Rotating	2		
113BF0050	Buckeye Creek at South Fork Gualala River	2012	New Site			
113RF0050	Rockpile Creek at South Fork Gualala River	2012	New Site			
113NF0050	North Fork Gualala at Gualala River	2012	New Site			
113SF2035	South Fork Gualala River at Annapolis Road	2001	Rotating	2		
113WF0079	Wheatfield Fork Gualala River at Annapolis Road	2001	Rotating	2		

Table 2: Status and Trend Monitoring Program Locations - 2013

Station Code	Station Description	Year Est.	Original Station Status	FY00-01 - FY04-05	FY05-06 - FY07-08	FY08-09 - CY2011
105KLAMCO	Klamath River at Iron Gate Reservoir	2001	TREND	17	4	4
105KLAMGL	Klamath River at Klamath Glen	2002	Rotating	5	4	4
105KLAMOR	Klamath River at Orleans	2002	Rotating	5		
105KLAMSI	Klamath River at Seiad	2001	TREND	16		
105KLAMWP	Klamath River at Weitchpec	2001	TREND	18	4	4
105KLARMP	Klamath River at Gottville River Access	2001	TREND	17		
105KLASTL	Klamath River at Stateline	2002	Rotating	5		4
105SCOTCA	Scott River at Callahan	2002	Rotating	9		4
105SCOTJB	Scott River at Jones Beach	2002	Rotating	10		
105SCOTSH	Scott River at Steelhead Beach	2001	TREND	17	11	4
105SHA263	Shasta River at Hwy 263	2001	TREND	17	11	4
105SHAEDG	Shasta River at Edgewood Rd	2002	Rotating	5	4	4
105YREAND	Yreka Creek at Anderson Grade Road	2002	Rotating	9		4
106HAYFRK	Hayfork Creek at Hyampom	2013	New Site			
106TRHTCH	Trinity River at Hatchery	2001	TREND	15		4
106TRINFH	North Fork Trinity at Helena	2002	Rotating	10		
106TRINSF	South Fork Trinity at Salyer	2002	TREND	15		4
106TRINSL	Trinity River at Salyer	2002	Rotating	10		4
106TRINWP	Trinity River at Weitchpec	2001	TREND	18	4	4
106TRNHYM	South Fork Trinity at Hyampom	2013	New Site			

Table 3: Status and Trend Monitoring Program Locations - 2014

Station Code	Station Description	Year Est.	Original Station Status	FY00-01 - FY04-05	FY05-06 - FY07-08	FY08-09 - CY2011
113TENNFK	Ten Mile River above South Fork Ten Mile River	2001	Rotating	2		
113WAGHW1	Wages Creek at Highway 1	2001	Rotating	2		
113BI2655	Big River at Mendocino Woodlands	2001	Rotating	2		
112MA0903	Mattole River at Petrolia	2001	Rotating	2		
112NFMATP	North Fork Mattole River at Petrolia	2001	Rotating	3		
113ALBMST	Albion River	2001	Rotating	2		
111EELBRN	South Fork Eel River near Branscomb	2002	Rotating	13		5
111EELDAM	Eel River at Scott Dam	2014	New Site			
111EELHOL	Eel River at Holmes	2002	TREND	15		5
111EELMAN	Eel River above Dos Rios	2001	TREND	17	11	5
111EELMDV	Eel River above Dyerville	2001	TREND	18	11	5
111EELSFK	South Fork Eel River ds of Bull Creek	2001	TREND	18	11	5
111EELVAN	Eel River downstream of Van Arsdale Reservoir	2002	TREND	14		5
111ELDRCR	Elder Creek at Eel River	2002	TREND	14	11	2
111MFKEEL	Middle Fork Eel River at Dos Rios	2001	TREND	16	11	5
111NFELMI	North Fork Eel River near Mina	2001	TREND	16	11	5
111VAN101	Van Duzen River at Bridgeville	2002	Rotating	2		5
111VANDIN	Van Duzen River near Dinsmore	2002	Rotating	5		
111YAGCAR	Yager Creek at Carlotta	2002	Rotating	5		

Table 4: Status and Trend Monitoring Program Locations - 2015

Station Code	Station Description	Year Est.	Original Station Status	FY00-01 - FY04-05	FY05-06 - FY07-08	FY08-09 - CY2011
114AU0318	Austin Creek at Old Duncan's Grade	2004	Rotating	4		7
114BS0310	Big Sulphur Creek at River Road	2004	Rotating	5		11
114DC0037	Dry Creek at Russian River	2001	Rotating	7		9
114DC3277	Dry Creek below Lake Sonoma	2004	Rotating	5		5
114EF0373	East Fork Russian River below Coyote Dam	2001	Rotating	6		7
114EF4506	East Fork Russian River at Highway 20	2004	Rotating	5		
114EF9999	East Fork Russian River at Powerhouse	2004	Rotating	5		
114GVCRRM	Green Valley Creek at Russian River	2015	New Site			
114LAGSTP	Laguna de Santa Rosa at Stony Point Road	2015	New Site			
114MW0930	Mark West Creek at Trenton Healdsburg Road	2001	TREND	7	12	11
114MWORHW	Mark West Creek at Old Redwood Highway	2015	New Site			
114RR1325	Russian River at Johnson's Beach	2001	TREND	17	12	6
114RR2940	Russian River at Healdsburg Memorial Beach	2001	TREND	17	12	7
114RR5652	Russian River at Crocker Road	2001	TREND	17	12	7
114RR8339	Russian River at Talmage	2001	TREND	17	12	7
114RR8709	Russian River at Mendocino Avenue	2001	Rotating	6		11
114SR0761	Santa Rosa Creek at Willowside Road	2004	Rotating	5		11
115EAVFER	Estero Americano at Valley Ford Estero Road	2015	New Site			
115ESVFER	Estero de San Antonio at Valley Ford Estero Road	2015	New Site			
115SCSCRD	Salmon Creek at Salmon Creek Road	2015	New Site			

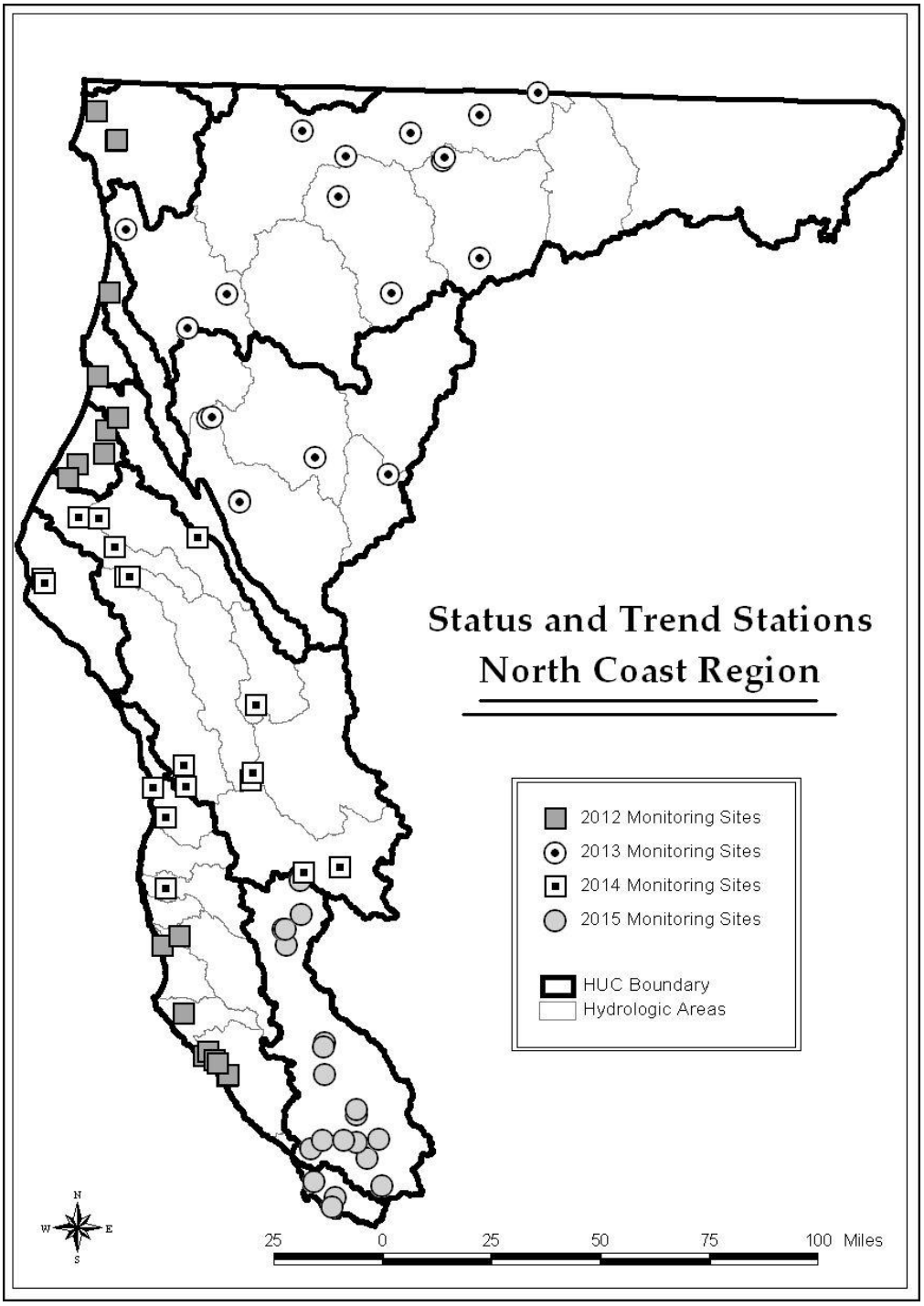

Figure 2. Status and Trend Program station locations by sampling year.

Table 5: Sample Categories and Sample Timing

2012-2015	Field Measurements	Organic Chemistry(Pesticides)	Total Metals	Conventional Water Chemistry
March	**X**	**X**	**X**	**X**
May	**X**	**X**	**X**	**X**
July	**X**		**X**	**X**
September	**X**		**X**	**X**
November	**X**	**X**	**X**	**X**

Sample Collection

During the five scheduled site visits, the Status and Trends Program will collect standard field parameters, and grab samples for the analysis of conventional water quality constituents, total metals concentrations, pesticides/herbicides and pesticide residues, and PCBs. Table 6 lists the individual constituents and total number (#) of pesticide/herbicide analytes.

Table 6. Analytes per Sample Category.

Field Measurements	
Dissolved Oxygen	**pH**
Specific Conductivity	**Temperature**
Conventional Water Chemistry	
Boron	**Chloride**
Alkalinity as CaCO3	**Chlorophyll-a**
Hardness as CaCO3	**Soluble Reactive Phosphorous**
Ammonia as N	**Phosphorous as P (total)**
Nitrate as N	**Suspended Sediment Concentration**
Nitrite as N	**Total Dissolved Solids**
Nitrogen, Total	**Dissolved Organic Carbon**
Sulfate	**Total Organic Carbon**
Total Metals	
Aluminum	**Silver**
Chromium	**Cadmium**
Manganese	**Lead**
Nickel	**Arsenic**
Copper	**Selenium**
Zinc	**Mercury**
Organic Chemistry	
Organophosphate Pesticides (19)	**Triazine Herbicides (18)**
Organochlorine Pesticides (32)	**Pyrethroids/Pyrethrins (7)**
Polychlorinated Biphenyls (50)	

The field crews 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. If sampling work is being performed at a new station, the geo-coordinates and cross-referenced photographs, and other pertinent information shall be recorded on the appropriate field forms for future reference. Sufficient volume of water shall be collected in order to perform the analyses to be conducted at each station.

Sample collection and subsequent processing and testing will be performed according to protocols specified in the most recent version of the SWAMP Quality Assurance Project Plan (QAPP) and region-specific QAPP's/SOP's."

Quality Assurance

This monitoring study will be consistent with the SWAMP Quality Assurance Management Plan (Puckett 2002).

Schedule and Reporting

Technical reports summarizing the findings of each objective will be produced by Regional Board SWAMP staff. Reports will be made available on the Region Boards's SWAMP website. All data will be reported and available to the public on the California Environmental Data Exchange Network (CEDEN) once all Quality Assurance has been completed.

For CY2012, field sampling will begin in March 2012. Pending availability of data, data analysis will be performed during May-August 2013. A technical report on the monitoring performed during 2012 will be completed by March 1, 2014. All subsequent years will follow the same calendar schedule, see table 7 for the complete schedule.

Table 7. Reporting Schedule

Sample Year	Sampling Initiation	Sampling Termination	Analysis Completion	Report Completion
2012	**Mar-2012**	**Nov-2012**	**Aug-2013**	**Mar-2014**
2013	**Mar-2013**	**Nov-2013**	**Aug-2014**	**Mar-2015**
2014	**Mar-2014**	**Nov-2014**	**Aug-2015**	**Mar-2016**
2015	**Mar-2015**	**Nov-2015**	**Aug-2016**	**Mar-2017**

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