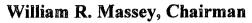


#### California Regional Water Quality Control Board

#### **North Coast Region**





Winston H. Hickox
Secretary for
Environmental
Protection

Internet Address: http://www.swrcb.ca.gov/~rwqcb1/ 5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403 Phone: 1 (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135

January 2, 2002

To:

**Interested Parties** 

Subject:

2002 303(d) List Update - Board Meeting Notice

File:

Water Quality - TMDL - 2002 303(d) Update

Regional Water Quality Control Board, North Coast Region (Regional Water Board) staff have developed final recommendations for the update to the federal Clean Water Act Section 303(d) List of Impaired Water Bodies for the North Coast region. A Regional Water Board Meeting on the Clean Water Act Section 303(d) List Update for 2002 will be held on Wednesday, January 23, 2002 from 1:30 to 5:00 p.m. at the Regional Water Board office in Santa Rosa. The meeting will cover the 303(d) update process, the relationship of the 303(d) List to TMDLs, guidance used in the listing and de-listing process, the evaluation approach and evaluation criteria used in updating the List, and Regional Water Board staff's recommended changes to the List. Public comment will be accepted at the meeting. Following staff's presentation and public comment, the Regional Water Board may direct the Regional Water Board Executive Officer to prepare a letter of clarification to the State Water Board regarding the November 2001 staff report to the State Water Board that recommended changes to the Section 303(d) List.

Should you have any questions, please contact Matt St. John of my staff at (707) 570-3762 or stjom@rb1.swrcb.ca.gov.

Sincerely,

Susan A. Warner Executive Officer

MSJ:clh/Jan23workshopnotice

California Environmental Protection Agency



303d List Workshop Outline North Coast RWQCB January 23, 2002

- I. Clean Water Act NPS regulatory structure [30 min]
  - A. Flow chart:303d>TMDL>Basin Plan>Implementation
    - 1. Intro to 303d decision tree
  - B. TMDL Program State Board perspective (Tom Howard)
  - C. NPS State Board guidance
  - D. Legal issues: (Sheryl Freeman)
    - 1. Legal implications of listing
    - 2. Case Law -- Pronsolino v EPA
    - 3. Response to John Selvage questions
    - 4. Consent Decree and schedule
- II. 303(d) listing process [1 hr 30 min]
  - A. RB1 process leading to January 23 Workshop chronology of events and Board direction [5 min]
  - B. Available state and federal listing and de-listing guidance [10 min]
    - 1. "1998 CWA Section 303d Listing Guidelines" SWRCB
    - 2. EPA's (Dave Smith's) letter of May 15, 2001
    - 5. Other EPA 303d guidance documents
  - C. List update process: Flow chart with dates: RB1>SB>EPA [20 min]
    - 1. Timeline for submittals, drafts, workshops, hearings, etc.
    - 2. State Board process (Diane Beaulourier or Craig J. Wilson)
    - 3. EPA process and perspective (Dave Smith)
  - D. Establishment of current list priority and schedule [5 min]
  - E. Evaluation Approach [45 min]
    - 1. General: weight of evidence. Hierarchy of application of criteria Standard of proof for listing.
    - 2. Overview of potential conclusions: i.e. list, de-list, watch list
      Present summary of de-list recommendations statewide (SWRCB?)
      Discuss the intent and implications of watch list
    - 3. Sediment listings

Review North Coast narrative and numeric sediment objectives, and discharge prohibitions. Include turbidity, suspended sediment, settleable material.

Explain indicators and numeric targets based on various completed technical TMDLs. Add turbidity as a Basin Plan objective.

Graphical presentation of targets

Physical presentation of targets: 37 mm, 69mm particles, water of varying turbidities, bulk samples of sediment of varying characteristics, photos of locales that meet/don't meet targets

4. Temperature

North Coast narrative objective for temperature. Explain analysis of temperature data: MWAT MWMT, max temperature, cum temp plots.

Show other numeric objectives used in other states. Show other proposed thresholds: NMFS, EPA (Region 10, Brungs and Jones), ODEQ, WDE.

Graphical presentation of thresholds: leads to selection of critical life stage and associated temperature thresholds for different species. Acute and chronic. Sullivan et al, Hines and Ambrose, and Welsh et al results

Discussion of Sullivan paper key points, e.g., that results are not geographically specific even though work relied mostly on OR and WA field studies.

Factors that affect stream temperatures, e.g., air temp issue

#### 5. Pathogens

Presentation of numeric objectives
Present public health standards for beach closures

#### III. 303d List Update Recommendations [1 hr]

- A. Application of Evaluation Approaches to Specific Watersheds
  - 1. Sediment: Jacoby, Greenwood, Redwood, Stemple. Present data vs. thresholds except Stemple [20 min]
  - 2. Temperature: present watershed-specific data vs. thresholds: Russian, Gualala, Big, Ten Mile, Mad, Redwood [40 min]

Analyze listing data using different thresholds: Sullivan, OR, WA, NCWAP, EPA Region 10, NMFS

Discuss how temporal and spatial variability is handled with respect to listing process – include discussion of relationship of water temperature to drainage area.

Historic vs current distribution and population of salmonids.

B. TMDL priorities and schedules: 305b [5 min]

Power Point Presentation Presented to NCRWQCB 1/23/01 (I slide per page)

# Discussion of Section 303(d) of the Clean Water Act Listing and De-Listing Recommendations

David Leland, Senior WRCE Matt St. John, WRCE

North Coast RWQCB

January 23, 2001

## Purposes of Meeting

- To provide an overview of the federal CWA Section 303(d)
- To present the Regional Water Board staff's approach to evaluating condition of waterbody
- To discuss the process for updating the 303(d) List
- To present the rationale for the specific List update recommendations
- To provide opportunity for public comment
- To provide an opportunity for Board input

#### Outline

I. Overview of CWA Section 303(d) RWB staff

II. Approach to evaluating waterbody RWB staff

III. List update process

RWB staff,

SWB,

**US EPA** 

IV. Rationale for specific RWB staff

recommendations

V. Public comment Public

VI. Board discussion and direction

Board

# Requirements of CWA Section 303(d)

- Language of Federal CWA Section 303(d)
- Language of Code of Federal Regulations Part 130 of Title 40
- Summary of the law

### Federal CWA Section 303(d)

Each State shall identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311 (b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

Each State shall identify those waters or parts thereof within its boundaries for which controls on thermal discharges under section 1311 of this title are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

Each State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 1314(a)(2) of this title as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

# Code of Federal Regulations Part 130 of Title 40

#### Each State shall:

- Identify the waterbodies within its boundaries that are water qualitylimited;
- Develop a priority ranking of these water quality-limited waterbodies;
   and
- Submit to US EPA a list of these waterbodies requiring a pollution control plan (Total Maximum Daily Load).

"Water quality-limited" means the quality of the water does not meet the applicable water quality standards, even after the application of the existing water quality controls for that waterbody.

### Summary of the Law

#### Section 303(d) requires states to:

- Identify those waterbodies (or segments thereof) that are impaired, even after the application of all existing water quality controls;
- Submit to EPA a list of these waterbodies;
- Develop a pollution control plan (Total Maximum Daily Load) to attain and maintain water quality standards.

#### **Definitions**

- "Impaired" means water quality standards are not being met.
- "Standards" refer to water quality objectives (either narrative or numeric), beneficial uses, and nondegradation requirements.

So, the task is to identify waterbodies for which water quality objectives (both numeric and narrative) are not being met and/or the designated beneficial uses of that waterbody are not being supported.

#### What is included on the 303(d) List?

- Name of impaired waterbody
- Pollutant or stressor causing impairment
- Source of pollutant/stressor
- Priority and schedule for developing Total Maximum Daily Load (TMDL)

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# "Weight of Evidence" Approach to Evaluating Condition of Waterbody

Weigh readily available data and information as to its ability to demonstrate a credible line of reasoning leading to a conclusion about the condition of the waterbody.

- (1) The water body is meeting standards;
- (2) The water body is not meeting standards; or
- (3) Based on the available information, standards attainment cannot be determined.

#### Data / Information Sources

- 40 CFR §130.7: "Each State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the list"
- Data/information received from public solicitation of water quality information:
  - Government agencies: USGS, DFG, USFS, BLM, National and State Parks
  - Municipalities and Water Districts
  - Land owners
  - Volunteer monitoring groups
  - Academic/research institutions
  - Interested parties

#### Data / Information Sources (cont.)

- In-house:
  - (1) Regional and State Board monitoring and assessment data, including Surface Water Ambient Monitoring Program, North Coast Watershed Assessment Program, State Mussel Watch, Toxic Substances Monitoring Program, Bay Protection and Toxic Cleanup Program
  - (2) Data from regulated/unregulated dischargers
  - (3) Peer-reviewed literature
  - (4) Staff knowledge and experience

#### Data/Information categories

- (1) Water column chemistry,
- (2) Physical condition of the water body,
- (3) Aquatic habitat surveys,
- (4) Fisheries information,
- (5) Land use history, and
- (6) Historical conditions

### Hierarchy for Data/Information Evaluation

Water quality data and information evaluated relative to:

- (1) Basin Plan water quality objectives,
- (2) Other:
  - Criteria developed by the US EPA,
  - Water quality standards, such as the California and National Toxics Rules,
  - Guidance or guidelines developed by California Department of Health Services or other agencies,
  - Criteria/guidance developed by other States, regions or countries, and/or
  - Findings in peer-reviewed literature.

# State and Federal Guidance on Listing and De-Listing

- 40 CFR §130
- State Water Board: "1998 Clean Water Act Section 303(d) Listing Guidelines for California"
- US EPA:
  - 1994 and 1998 clarifying documents.
  - May 15, 2001 letter from US EPA to State Water Board recommends State consider the 1998 guidelines as a starting point for the 2002 listing process.

### Listing Factors per 1998 State Guidance

- Existing controls not stringent enough to assure protection of beneficial uses and attainment of water quality objectives.
- Fishing, drinking water, or swimming advisory currently in effect.
- Evaluation of chemical, physical, or biological integrity indicates that beneficial uses are impaired or are expected to be impaired within the listing cycle.
- The water body is on the previous 303(d) List and assessment continues to demonstrate impairment, or no assessment has not been performed.
- Tissue concentrations in consumable body parts of fish or shellfish exceed applicable tissue criteria or guidelines.
- Regional Water Board determines the water body needs to be afforded a level of protection offered by a 303(d) Listing.

### De-Listing Factors per 1998 State Guidance

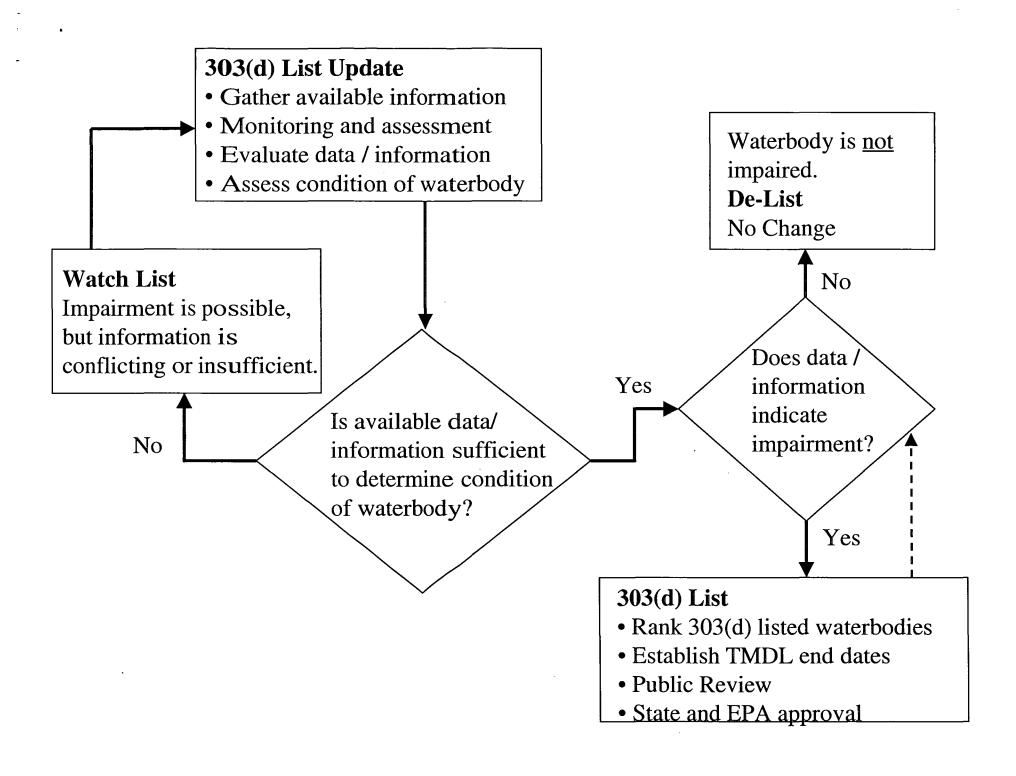
- Objectives are revised.
- A beneficial use is de-designated.
- Faulty data led to the initial listing.
- Assessment indicates objectives are being met and beneficial uses are not impaired.
- A TMDL has been approved by the US EPA.
- There are control measures in place which will result in protection of beneficial uses.

#### Summary of Regional Water Board Staff's Approach

- Considered Federal and State guidance
- Reviewed data/information readily available to TMDL staff
- Evaluated data/information using Basin Plan WQOs, other relevant criteria and guidance, peer-reviewed literature, and best professional judgement
- Data quality
- Recommendations apply to entire watershed, unless sufficient data available to make reachspecific determination.

#### Watch List

- Based on Ntl. Academy of Science's Ntl. Research Council TMDL evaluation report "Preliminary List" concept
- Conflicting or insufficient information to determine condition of waterbody
- No regulatory implications
- Identifies the need for more information
- To be used by Regional Board staff in prioritizing monitoring/assessment when resources are available.



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# 2002 303(d) List Update Process

- January 2001 State Water Board released "CWA Section 303(d) Proposed Listing Process for 2002" to Regional Boards
- **February 1, 2001** Regional Water Board EO Mr. Michlin informed staff plan to hold hearings on 303(d) List in April, May, June, and July 2001
- February 13, 2001 State Water Board suggested Regional Boards could convey list update in form of recommendations, without Regional Board action
- March 9, 2001 Regional Water Board EO Mr. Michlin informed staff of Board's wish not to hold Workshops on 303(d) List
- March 12, 2001 Notice of public solicitation of water quality information
- May 15, 2001 Close of 60-day public solicitation

#### 2002 303(d) List Update Process (cont.)

- July 5, 2001 State Board directed Regional Board staff to submit their 303(d) lists to State Board by the end of October
- September 10, 2001 Release of Regional Water Board staff's Public Review Draft 303(d) List Update Recommendations report
  - Draft report sent to all Interested Parties including Board members
  - Draft report available on Regional Water Board web page
- October 8, 2001 Close of public review period
  - Comments received after this date were considered
- November 16, 2001 Regional Water Board staff's final 303(d) List Update Recommendations report forwarded to State Water Board
- November 19, 2001 Notice for December 6, 2001 Regional Water Board Workshop on 303(d) List sent to Regional Board and interested parties
  - Final report available on web page

#### 2002 303(d) List Update Process (cont.)

- November 27, 2001 Agenda Package including final report sent to Board
- **December 6, 2001** Regional Water Board Workshop on 303(d) List
- **January 23, 2001** Regional Water Board Meeting on 303(d) List

#### Prior to October 1, 2002 State Water Board required to:

- Hold Public Workshop on statewide 303(d) List
- Hold Board Meeting to adopt statewide List
- Forward adopted List to US EPA
- By November 1, 2002 US EPA to adopt statewide list

## State Water Board Perspective

• Legal issues - Sheryl Freeman

# US EPA Perspective

Dave Smith
TMDL Team Leader
Region 9

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#### Proposed Additions to 303(d) List

#### **Pathogens:**

Russian River, Santa Rosa Creek

#### **Sediment:**

Stemple Creek, Jacoby Creek, (Redwood Creek)

#### **Temperature:**

Russian, Gualala, Big, Ten Mile, Mad River, and Redwood Creek

#### **DO & Nutrients:**

Laguna de Santa Rosa

#### pH:

**Tule Lake and Lower Klamath Lake** 

# Approach to Evaluating Pathogen Impairment

1. Where sufficient data, compared data to Basin Plan objective for bacteria:

"In waters designated for contact recreation, the median fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed 50 MPN/100 mL...".

- If there were frequent exceedances of WQO during multiple years, then recommend listing.

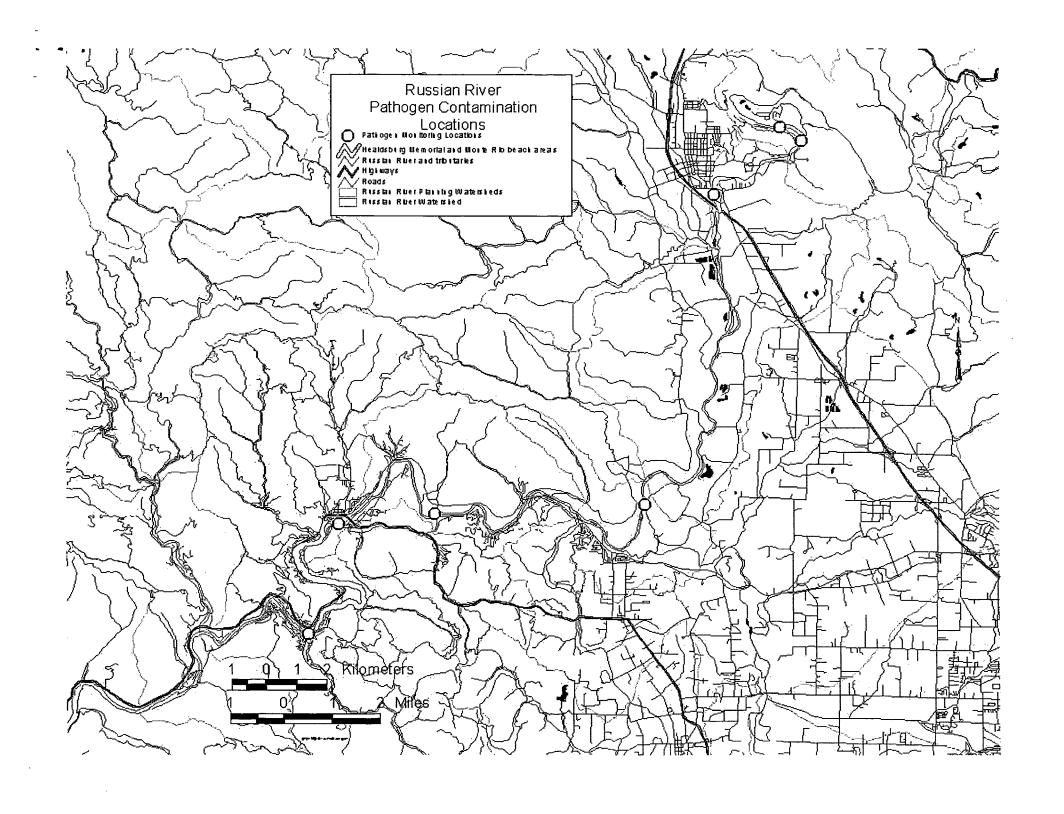
## Pathogen Approach (cont.)

2. Compared data to CA Dept. of Health Services "Draft Guidance for Fresh Water Beaches":

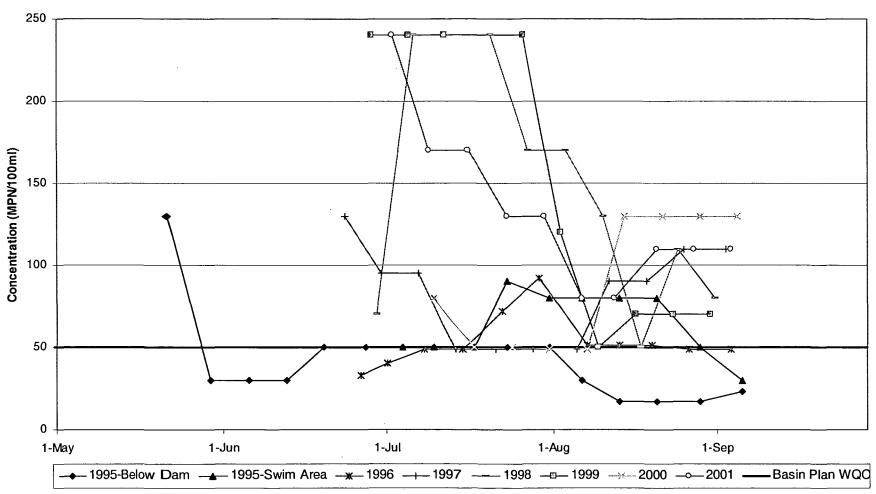
Beach posting recommended when indicator organisms exceed <u>any</u> of following levels:

- Single sample values:
  - Total coliforms: 10,000 per 100 m/L
  - Fecal coliforms: 400 per 100 m/L
  - Either Enterococcus: 61 or E. coli 235 per 100 m/L
- 30-day average values:
  - Total coliforms: 1,000 per 100 m/L
  - Fecal coliforms: 200 per 100 m/L
  - Either Enterococcus: 33 or E. coli 126 per 100 m/L

If multiple exceedences, we recommended listing.



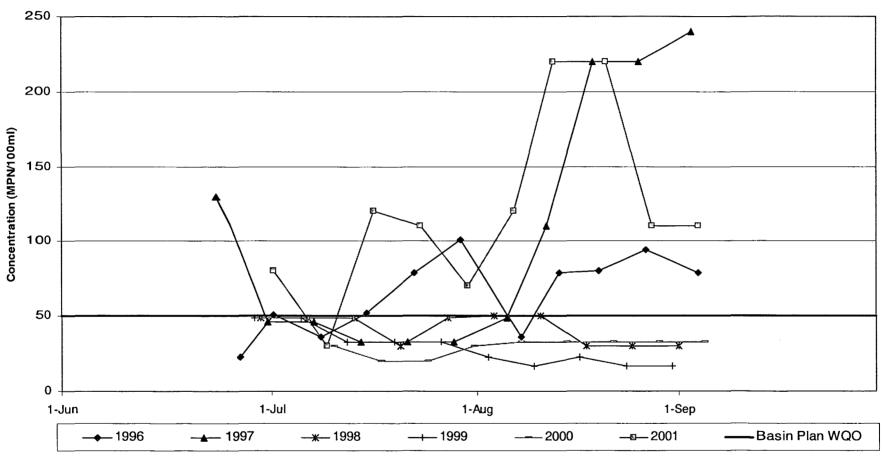
# Healdsburg Memorial Beach Median Fecal Coliform Concentrations



Not Shown: 1986 - 1994: 72% of sample sets (n=122) exceeded Basin Plan objective.

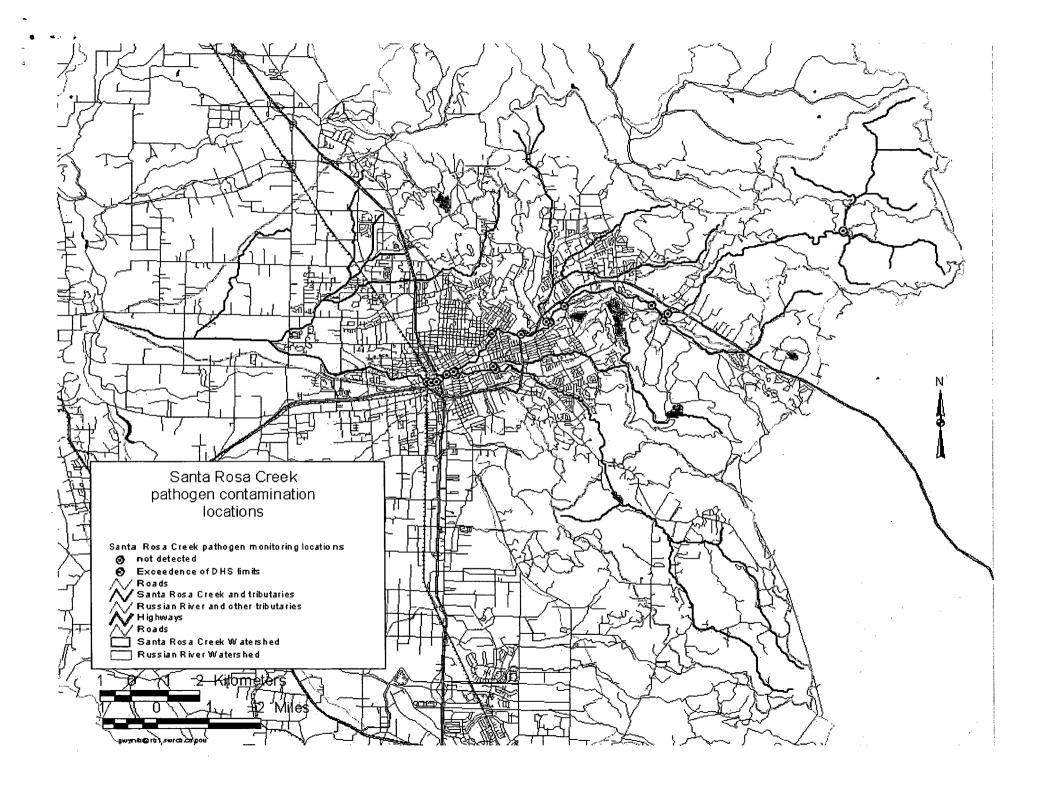
Source: RWQCB Monitoring Data

Monte Rio
Median Fecal Coliform Concentrations



Not Shown: 1992 - 1994: 75% of sample sets (n=24) exceeded the Basin Plan objective.

Source: RWQCB Monitoring Data



# Santa Rosa Creek - Pathogens

1979-1980: 30% of fecal coliform samples exceeded DHS limit

Summer/Fall 2001: City monitored 21 sites

- 11 monitoring dates
- Exceedance of DHS limits for one or more indicator organism at one or more site during all monitoring dates

July 10: City posted warning signs along Prince Memorial Greenway

#### City actions:

- Septic investigations
- Public outreach
- Homeless encampment cleaning

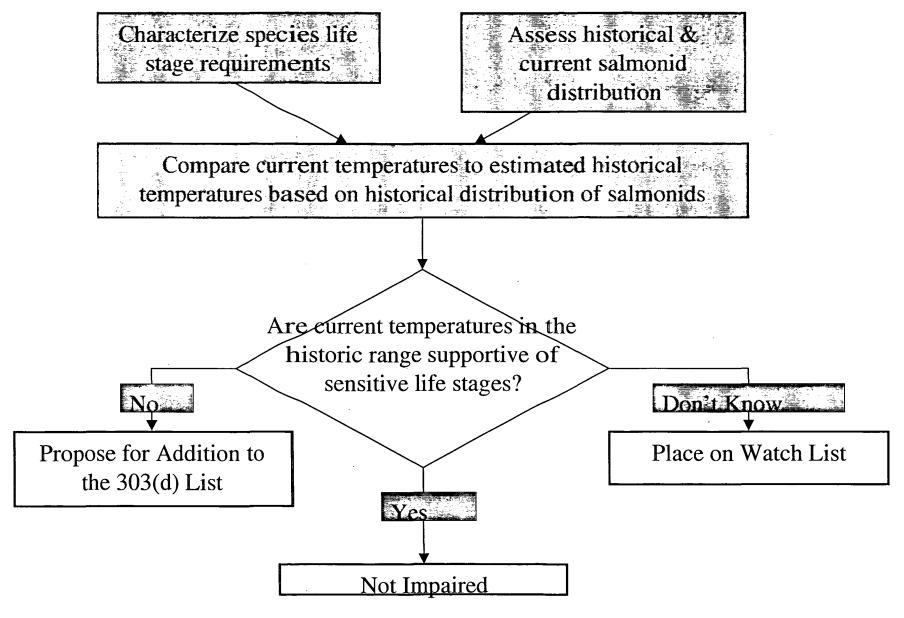
# Approach to Evaluation of Temperature Data

North Coast Regional Water Quality Control Board Workshop January 23, 2002

# Basin Plan Water Quality Objectives for Temperature

- The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.
- At no time or place shall the temperature of any COLD water be increased by more than 5°F above natural receiving water temperature.
- At no time or place shall the temperature of WARM intrastate waters be increased more than 5°F above natural receiving water temperature.

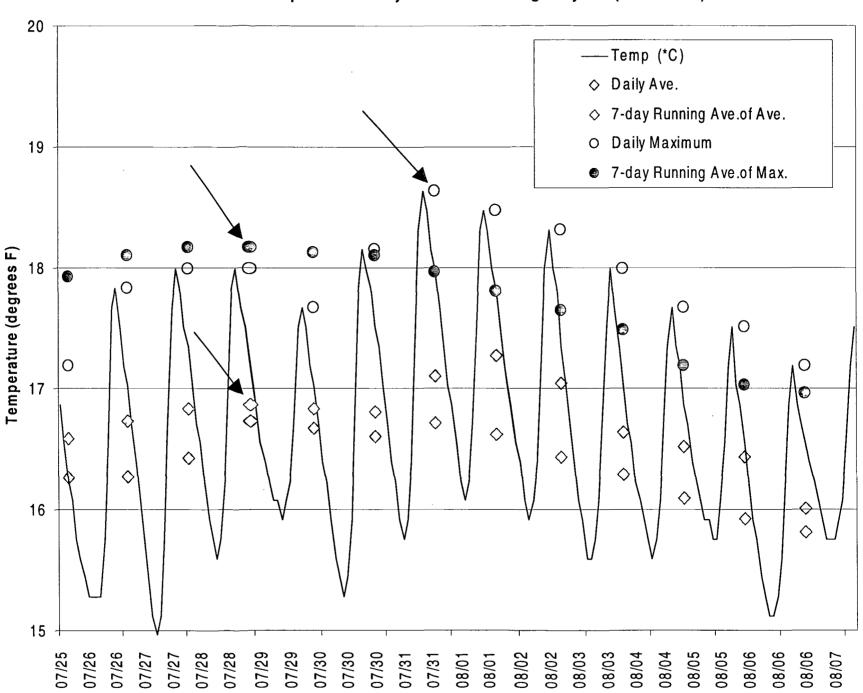
#### Approach to Evaluating Temperature Data



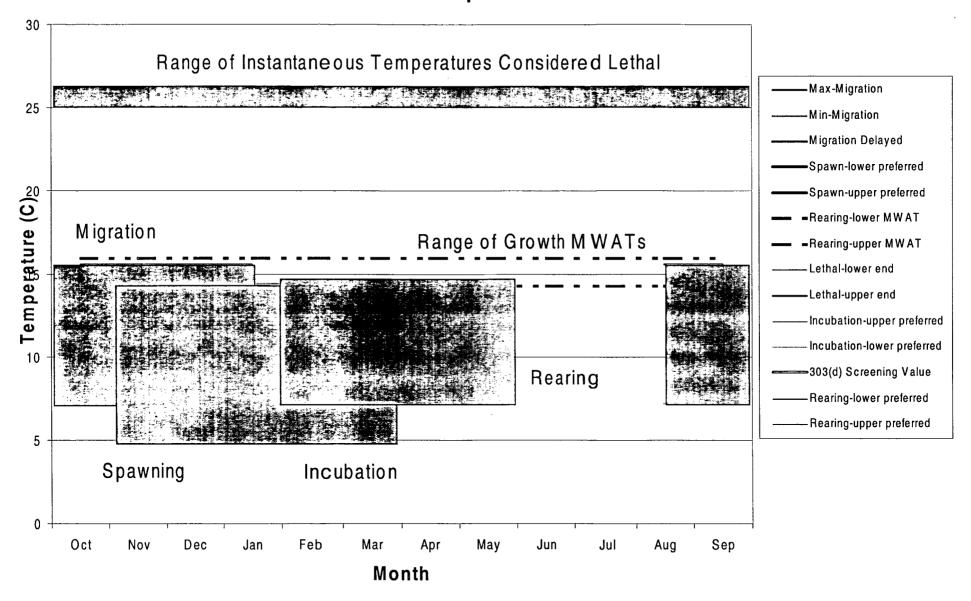
# Chronic (Sub-lethal) Temperature Metrics

- Instantaneous maximum: highest individual value in a season
- Maximum Weekly Average Temperature
   (MWAT): maximum value in a season of 7-day moving average of daily average
- Maximum Weekly Maximum Temperature (MWMT): maximum value in a season of 7day moving average of daily maximums

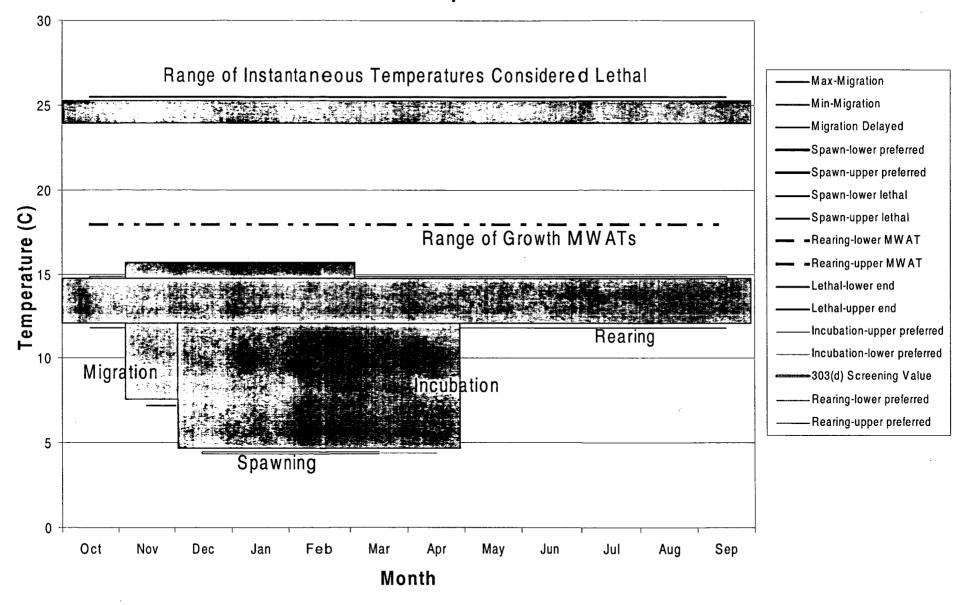
#### 1995 Water Temperatures in Flynn Creek Near Highway 128 (SWRCB-15)



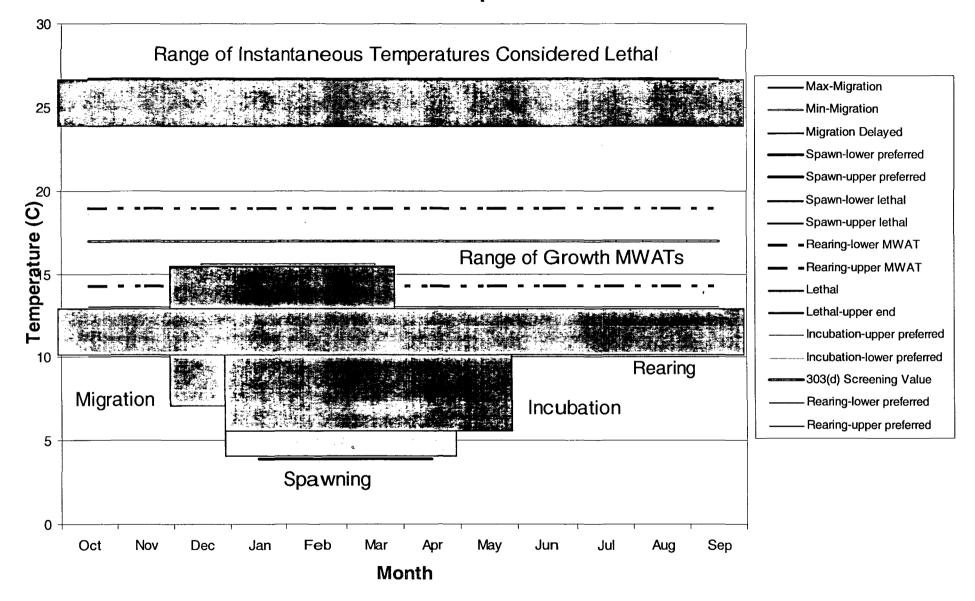
#### **Chinook Temperature Criteria**



#### **Coho Temperature Criteria**



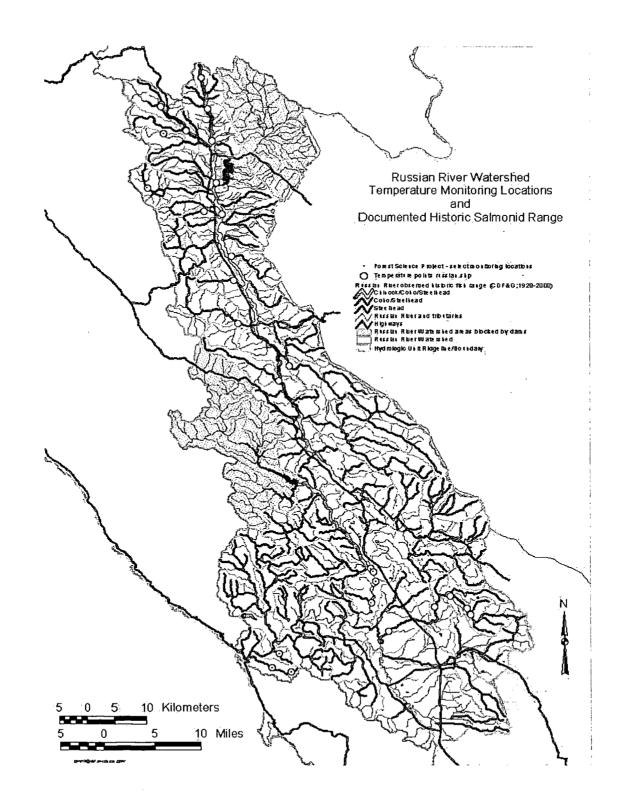
#### **Steelhead Temperature Criteria**



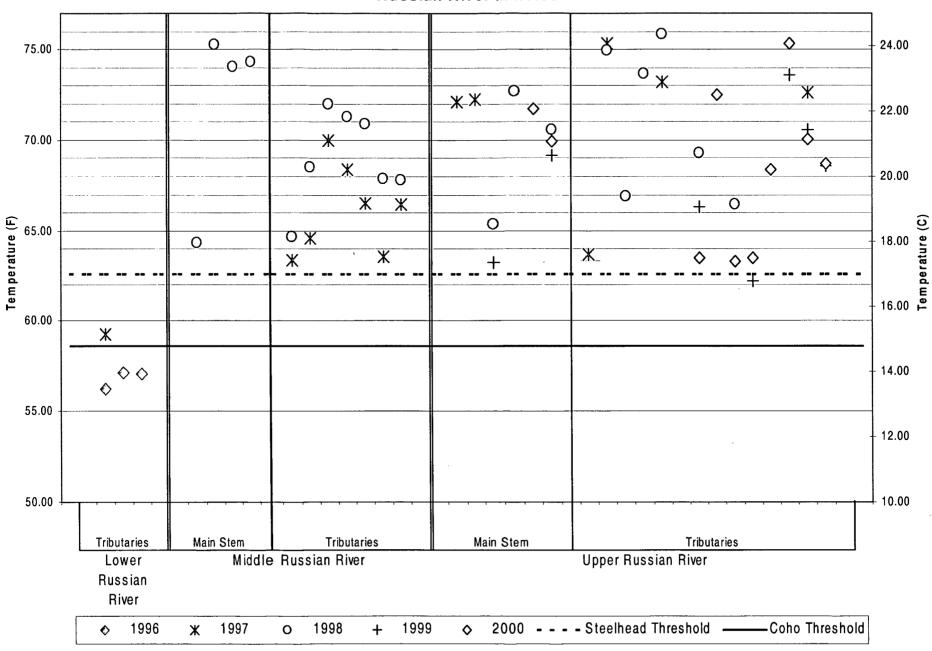
mperature (C)	Description	Temperature (F)	
26	Upper end of range of acute thresholds (considered lethal to salmonids).	78.8	
25	(considered lethar to daimonida).	77.0	
24	Lower end of range of acute thresholds (considered lethal to salmonids).	75.2	
23		73.4	
22		71.6	
21		69.8	
20		68.0	
19	Steelhead and coho growth reduced 20% from maximum (Sullivan and others, 2000). MWAT metric. USEPA (1977) growth MWAT for rainbow trout.	66.2	
18	USEPA (1977) growth MWAT for coho	64.4	
17	Steelhead growth reduced 10% from maximum (Sullivan and others, 2000). MWAT metric	62.6	
16.7	Welsh and others MWAT threshold for coho presence/absence in the Mattole	62.1	
16	Oregon Dept. of Environmental Quality Standard for salmonids (equivalent MWAT calculated from 7-day max.)	60.8	
15	EPA Region 10 Recommended MWAT Threshold for Coldwater Salmonid Rearing	59.0	
14.8	Coho growth reduced 10% from maximum (Sullivan and others, 2000), MWAT metric	58.6	
14.6	Upper end of preferred rearing range for coho	58.3	
14.3	Washington Dept. of Ecology standard (equivalent MWAT calculated from annual max.)	57.7	
14		57.2	
13	Upper end of preferred rearing range for steelhead	55.4	

# Comparison of Temperature Monitoring Data to Salmonid Thresholds

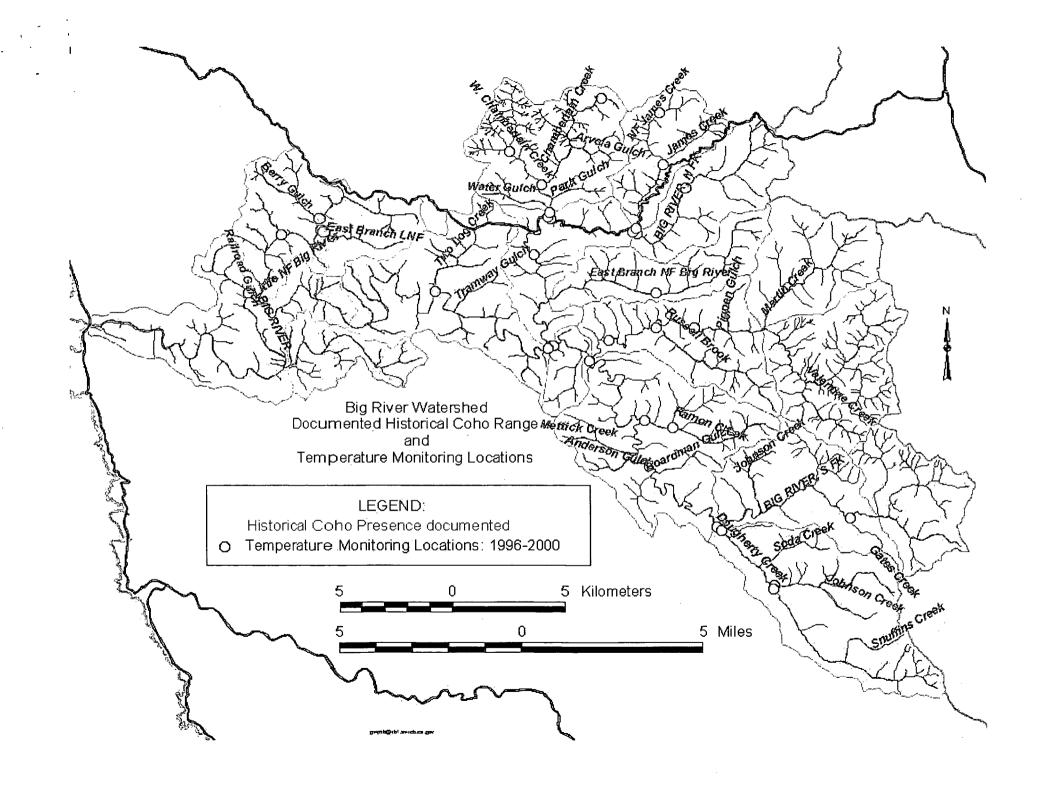
Watershed	Locations	MWAT>14.8C Coho growth reduced 10%. 32 94%		MW AT>17C Steelhead growth reduced 10%. 31 91%	
Russian	34				
Gualala	65	54	83%	38	58%
Big	33	29	88%	19	58%
Ten Mile	33	26	79%	11	33%
Mad	35	31	89%	22	63%
Redwood	34	22	65%	10	29%
Navarro	57	54	95%	45	79%
		<u></u>			



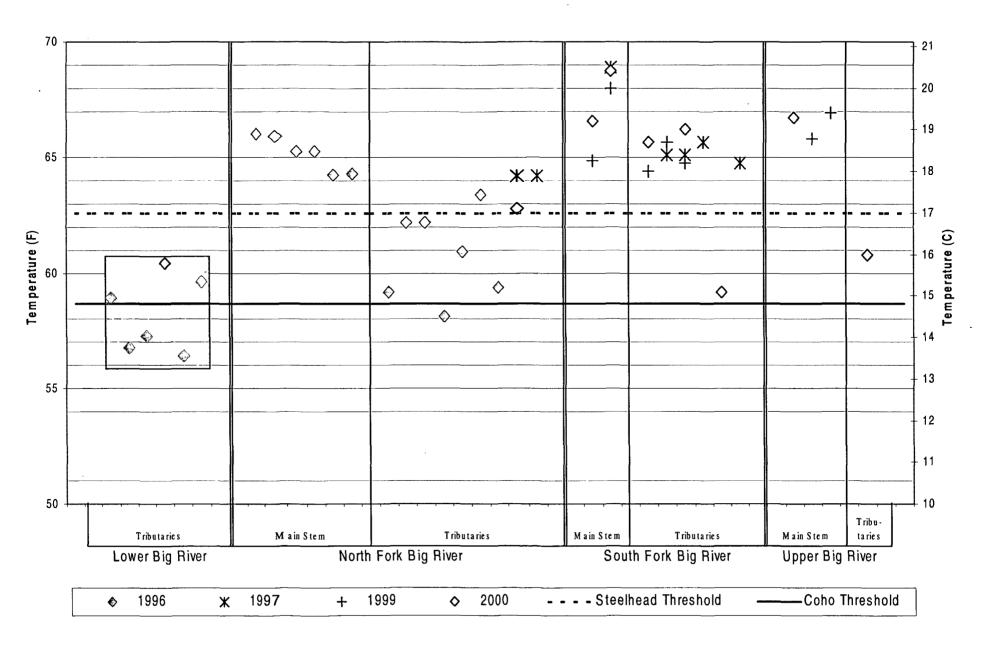
#### **Russian River MWATs**



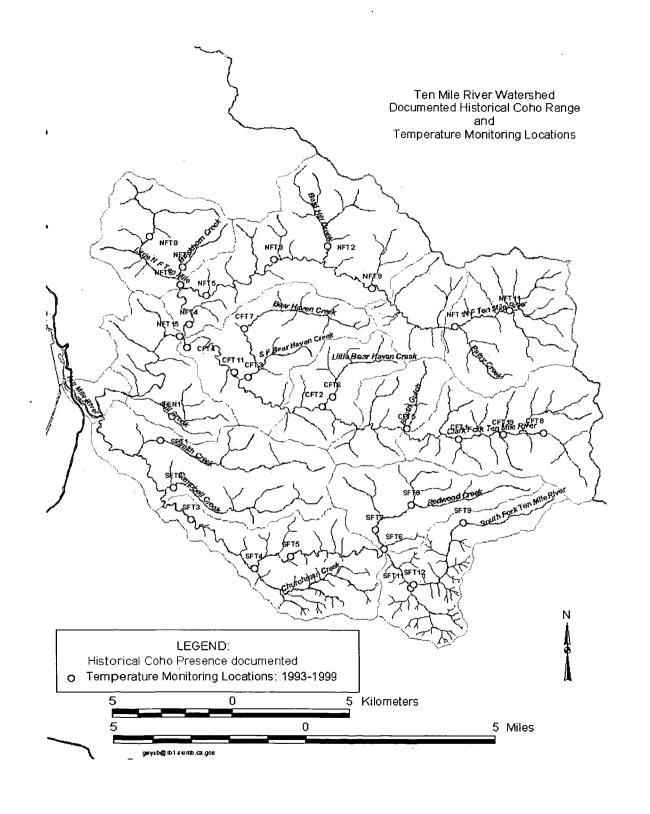
Sources: Forest Science Project, Sonoma County Water Agency, and Mendocino County Water Agency



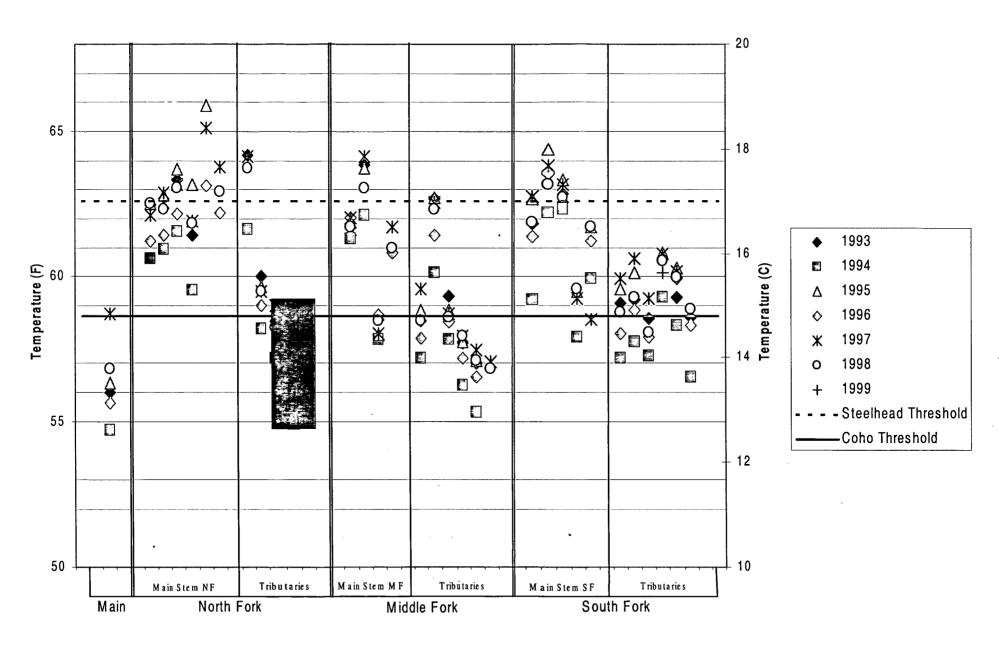
**Big River MWATs** 



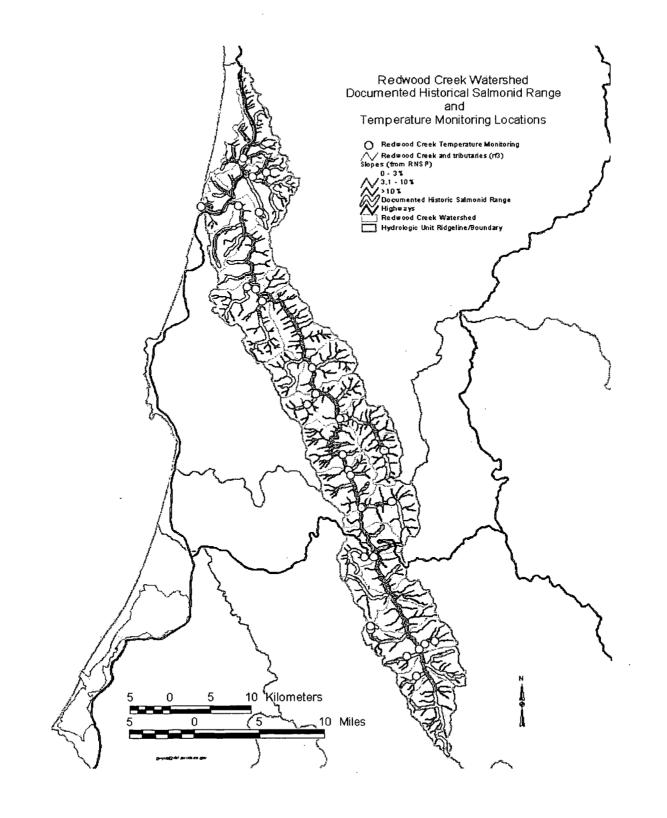
Sources: California Department of Forestry, Mendocino Redwood Company, and Mendocino County Water Agency



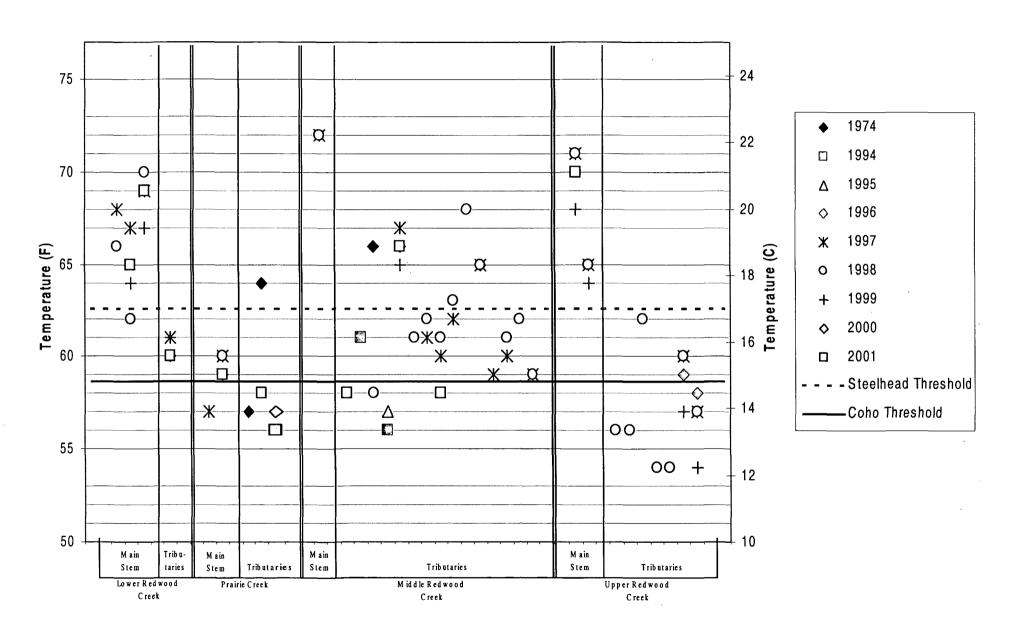
Ten Mile River MWATs



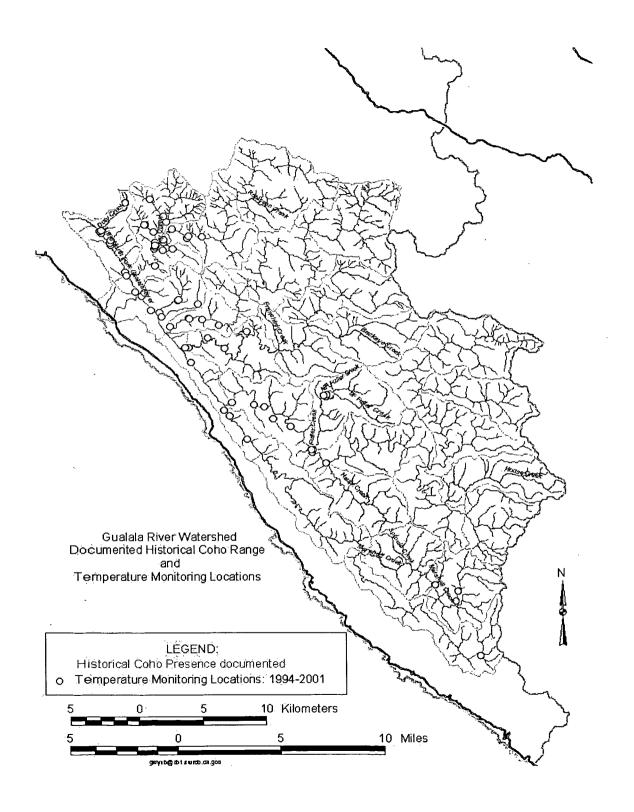
Source: Hawthorne Timber Company



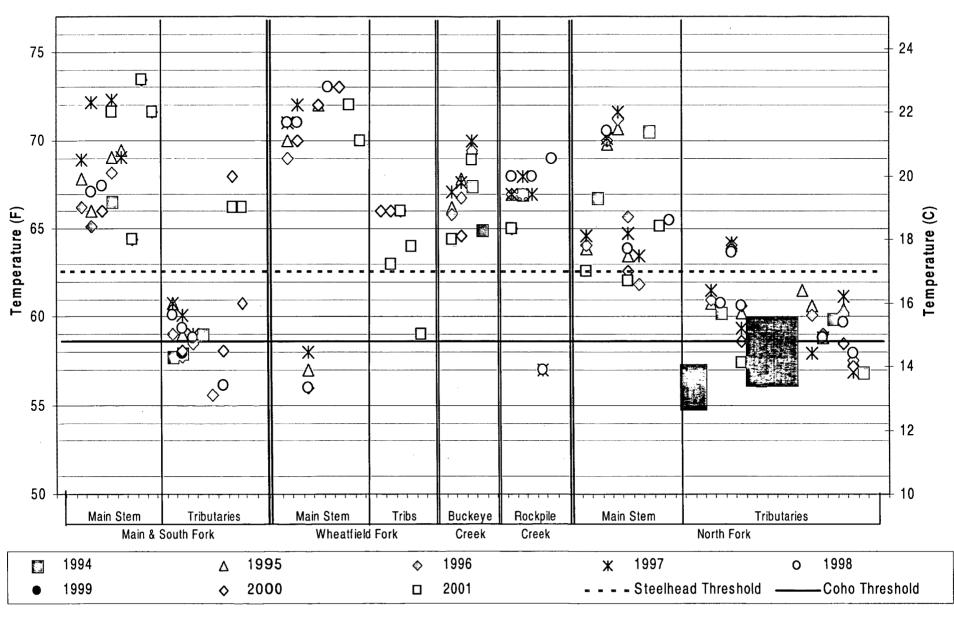
#### Redwood Creek MWATs



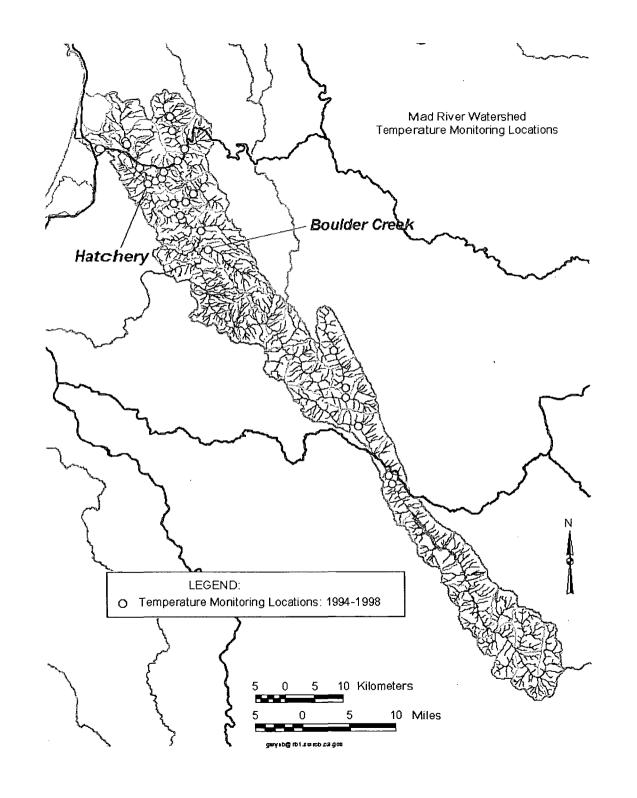
Sources: Simpson Timber Company and Forest Science Project

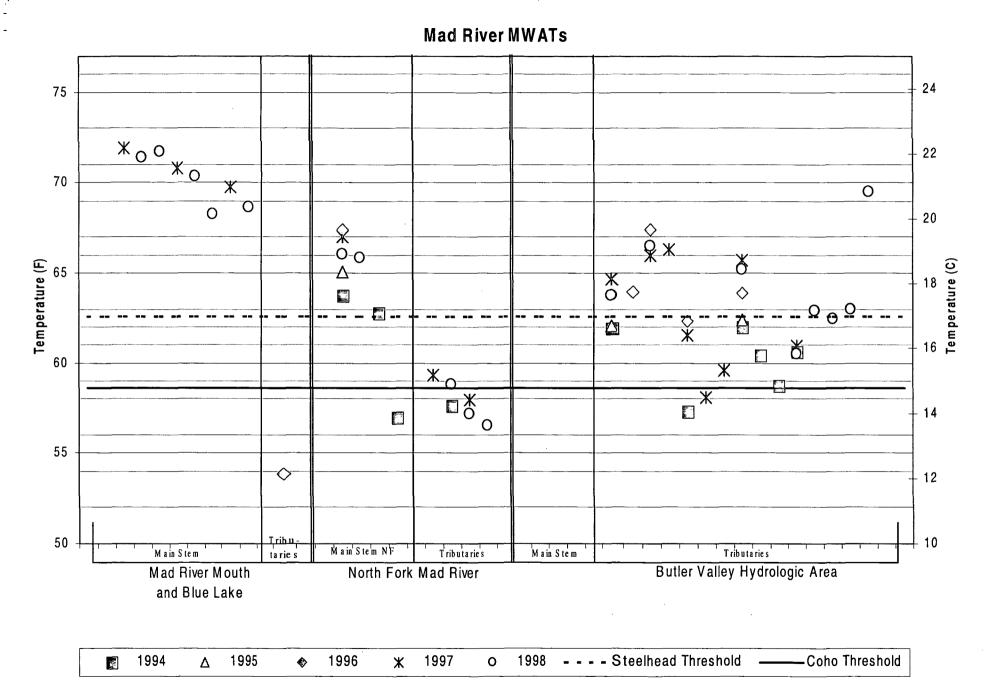


#### **Gualala River MWATs**

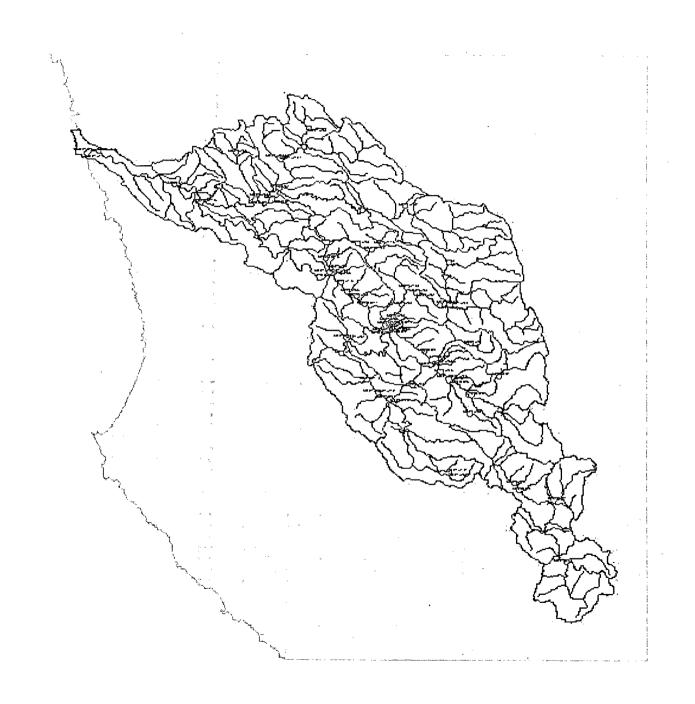


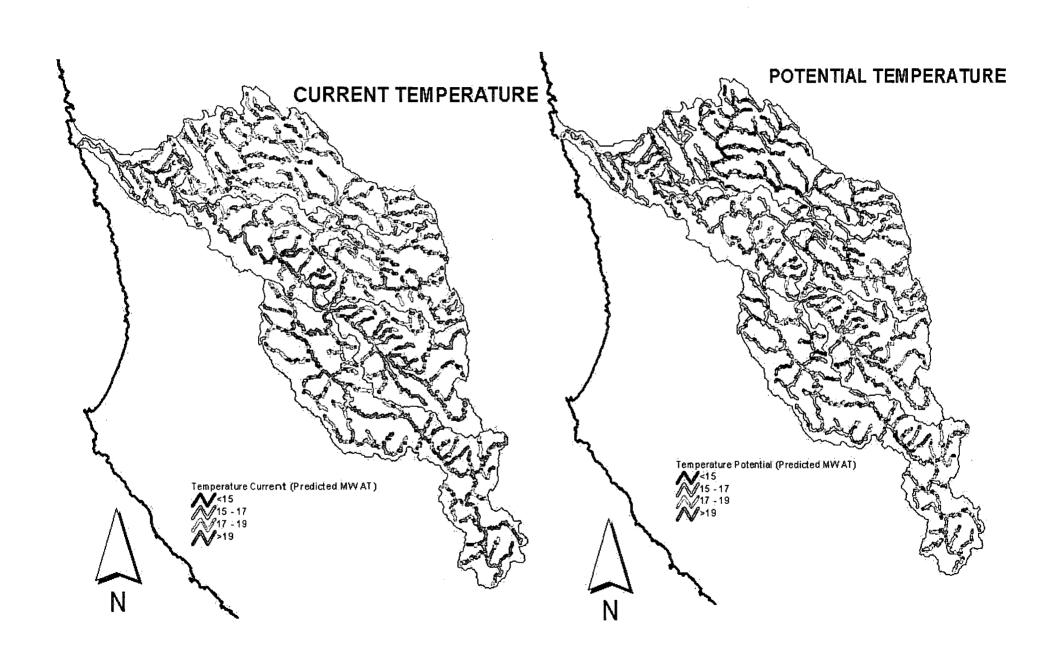
Sources: Gualala Redwoods Inc. and Gualala River Watershed Council

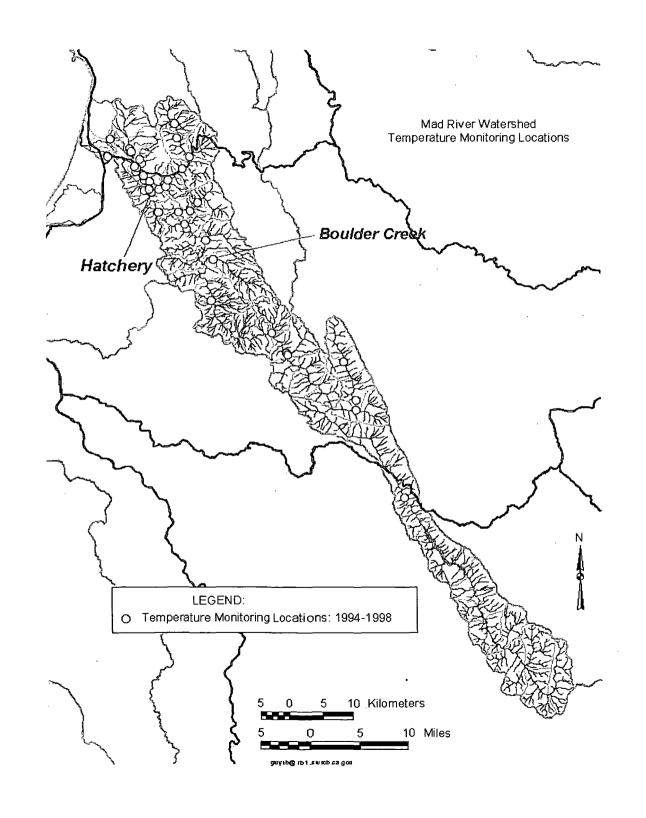




Sources: Department of Fish and Game, Natural Resource Management, and Forest Science Project







# Code of Federal Regulations Part 130 of Title 40

## **§130.7**

- (b) (1) Each State shall identify those water quality-limited segments still requiring TMDLs within its boundaries for which:
  - (I) Technology-based effluent limitations required by sections 301(b), 306, 307, or other sections of the Act;
  - (II) More stringent effluent limitations (including prohibitions) required be either State of local authority preserved by section 510 of the Act, or Federal authority (law, regulation, or treaty); and
  - (III) Other pollution control requirements (e.g., best management practices" required by local, State, or Federal authority are not stringent enough to implement any water quality standards (WQS) applicable to such waters.

### §130.7 (cont.)

(b) (3) For purposes of listing waters under §130.7 (b), the term "water quality standard applicable to such waters" and "applicable water quality standards" refer to those water quality standards established under section 303 of the Act, including numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements.

## **§130.2**

(j) Water quality limited segment. Any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Act.

# **§130.10**

- (b) The Act also requires that each State initially submit to EPA and revise as necessary the following:
- (2) Identification of water quality-limited waters still requiring TMDLs (section 303(d)), pollutants, and the priority ranking including waters targeted for TMDL development within the next two years as required under §130.7(b) in accordance with the schedule set for in §130.7(d)(1).