

Funding And Monitoring

Cobbling it together

Focus on watersheds and streams in
North Bay

Method of Research



Acknowledgements

- Slides from Napa RCD, Sonoma Ecology Center, Cal Trout, SPAWN, Marin RCD, Rutherford Dust, Napa County Flood Control and Water Conservation District, Laurel Collins
- Information from all of the above and Marin County, Coastal Conservancy, CEMAR, Terressa Sciences
- THANKS!!

Monitoring

- Systematically sampling to to detect a change in a physical, chemical or biological parameter

Types of Monitoring (MacDonald, 1991)

- **Status and Trend:**

Characterizes existing biota, chemical or physical conditions (i.e. current fish distributions in a creek)

- **Implementation (compliance):**

- **Effectiveness and validation:** Did project have desired biological/physical effect?

Scales of monitoring

- Regional

Surface Water Ambient Monitoring (SWAMP)

Tomales Bay Pathogen Monitoring

- Watershed

- Stream- headwaters to mouth

- Stream reach

- Habitat unit

Funding Sources small and scattered, but significant monitoring is occurring

- Most grant funding is associated with implementation grants
 - Monitoring for Project implementation and effectiveness: up to 10% of grant amount
- Limited grant funding for baseline or watershed scale monitoring and assessments- other sources exist

No Single Model

Programs in each watershed have different funders and specialize in different parameters

■ Commonalities

- Creative
- Institutionally dedicated to monitoring
- Staff dedicated to monitoring
- Collaborative with many partners

Examples

- Napa RCD
- Sonoma Ecology Center
- SPAWN
- Marin RCD
- Marin County

Napa RCD On-going Monitoring

- Smolt Trapping; since 2009
- Spawner surveys – since 2004
- Snorkel surveys- Rutherford- since 2005
- Rutherford Project Monitoring
- Stream gauge monitoring
- 2 year stream sediment monitoring: gravel permeability and Redd scour





Smolt Trap Funding

- Gasser foundation,
- Napa River Steelhead
- Wildlife Conservation Commission- fines
- Napa county JPA (Joint funding County and Cities)
- CIAP- Offshore Oil Drilling
- CDF&G-contingency funds





Rutherford Project Monitoring – Collaborative

FUNDERS:

- Rutherford Dust Society- special assessment District
- Napa County Flood Control and Water Conservation District- Measure A Tax Funds
- JPA-County and Cities
- Wildlife Conservation Board
- Wildlife Conservation Commission, Napa County
- Grants: SWRCB, AARA, EPA, CA. Dept. Parks and Rec.

Monitoring Plan Components

- Annual Stream Reach Survey
- Channel Transect Surveys and Local Longitudinal Profiles
- Vegetation Establishment Surveys
 - Planted Areas
- Landowner Participation Surveys
- Air Photo Analysis





Regional Rainfall and Stream Monitoring System.

- 23 gauge sites- 10 monitored by RCD
- Funded by
 - Cities
 - Napa county Flood control and Water Conservation District
 - RCD

Napa RCD Success

- Committed to creating sound, scientific monitoring program
- Local reputation for scientific, cost effective, unbiased
- Educated community- have convinced land owners that good monitoring is in their best interest
- Dedicated scientific staff and grant writers- willing to bang into walls!



Sonoma Ecology Center

Long History of Monitoring and GIS

- Streambed Sediment and Source Assessment
- Steelhead Limiting Factors Analysis
- Stream Temperature Monitoring
- BMI Monitoring
- Stream Gauge and rainfall

Current Monitoring

- Stream geomorphic monitoring and analysis to prioritize restoration - partner Laurel Collins
- SWRCB CWA 319 grant (2 year)
- EPA San Francisco Bay Funding (through San Francisco Estuary Project)

Geomorphic Analysis- Stream Stability Classes

- Throughout Sonoma Creek watershed- select reaches
- Channel Cross –sections and longitudinal profile
- Measures of bank stability
- Streambed sediment
- Large Woody Debris
- GIS













Low Flow Monitoring- funded by Sonoma Water Agency

Geohydrologic Characterization, Water- Chemistry, and Ground-Water Flow Simulation Model of the Sonoma Valley Area, Sonoma County, California

By Christopher D. Farrar, Loren F. Metzger, Tracy Nishikawa, Kathryn M. Koczot,
and Eric G. Reichard

With a section on Basement Rock Configuration Interpreted from Gravity Data

By Victoria E. Langenheim

SPAWN- Focus San Geronimo Creek

- **Fish rescue/relocation**-since 1999
- **Spawning surveys**: since 2001
- **Out-migrant smolt study**- since 2006
- **Water Quality: (TMDL) 2004-05- Ongoing**
funded by RWQCB (Prop 13)





Staffing and Funding

- Work done by trained staff, Americorps, and volunteers
- Most of funding from general donations and private foundations

Riparian Zone Monitoring Plan

- Marin RCD and UCCE- an exercise in collaboration
- Development Funded by SWRCB Prop 50 and AARA
- Monitoring funded by Marin County, implementation grants (SWRCB 319, Coastal Conservancy)

Implementation, Effectiveness and Validation Monitoring



Photo monitoring







Measurement





Collaboration



Marin County

- Watershed Assessments –existing data and filling in gaps
- Historical Ecology Projects
- Fish Passage Barrier Analysis

Funding

- County and cities
- CDF&G
- Coastal Conservancy
- San Francisco Estuary Project (EPA funding)
- North Bay Watershed Association
- San Francisco Estuary Institute
- RWQCB
- Long-term: Assessment Districts to implement

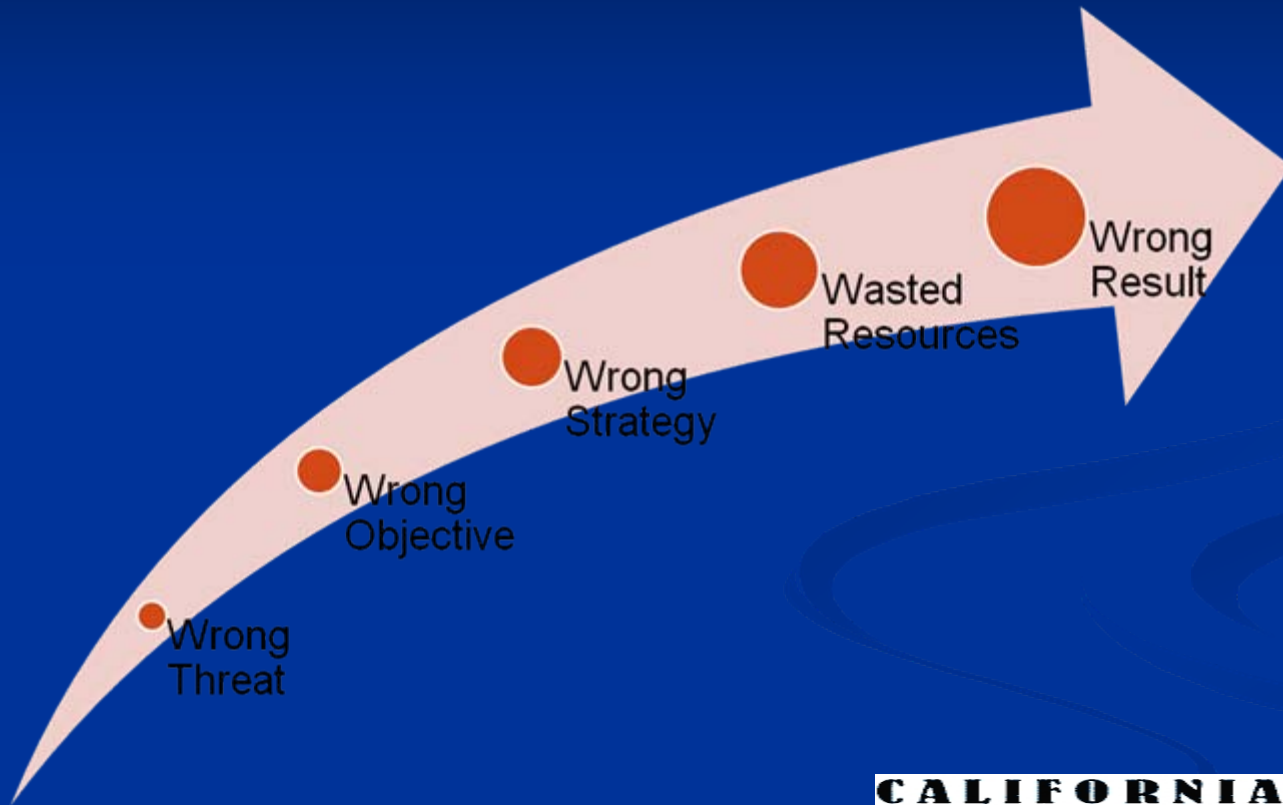
Success Despite large barriers to Success

- Institutional and individual dedication and commitment to monitoring
- Creativity
- Cobble cobble cobble- every little morsel
- Sound Scientific basis for programs and strong scientific staff
- Collaboration
- Community support

Challenges

- Funding sources small and scattered
- Funding duration Short
- Qualified staff retention
- Data Management and analysis
- Access
- Need hypothesis based monitoring
- Lack of integrated watershed scale assessments of fundamental processes that evaluate cause and effect

Wrong Threat, Wrong Result



Monitoring Programs can lead to improved environment



MacDonald, Lee, Alan W. Smart, and
Robert C. Wissmar. 1991. Monitoring
Guidelines to
Evaluate Effects of Forestry Activities on
Streams in the Pacific Northwest and
Alaska.

EPA/910/9-91-001. May 1991.

Reference

MacDonald, Lee, Alan W. Smart, and Robert C. Wissmar. 1991. Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska. EPA/910/9-91-001. May 1991.