



Update on the Bioassessment Program for the Regional Water Quality Control Board's Region 9

Lilian Busse

San Diego Regional Water Quality Control Board
Southern Watershed Protection Unit

Joe Purohit
EcoLayers Inc.

Outline



- Summary of bioassessment programs in R9
- Results for bioassessment data in R9
- Future bioassessment work in R9
- Data dissemination of bioassessment data in R9 – WISE program (Joe Purohit, EcoLayers Inc.)



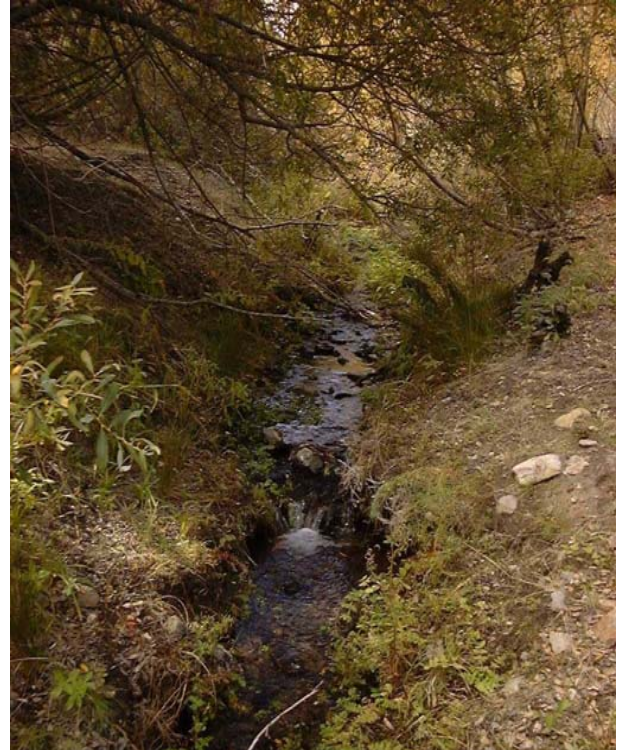
Bioassessment programs in R9

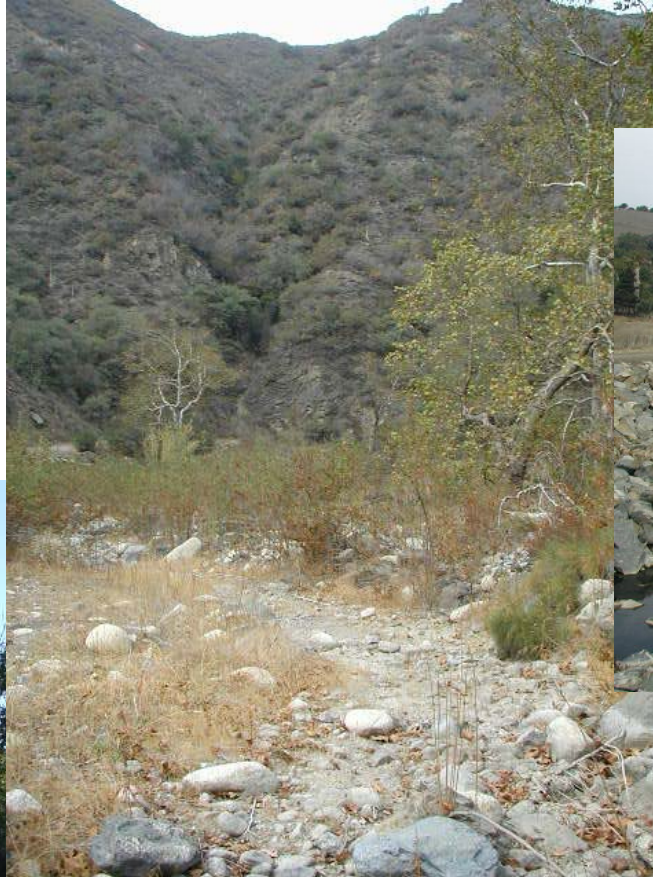
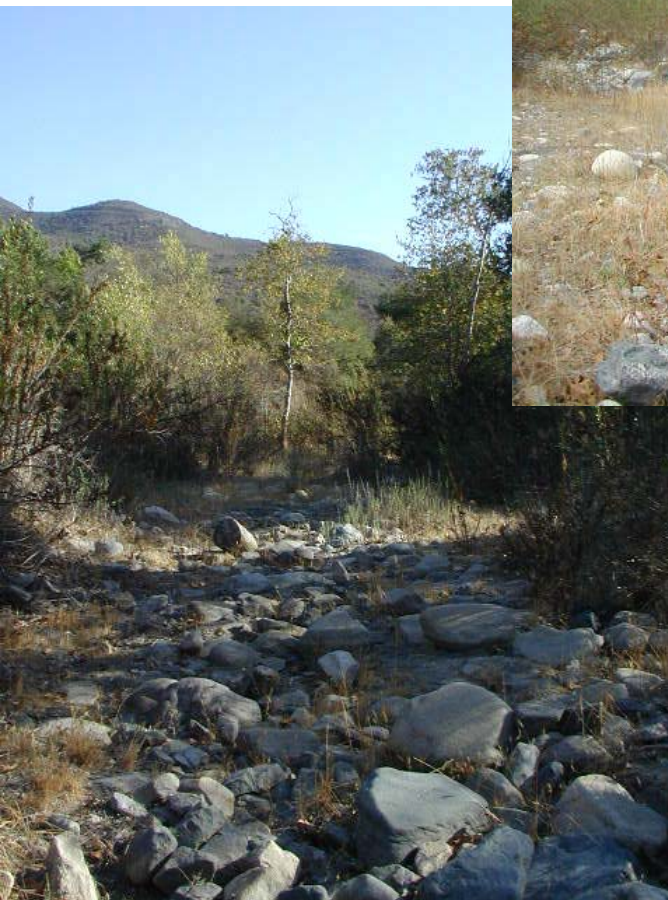
- San Diego Regional Board (since 1998)
- SWAMP (2003-2005)
- San Diego Stream Team (since 1998)
- Special Studies:
 - Postfire special study (since 2003)
 - San Diego Repeat sampling study (2003)
 - San Diego Mission Trails Park (1996-1997)
- Municipal Stormwater Permit
 - collection of bioassessment samples (since 2001, San Diego County, Riverside, Orange County - 39 sites)
 - 401 certifications
 - NPDES permits

Methods

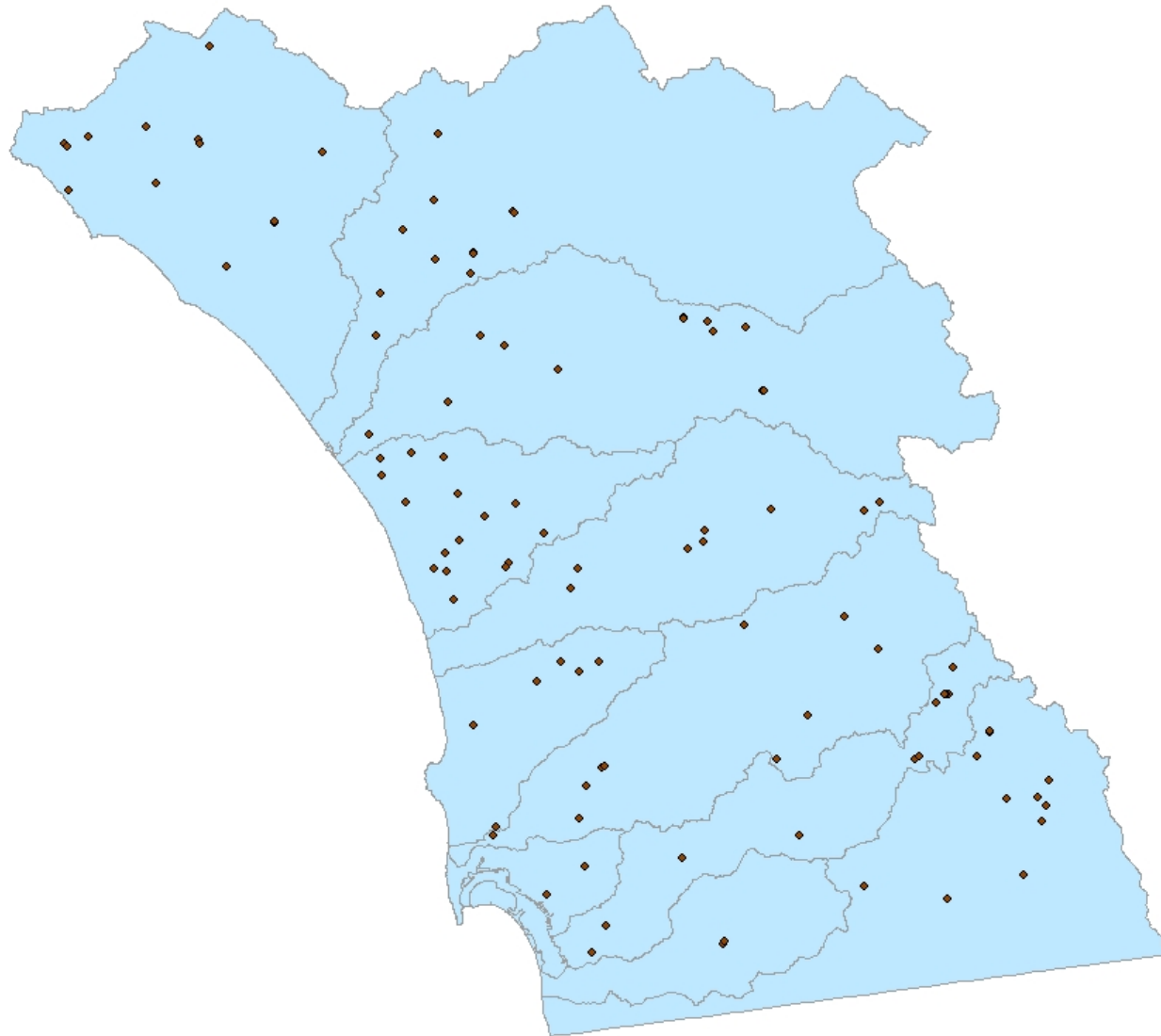


- Sampling done by DFG, SDST, and R9 staff
- Method used: CSBP
- Since this year: SWAMP bioassessment protocol
- Sample processing: DFG (some by SDST)
- Current data storage: CalEDAS database
- Future data storage: SWAMP database





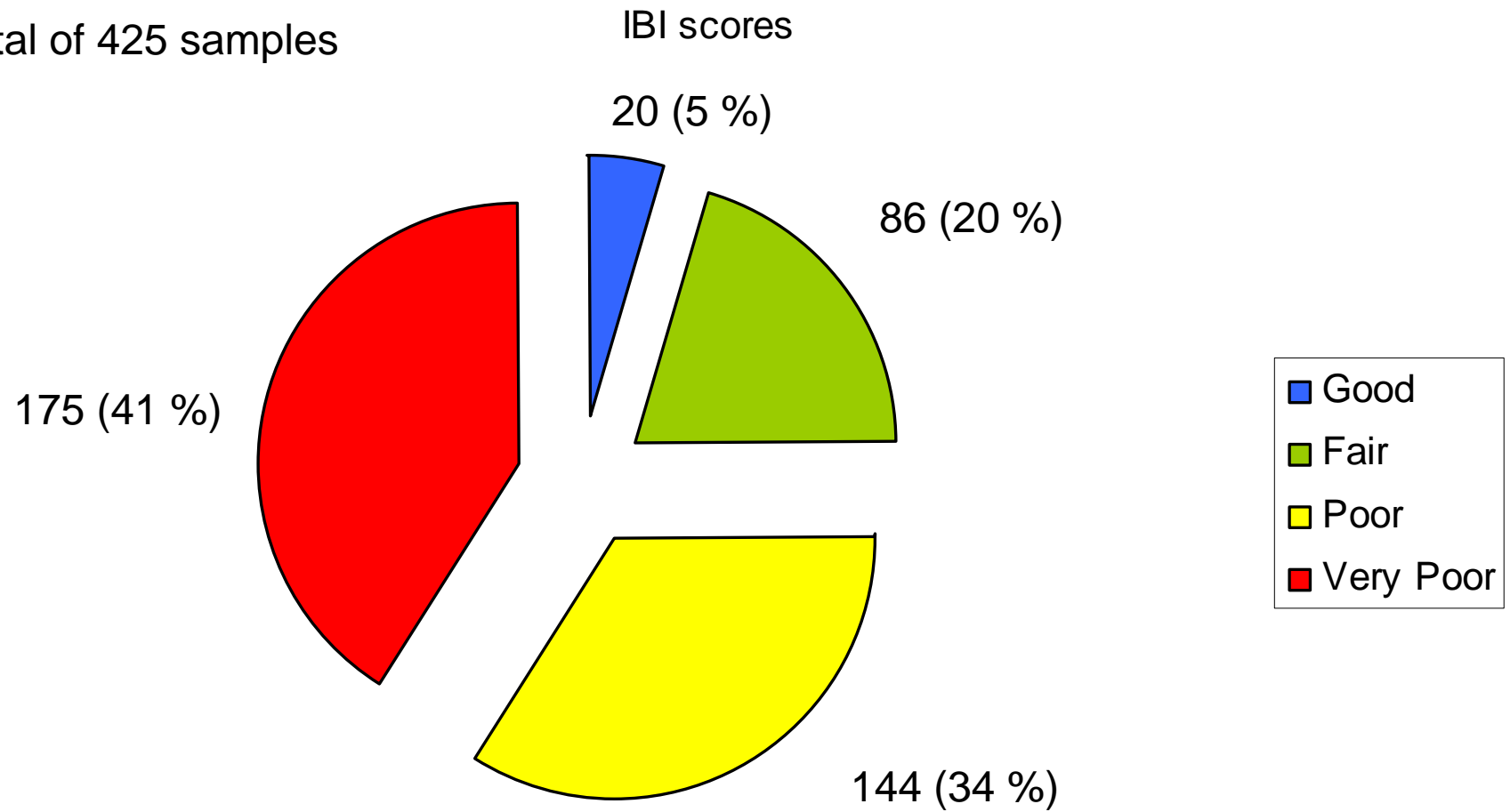
Map of bioassessment locations

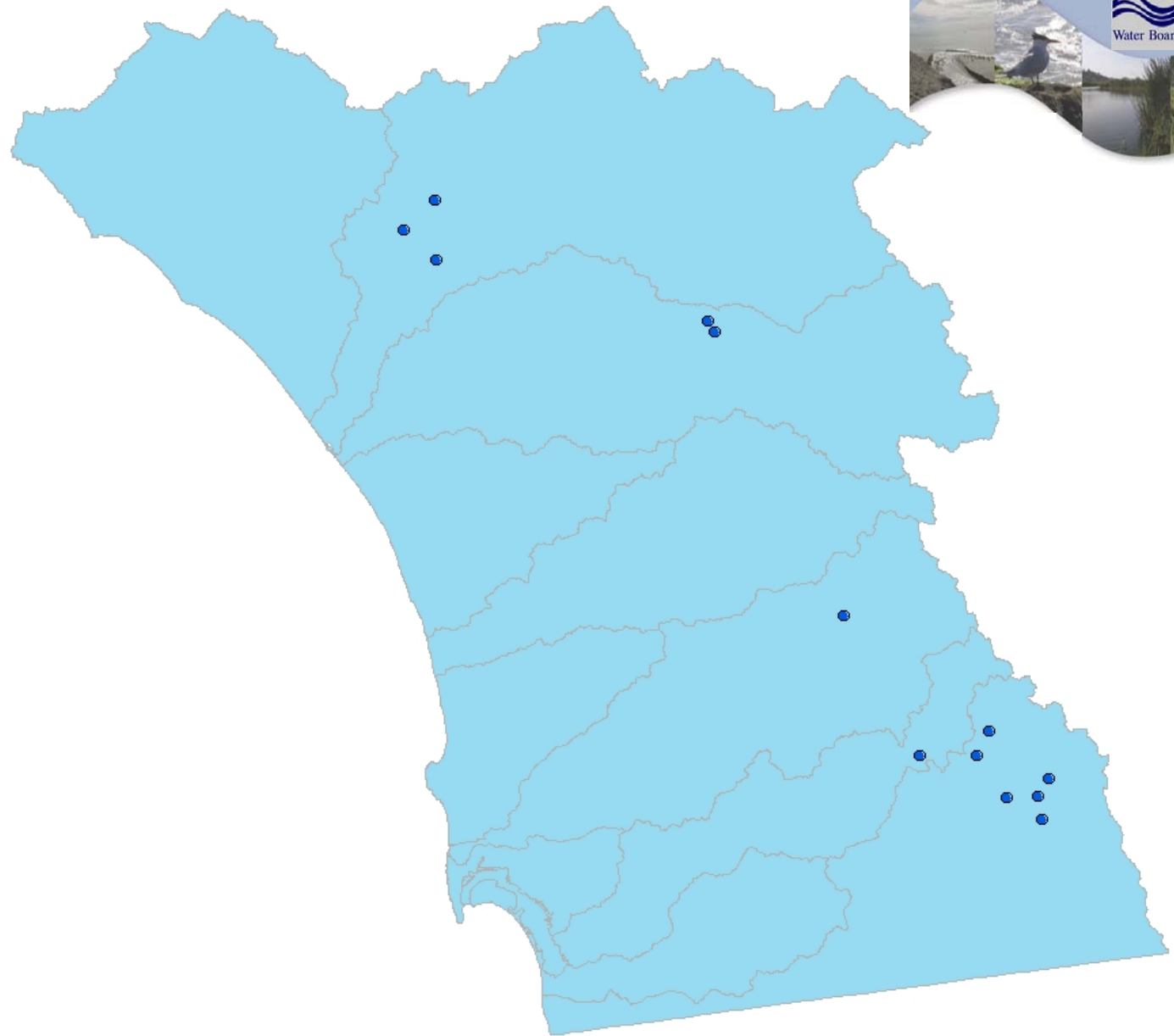


IBI scores

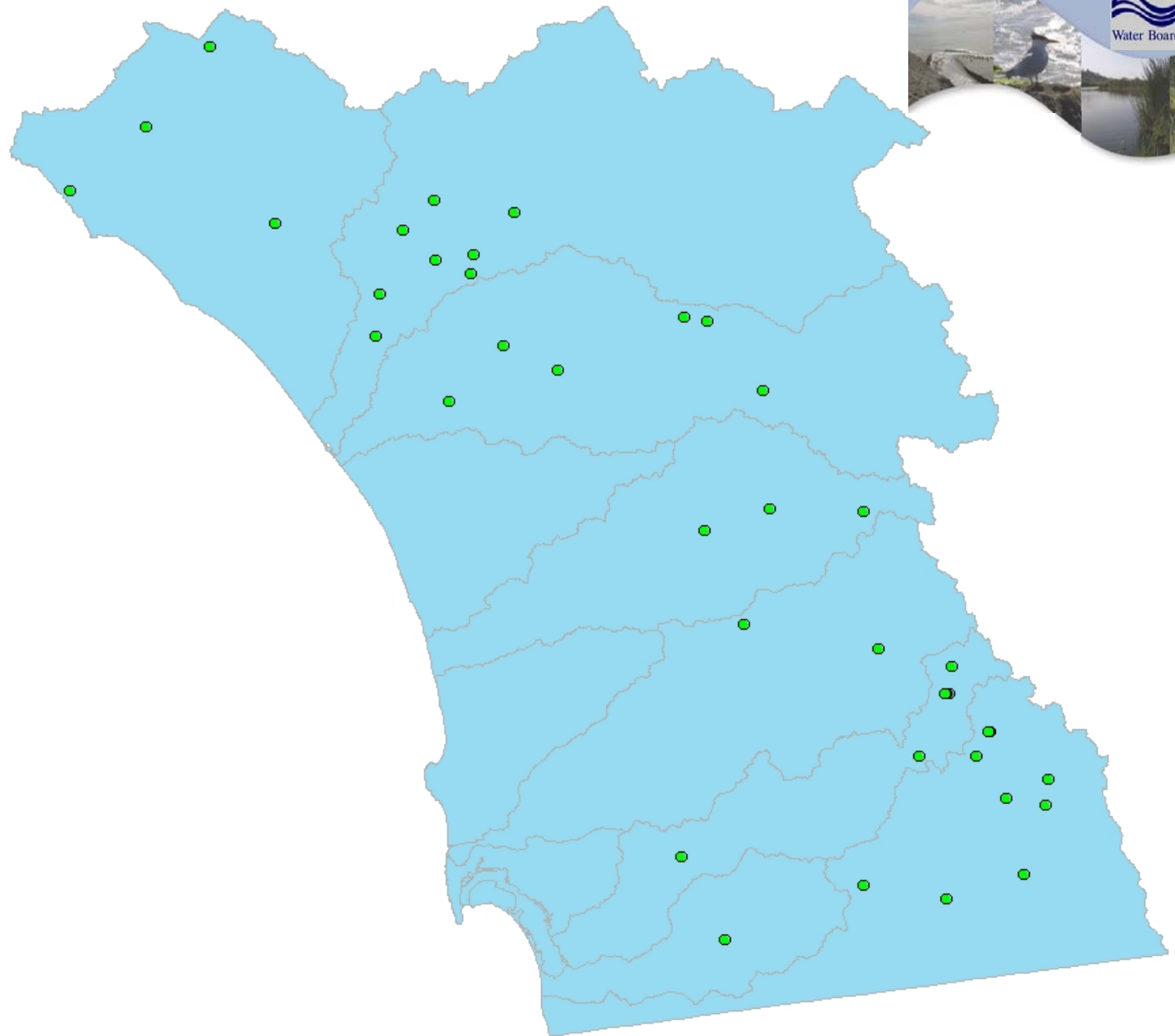


Total of 425 samples

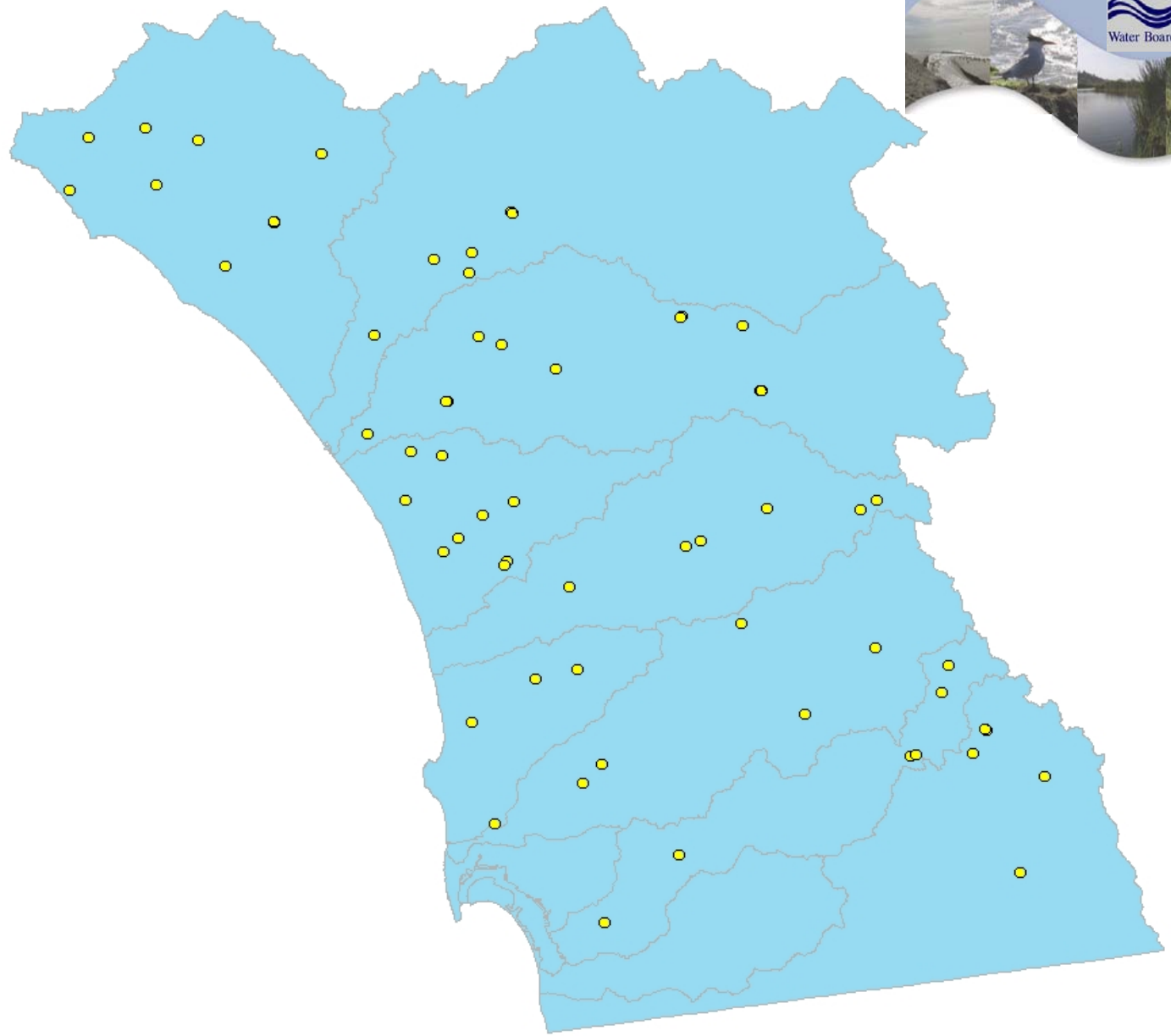




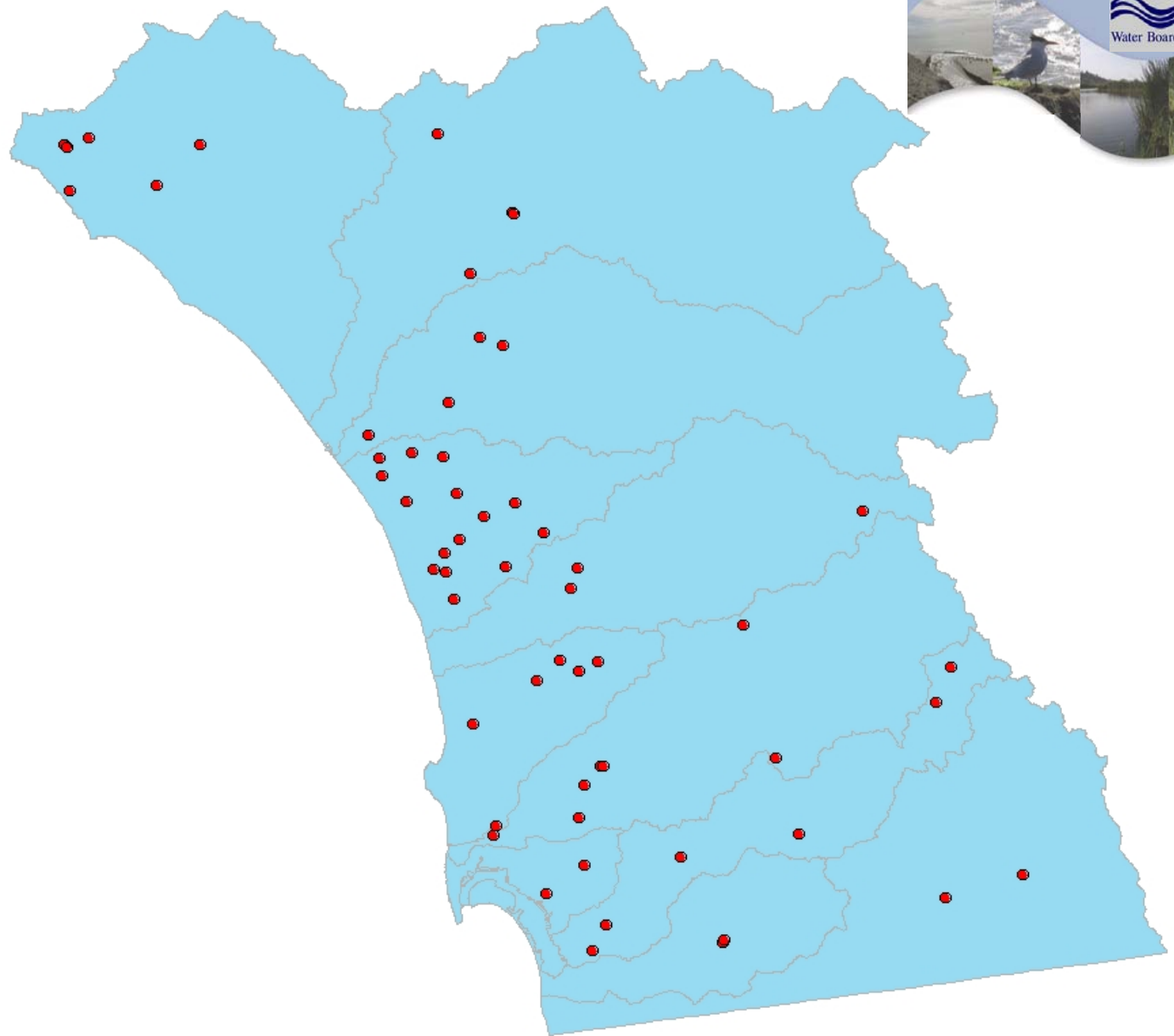
Sites with IBI scores “good”



Locations with IBI scores "fair"

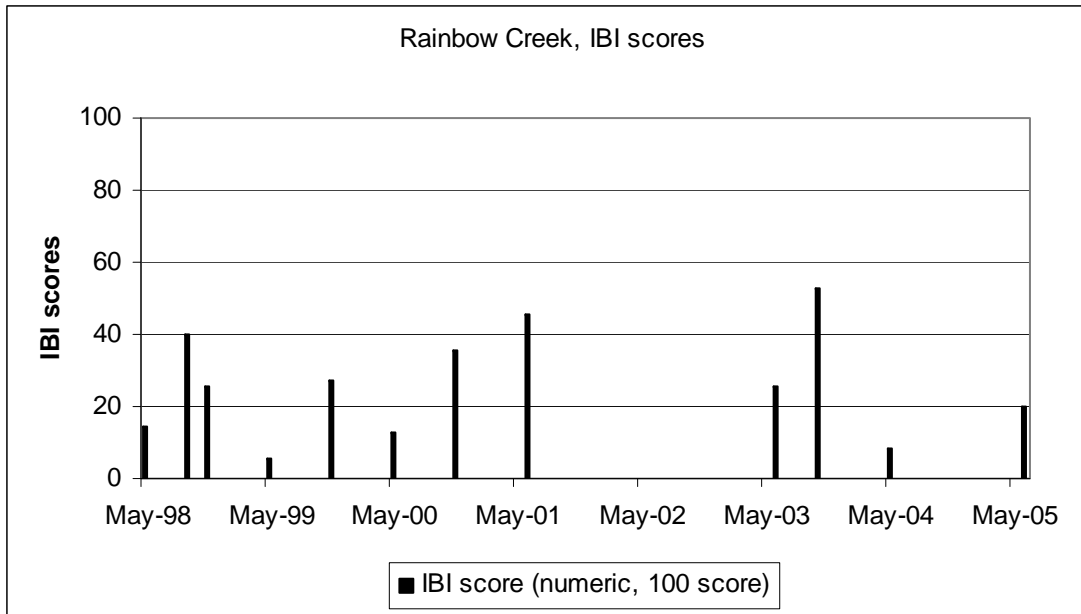


Locations with IBI score “poor”



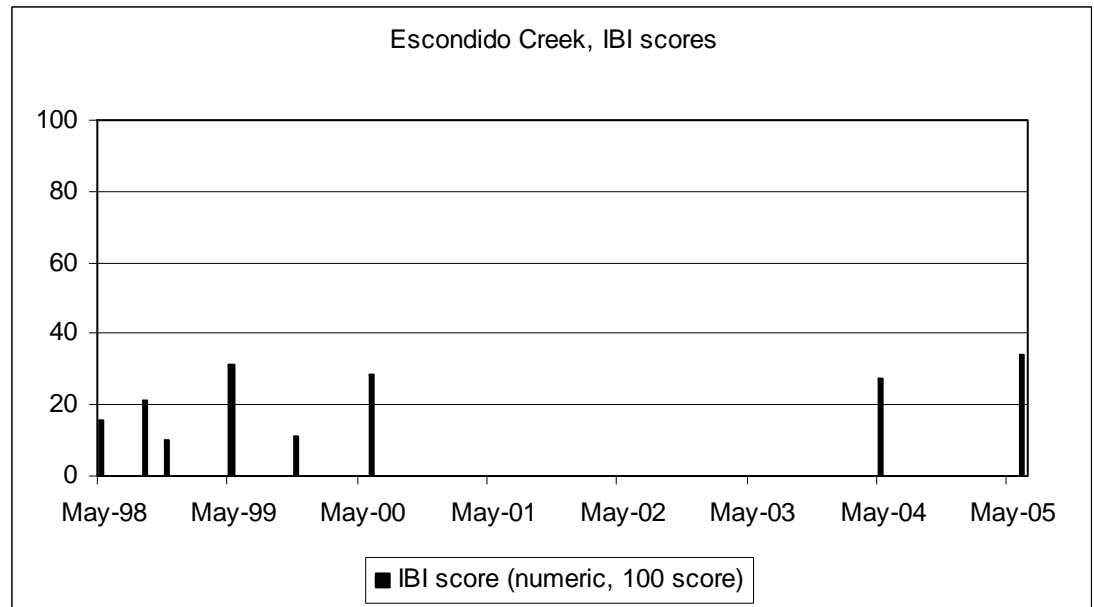
Locations with IBI score "very poor"

IBI scores over time

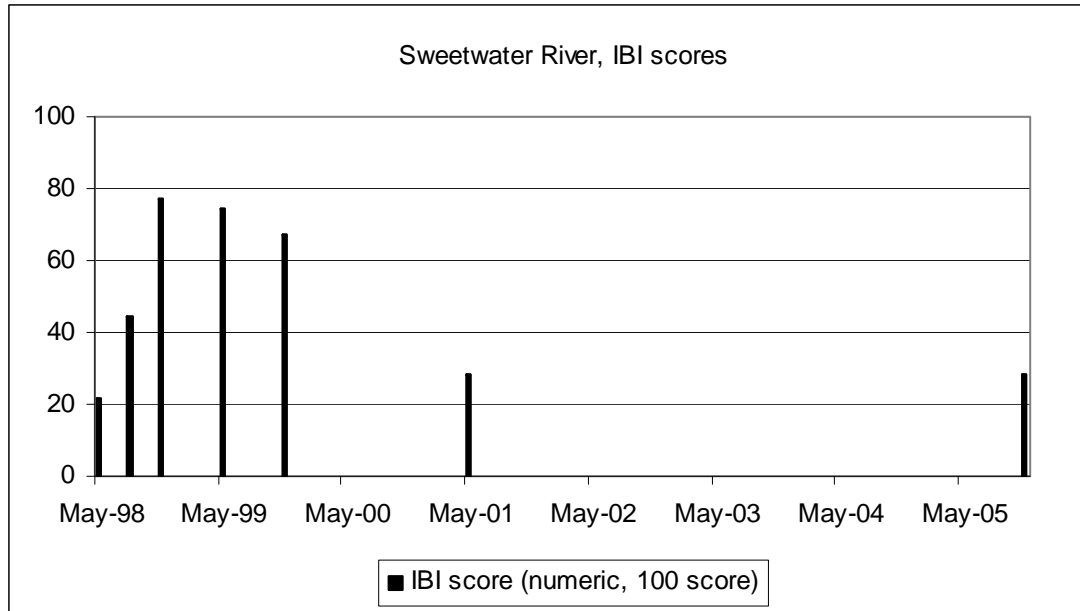


Ag, rural

Urban, ag

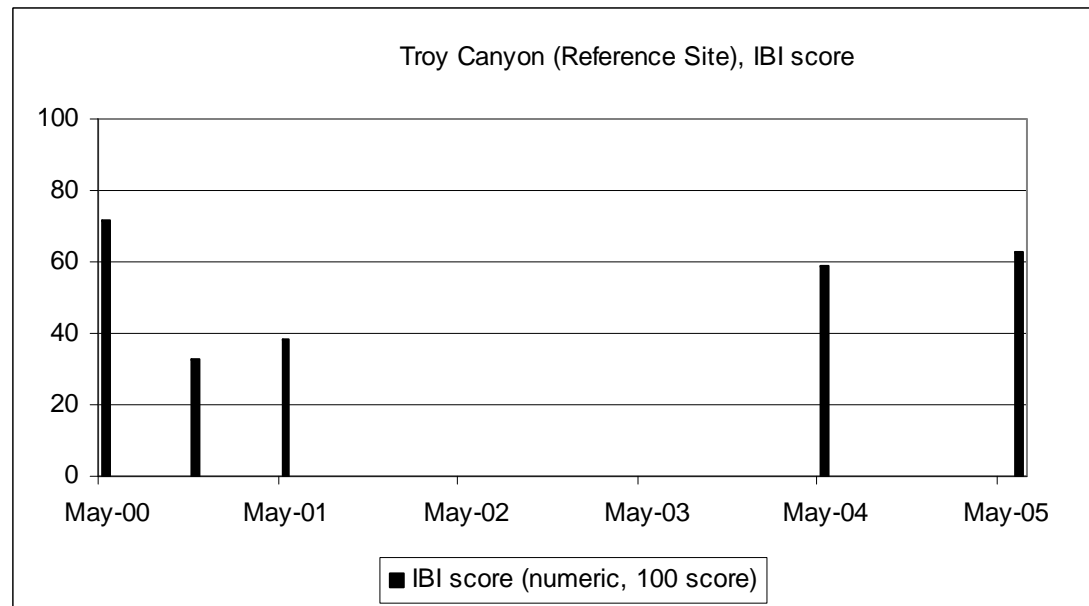


IBI scores over time



Watershed burned, drought

Reference site,
Livestock after May 2000

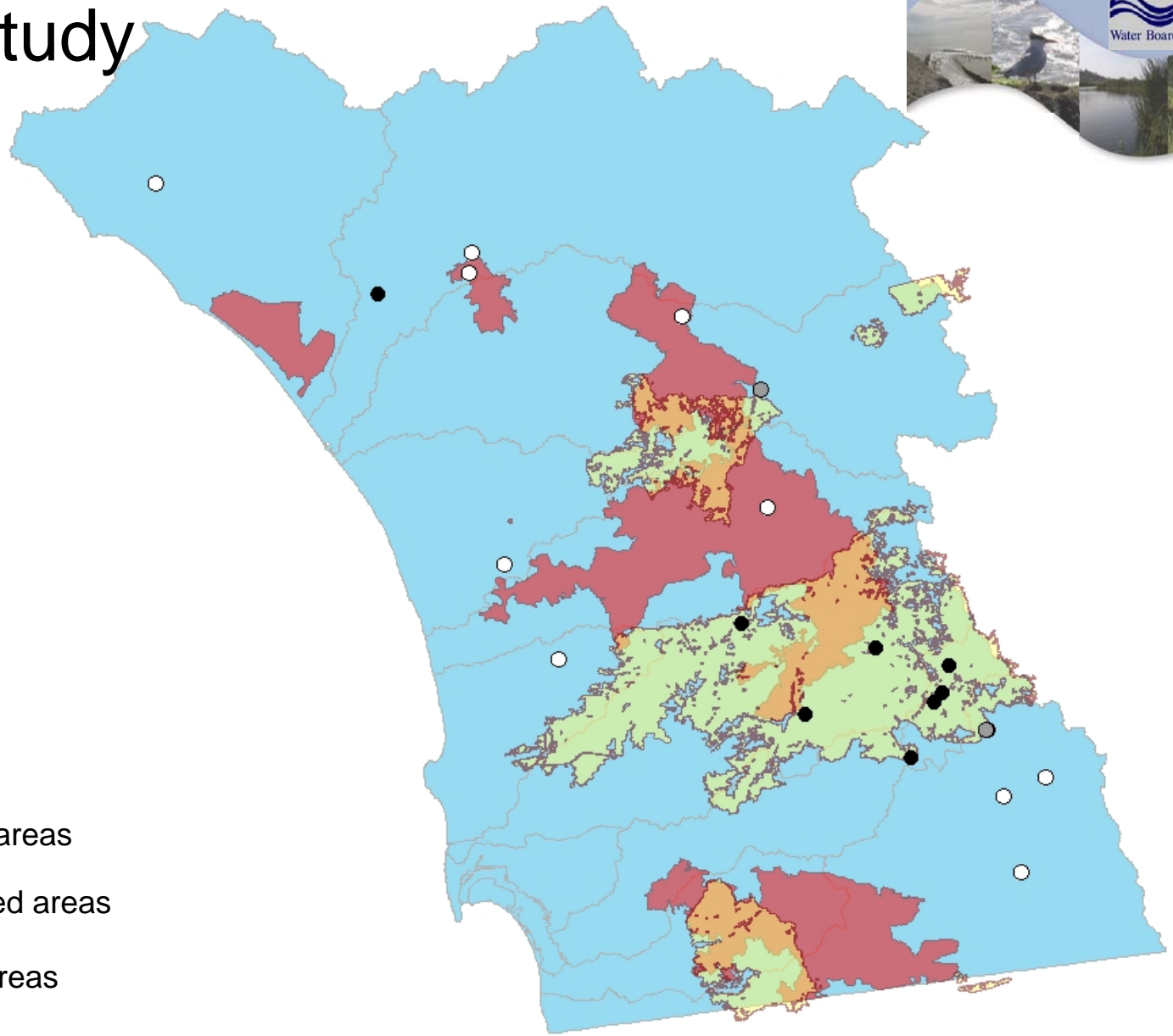


Postfire Study



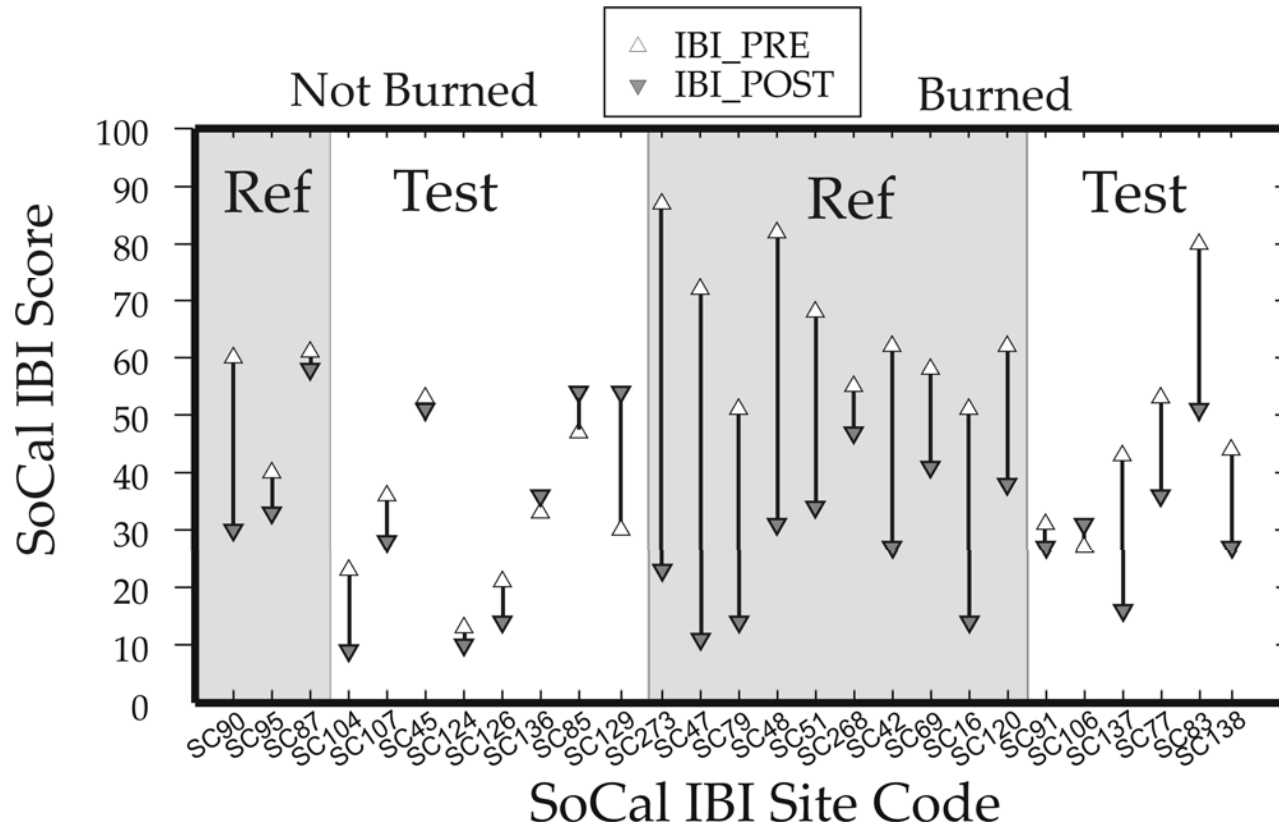
- Sampling after the 2003 Wildfires in San Diego
- Sampling of 25 sites in 2003 (baseline data), 2004, 2005, and 2007
- Sites were located in non-burned areas, partially burned areas, and fully burned areas.

Postfire Study



- Fully burned areas
- Partially burned areas
- Non-burned areas

Preliminary Results from Postfire Study (Wildfire 2003)



Future bioassessment work



- Stressor Identification
- SMC (**S**tormwater **M**onitoring **C**oalition) study
- Grants with SCCWRP (periphyton, and non-perennial stream grant) funded by Prop. 50
- Biocriteria/TALU
- Climate change impacts (in the future!)

WISE: Watershed Integration Software Environment for Region 9 Bioassessment

Joe Purohit
EcoLayers, Inc.
Phone: 858 780 9415
Email: Joe@EcoLayers.Com

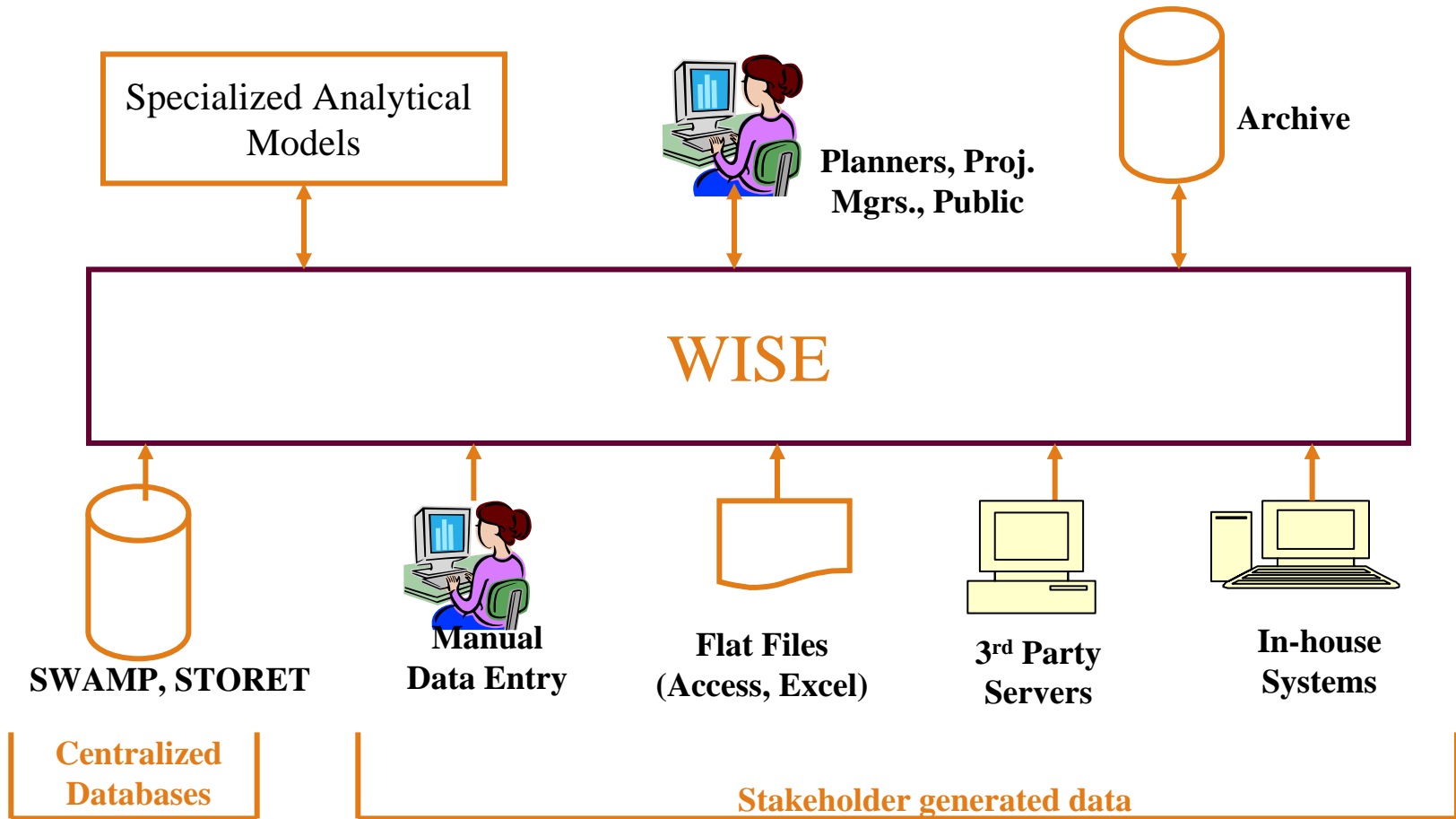
WISE Product Vision

A Decision Support Tool for Collaborative Environmental Governance



The screenshot displays the EcoLayers web application interface. On the left, a 'Layers' panel lists various data sources and maps, including 'Regional Data Sources', 'Base Map', 'San Diego River Park Found', and 'El Cajon'. The main map area shows a geographical view of the San Diego region, with labels for 'SAN DIEGO', 'SWEETWATER', and 'PUEBLO SAN DIEGO'. A text box on the right provides specific hydrologic information: 'Hydrologic Area -- Lower San Diego', 'Sub Area -- El Monte', and 'Hydrologic Unit -- 907.150000'. The EcoLayers logo is located in the bottom right corner.

WISE Architecture



WISE for Region 9 Bioassessment

BUG-IT: Better Use of GIS & IT

OBJECTIVES

- Support San Diego Stream Team & Reg. 9 bioassessment program
- Enhance the value of bioassessment data
 - Share and integrate bioassessment data with other water quality programs at watershed, jurisdictional and stakeholder level
- Strengthen collaboration with other stakeholders & volunteer programs

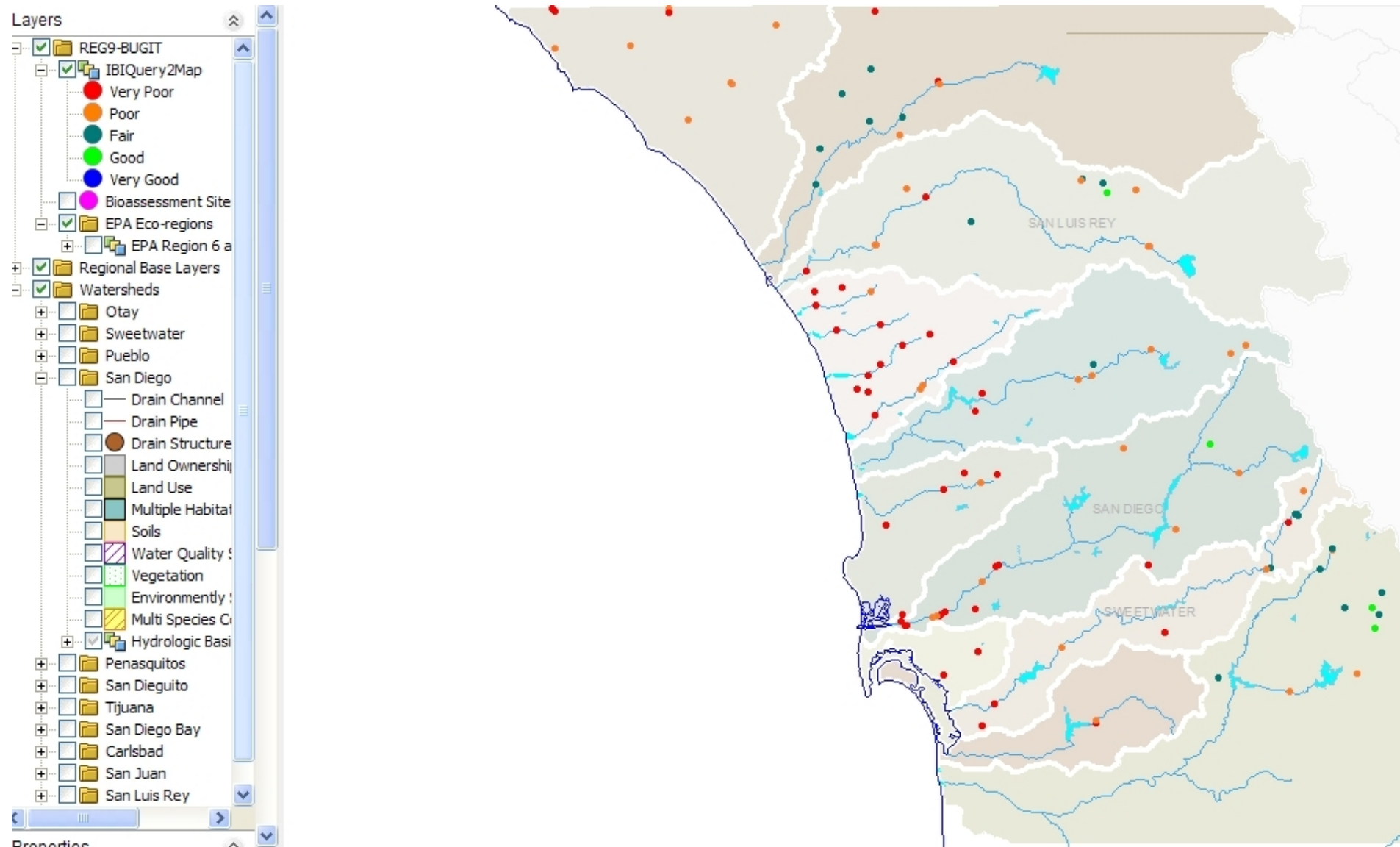
BUG-IT

Key Features

- Privacy & security: User-id/password, user restrictions
- Handling information:
 - Manage site data, IBI, taxa, photos, source documents, etc.
 - Easily customize spatial layers
 - Input, import and archive under user control, based on permissions
- Google map integration
- Search and retrieve just the needed information
- Customizable reports and charts
- Better manage and coordinate volunteers through separate Access database
- Public outreach & access to BUG-IT data
- Online statistical analysis (in development)
- Share data and collaborate with other watershed stakeholders (in development)

BUG-IT for Region 9

Key Features – Spatial Reports



BUG-IT for Region 9

Key Features – Public Access to Data

San Diego Region Bioassessment Data

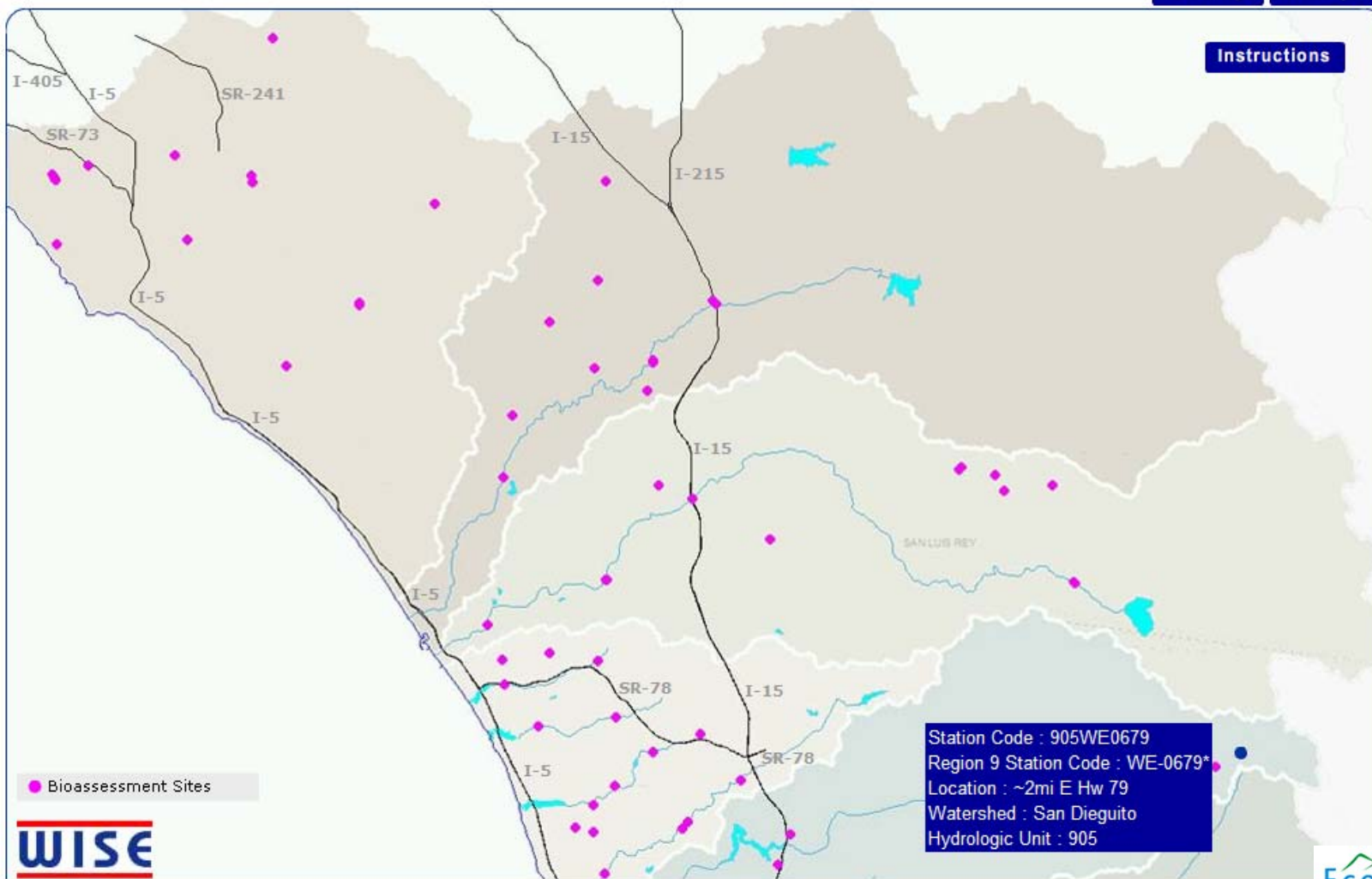
[North](#)

[South](#)

[Glossary](#)

[View Report](#)

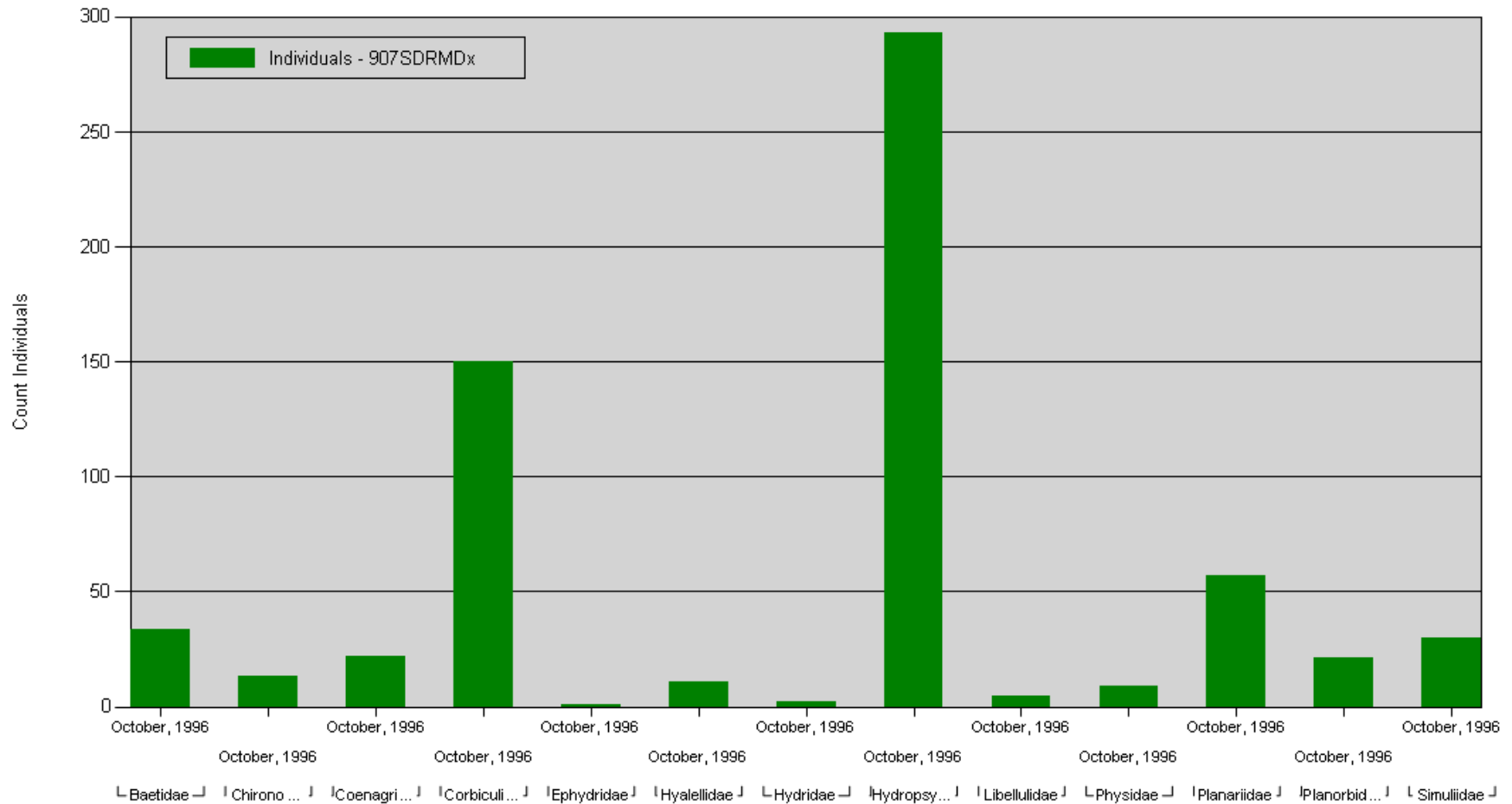
[Instructions](#)



BUG-IT for Region 9

Sample Chart

Taxa Family Individuals



WISE: An Exemplar Implementation

San Diego River Watershed

Prospective Watershed Stakeholders

- San Diego River Park Foundation
- San Diego Stream Team
- San Diego River Conservancy
- City of San Diego
- City of El Cajon
- City of Santee
- San Diego Regional Water Quality Control Board

Applications and Data Sets:

- Citizen water quality monitoring
- Exotics management
- Trash management
- 401 Projects
- Mitigation sites
- Wet and dry weather monitoring
- Flow & precipitation (real time)
- River park land acquisition, restoration and monitoring
- Index of Biotic Integrity (IBI)
- Taxa (bugs)
- Hydromodification inventory
- BMP inventory
- Data from construction and industrial sites regulated under stormwater permit