Management Measure Tracking in California

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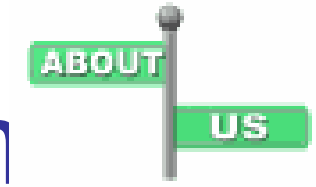
California NPS Program



- Joint 319/CZARA 6217
- CCC & Water Boards Partnership (and EPA)
- **Goal**: Implement 61 Management Measures By 2013
- NPS Leading Cause of Water Quality Impairments in California
- 2005 & on Biennial Report to Include Tracking Information

Why Track Management Measure Implementation?

- ID Extent of MM Implementation
  - Is Technology (MM) Being Used?
  - Where & Where Not?
- Determine Progress Towards Goal = MM Implemntation
- Combine with Water Quality Info
  - Target Implementation
  - Evaluate Effectiveness

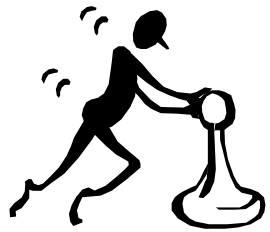
The Tracking Ideal!

- To Identify the Extent of On-the-Ground Implementation
- Associate On-the-Ground Implementation with Water Quality Data
- Document Program and Management Measure Effectiveness

But... life *(tracking)* is Filled with Compromises

- Lack of Direct Reporting Mechanisms
  - Self-Reporting Limitations
- Data Concerning Individual Actions is Very Limited
- Cause & Effect Challenge

California Tracking Strategy



- Need to Use Surveys, Policy Analysis, Indicators, etc.
- Target Select Measures
- Target Geographic Areas
- ID Indicators & Data Sources
- Based on Opportunity and Importance

California
Targeted MMs for Tracking

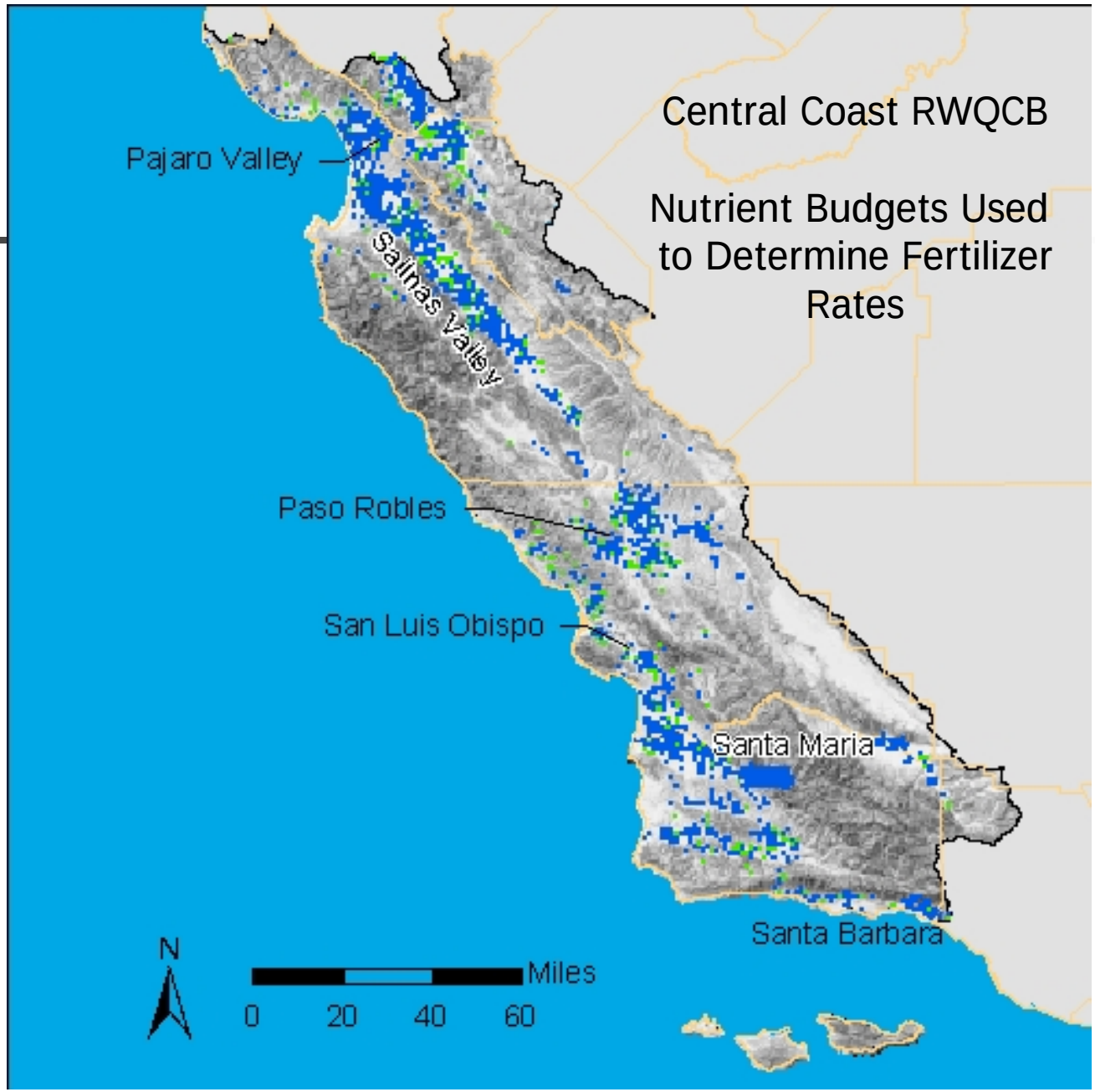
- **Irrigated Agriculture** (Central Coast)
  - 450,000 Acres (Central Valley = 10m Acres)
  - 2500 Growers (CV = 40,000 growers)
  - A $2 Billion Industry (CV = $33b)
  - Nitrate & Toxicity (OP and Pyrethroid pesticides)
- **Marinas** (Statewide)
  - >516 marinas, 107,000 berths, copper TMDLs
- **Wetlands** (Statewide)
  - 90% loss of original wetlands
- Urban (Population Growth > Land Conversion)
  - 35m now > 68m in 2050 > 92m in 2100

Irrigated Agriculture

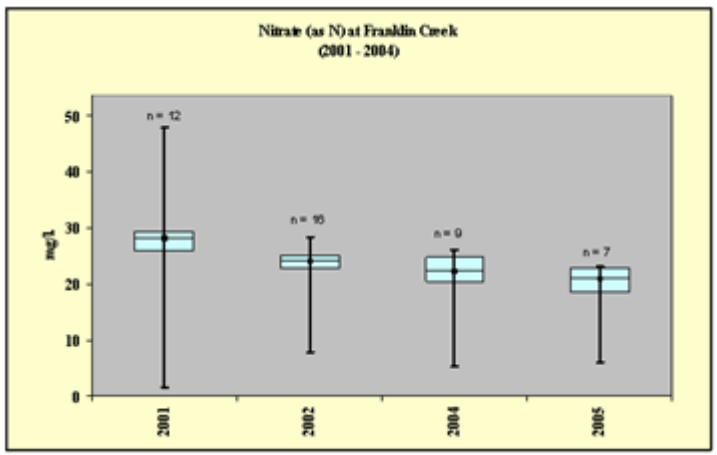
- State WQ Regulations Apply to Agriculture
- Central Coast Irrigated Ag Conditional Waiver
  - Individual “Grower” Enrollment
  - 15 Hours of Education
  - Farm Water Quality Plan
    - irrigation management
    - nutrient management
    - pesticide management
    - erosion control
  - Implementation and **Reporting** of Practices
    - On-line registration >>> data base!
  - Group or Individual Monitoring

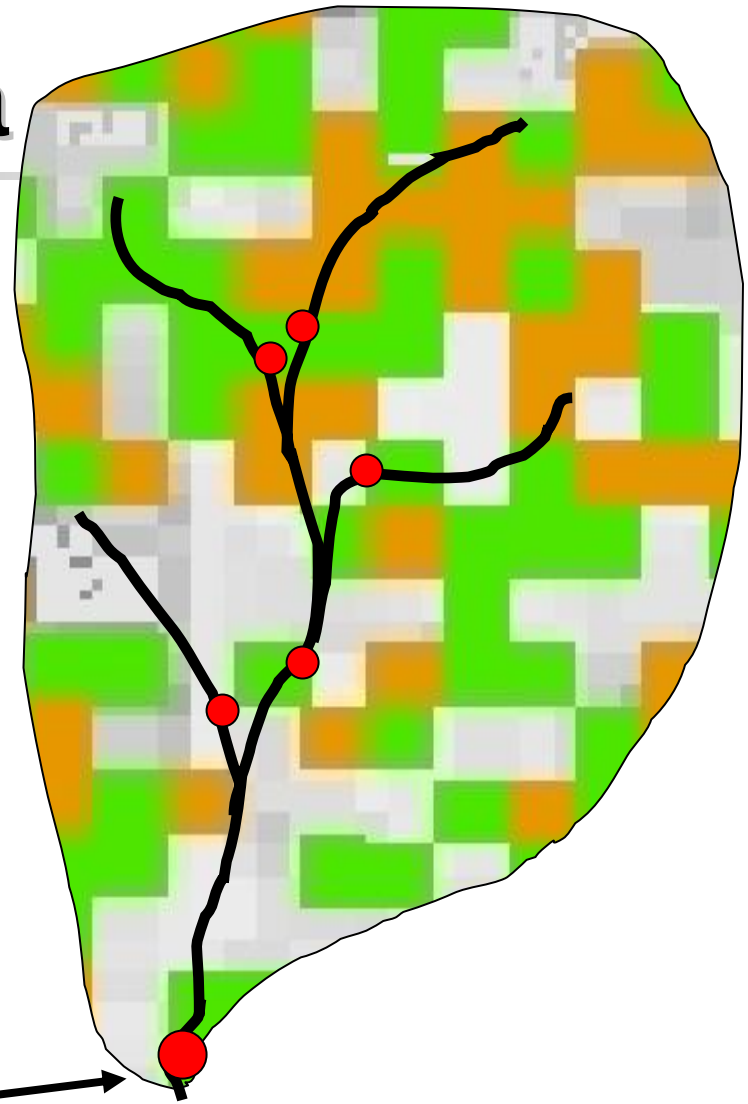
Central Coast Irrigated Agriculture continued

- **Extent of Implementation -**
  - Ag Waiver Enrollment (indicator)
    - 1,600 Growers out of 2,500 (64%)
    - 334,000 Acres Out of 434,000 Acres (75%)
  - # of Water Quality Courses (indicator)
    - 35 Courses/1,800 Participants (by 9/05)
    - 30 Courses Planned (by 12/06)
  - # of Farm Plans (indicator)
    - 600 Growers out of 2,500 (24%)


Central Coast RWQCB
Nutrient Budgets Used to Determine Fertilizer Rates
Pajaro Valley
Salinas Valley
Paso Robles
San Luis Obispo
Santa Maria
Santa Barbara
N
Miles
0
20
40
60

Linking Land Use & Monitoring Data





Long term site

Irrigated AG: Where Will We Go Next?

- Central Coast RWQCB
  - Assessment of First Year's Data
    - Data Base/Web Site Development
    - Additional Indicators
  - Geographic Linkage of Sub-Watersheds and Monitoring Sites
    - Water Quality Trends
    - Practice Implementation
- Expand to Other Geographic Areas
  - Eg: Central Valley

Marinas

- Description
  - 516 marinas (over 10 berths)
  - 107,000 berths; 950,000 registered boats
  - 303(d) listings for copper, bacteria, nutrients
- NPS Program Activities
  - Clean Marina Certification
  - Boating Clean and Green
  - Considering Regulatory Approach

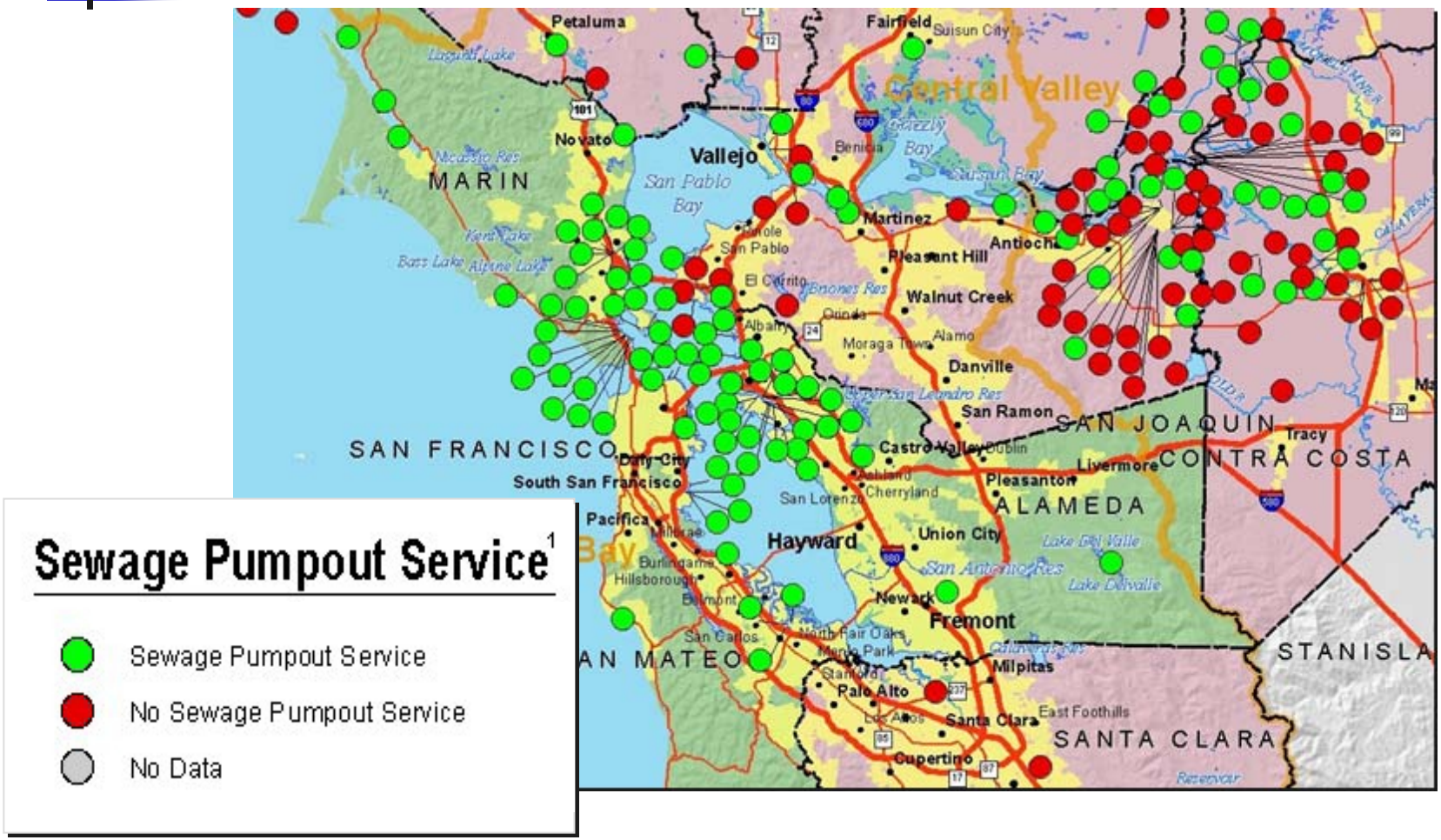
Marinas continued

- MM Tracking Priorities
  - Water Quality Assessment
  - Sewage Facilities
  - Waste Management Facilities
  - Public Education/Outreach
- Data Sources
  - Maps
  - Surveys
  - 303 (d))

Marinas continued

- Extent of Implementation
  - Water Quality Monitoring (indicator)
    - 57 Marinas out of 516 (11%)
    - Assessments not comparable
  - Sewage pumpout available (indicator)
    - 282 marinas out of 516 (55%)
  - Used oil collection available (indicator)
    - 401 marinas out of 516 (78%)

Marinas – Pumpout Services



Marinas: Where Will We Go Next?

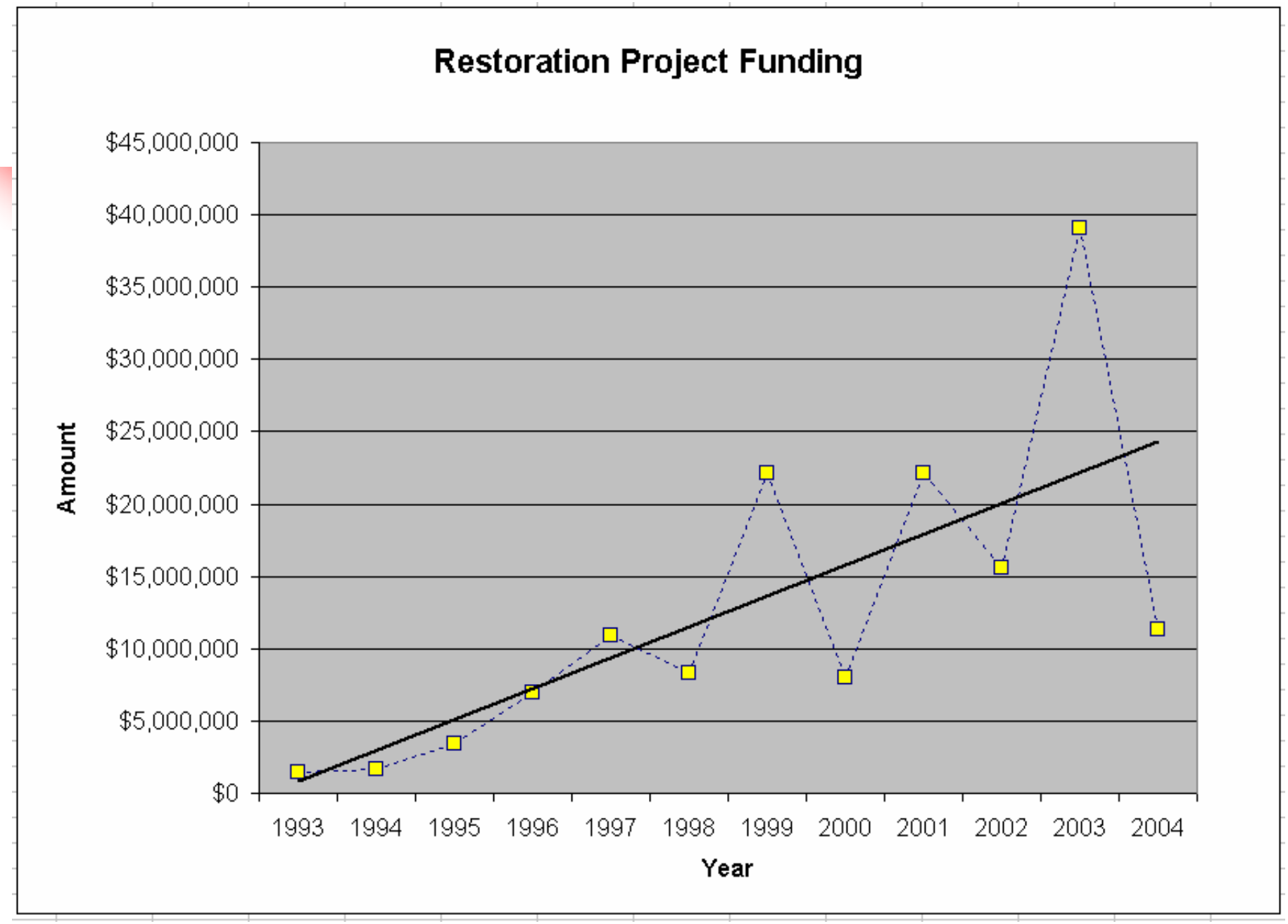
- Tracking
  - Statewide permit? => Tracking info
  - Assess outreach programs?
  - Mine existing monitoring data
- Regulation
  - Require clean marina certification?
  - Phase out copper paint?
  - Require additional pumpouts?

Wetlands

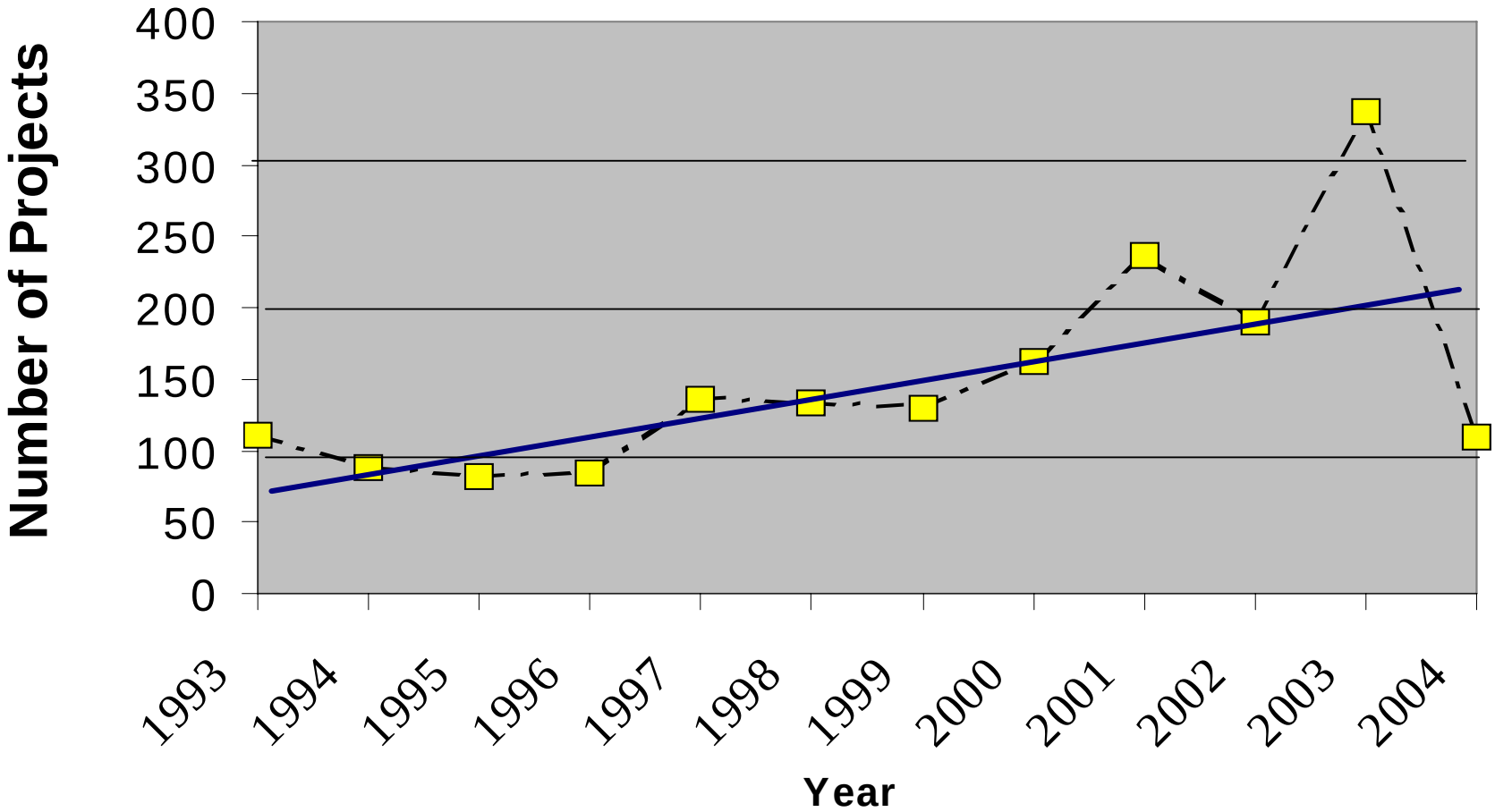
- California has Lost 90% of its Wetlands
- Significant State Funding for Acquisition and Restoration
- MM Tracking Priority
  - Restoration of Wetlands and Riparian Areas
- Data Sources
  - Existing Inventories/Data Bases

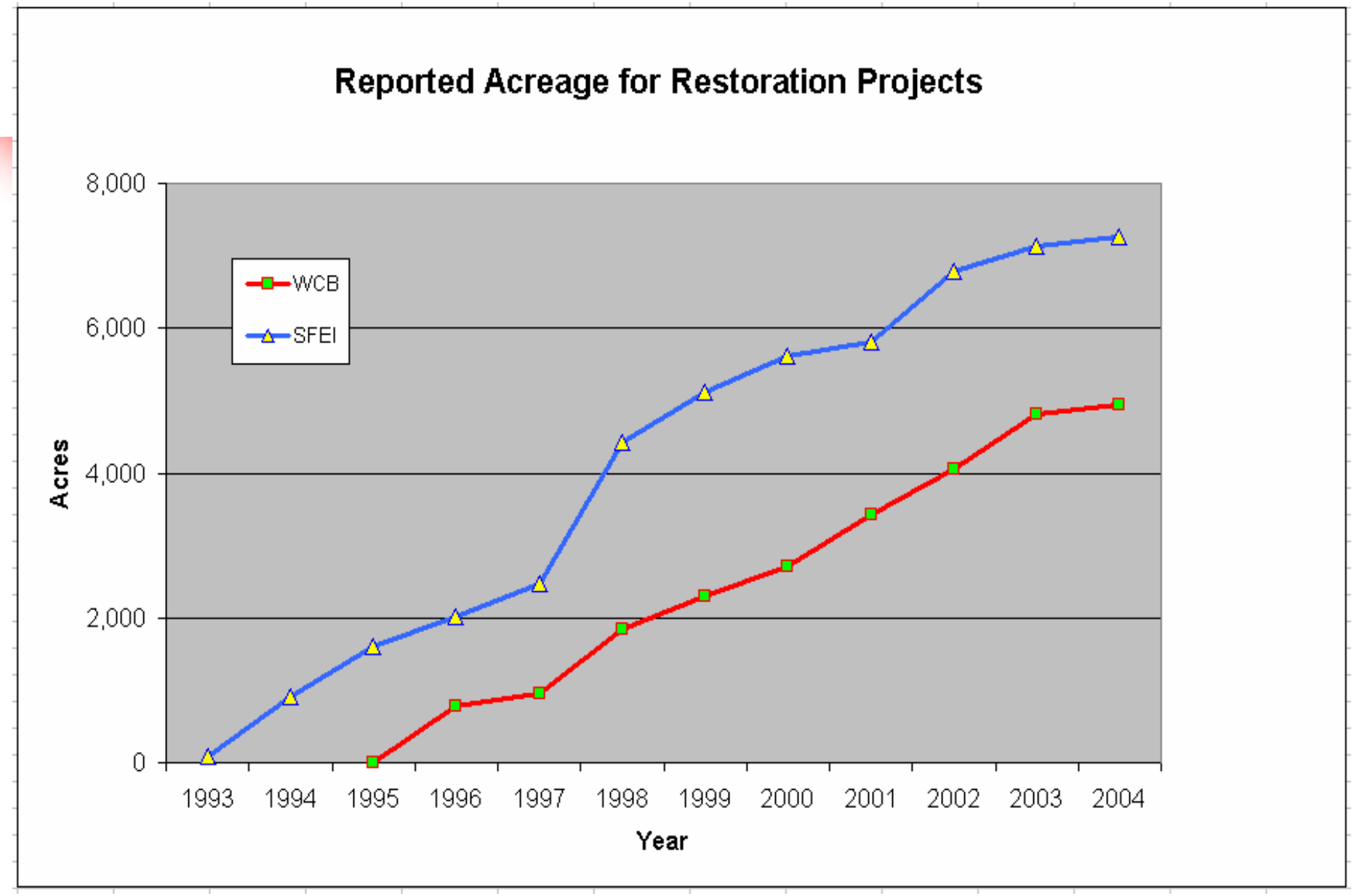
Wetlands continued

- Extent of Implementation
  - **Restoration Project Funding** (indicator)
  - **Number of Reported Projects** (indicator)
  - **Acres Restored** (indicator)
  - Wetlands Acreage Over Time (indicator)
  - Regional Habitat Goal Attainment (indicator)
  - Project Habitat Goals Attainment (indicator)


Restoration Project Funding
$45,000,000
$40,000,000
$35,000,000
$30,000,000
$25,000,000
$20,000,000
$15,000,000
$10,000,000
$5,000,000
$0
Amount
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
Year

Number of Wetland Projects 1993-2004




Reported Acreage for Restoration Projects
8,000
6,000
4,000
2,000
0
Acres
WCB
SFEI
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
Year

Wetlands: Where Will We Go Next?

- Assessment of First Year's Data
  - Additional Indicators
- Develop Consistent Reporting/Data System
- Wetland Conditions
  - California Rapid Assessment Method for Wetlands – under development
- National Wetlands Inventory
  - Underway to Complete

California NPS Program Related Activities

- Identified NPS Monitoring Objectives
- Established CA NPS Tracking & Monitoring Council
- Committed $500k/yr for Monitoring (Section 319)
  - Improve Statewide Assessment/Address NPS Objectives
    - Probabilistic Bio-Assessment
- Improving Project Level Monitoring
- Technical Assistance Contract w/TetraTech

Conclusions

- Start Small
  - Target Selected MMs/Geographic Areas
- Assess/Mine Existing Data
- Produce Public Reports
  - Biennial Report 2005
- Integrate Monitoring & Tracking
- On-Going Process/Adaptive Mgmt.