

Bay-Delta: Pelagic Organism Decline

July 17, 2007

Informational Update To State
Water Resources Control Board

What We Know

- Summary of decline
- Three factors
- Critical year for smelt
- Actions proposed by parties
- State Water Board actions taken in response to decline

Summary Of Actions Proposed By Various Parties

- Do nothing more
- Flow manipulations
- Address toxicity
- Fish screens
- Smelt refuge

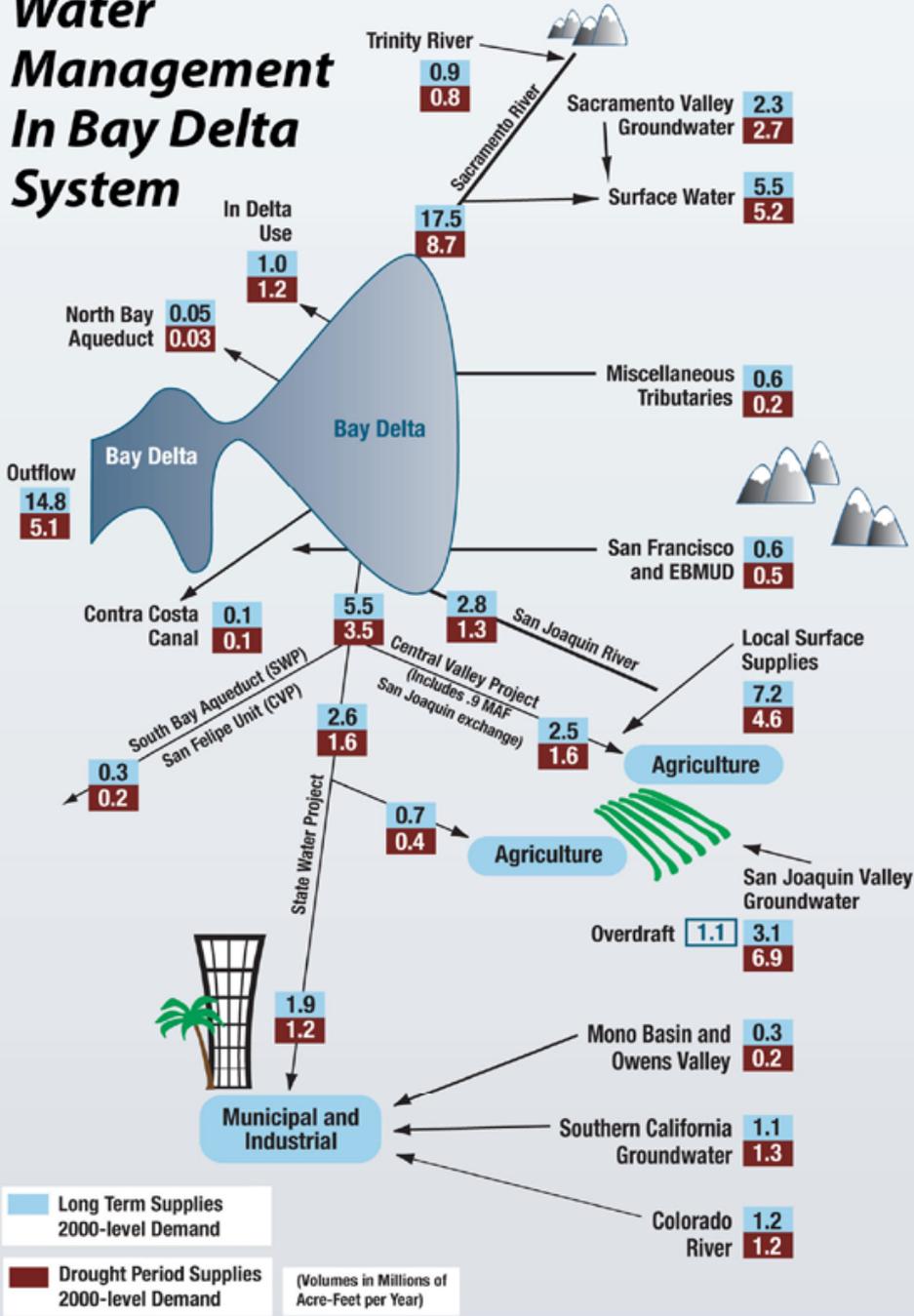
What We Don't Know

- Cause and effect
- Delta smelt response to past or future actions

What We Think We Know

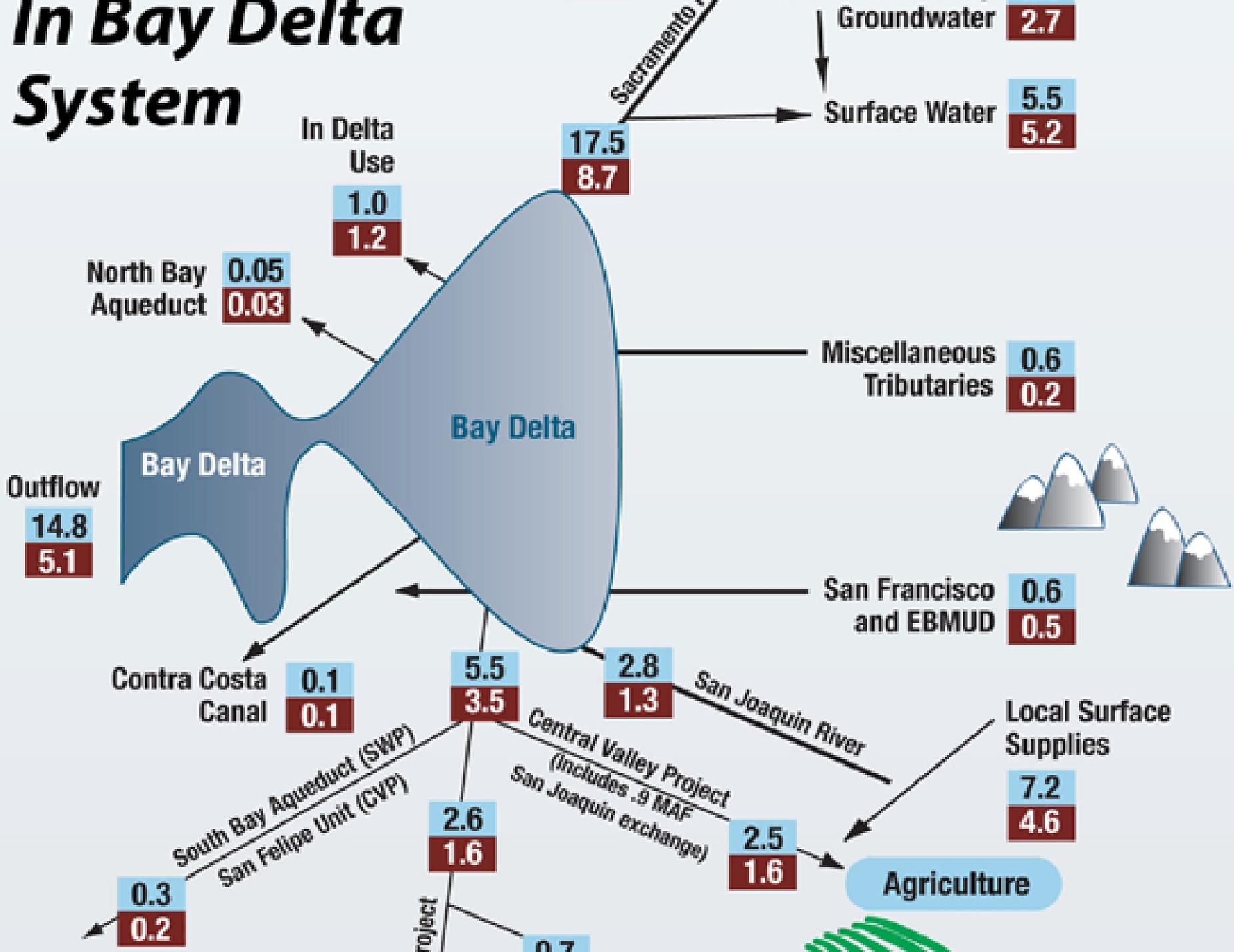
- No apparent *major* link to toxicity
- Decline has accompanied increases and changes in timing of project diversions
- Existing invasive species are a key factor
- Major flow paths

Water Management In Bay Delta System

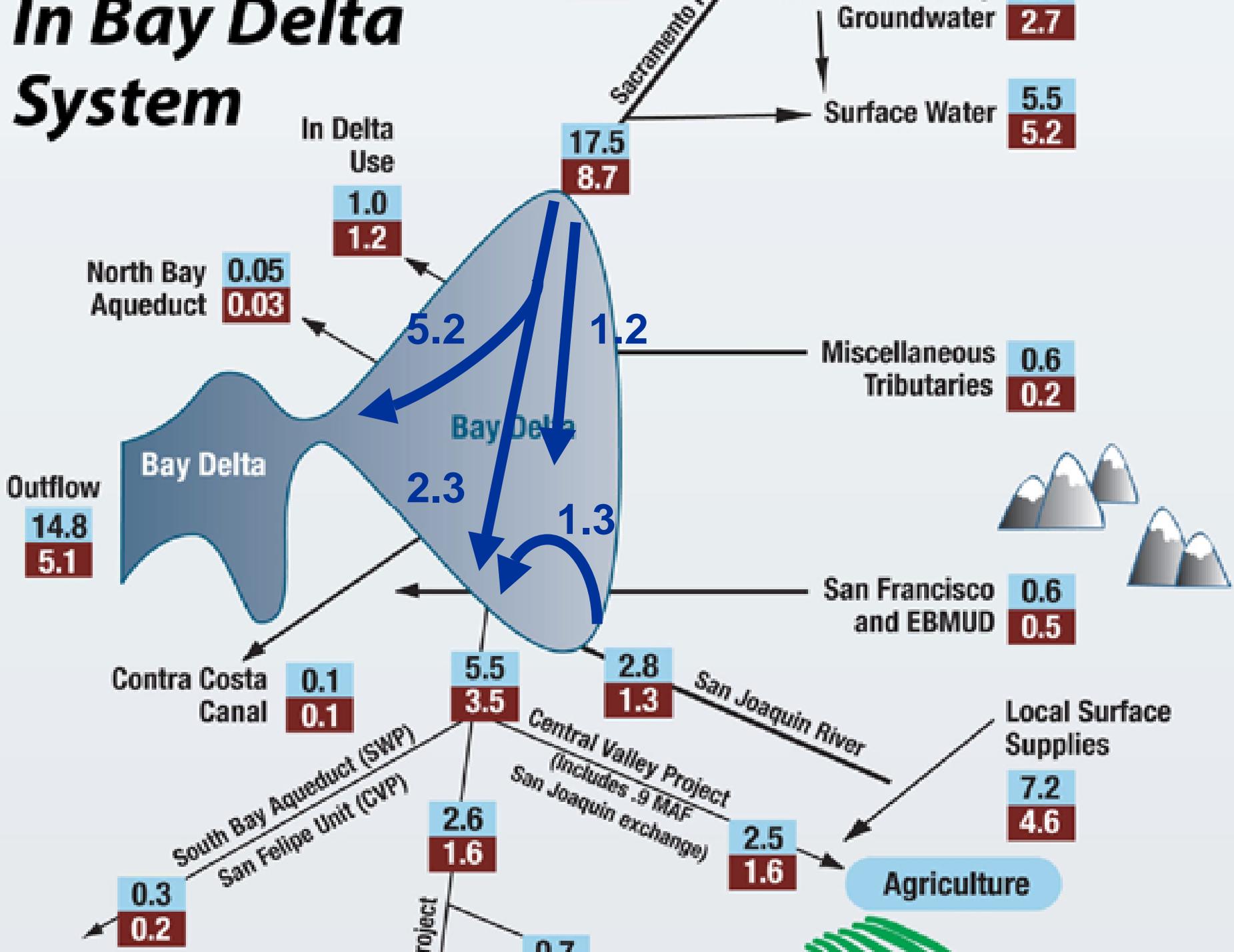


Resources Agency October 2005 Delta Smelt Action Plan

In Bay Delta System



In Bay Delta System



State Water Board Actions Past And On-going

- Pesticide control programs (TMDLs)
- Limits on point source discharges
- Bay-Delta water quality control planning

Past And On-going Actions Pesticide Control Programs (TMDLs)

- Sacramento River, San Joaquin River and Delta TMDLs
- Irrigated Lands Program
- Protect aquatic life from pesticide runoff
- On-going monitoring to identify problem areas

Past And On-going Actions Limits On Point Source Discharges

- More stringent standards over last decade
- Consider toxicity, dissolved oxygen, endangered species
- Major upgrades: tertiary filtration, nitrification
- WWTPs: Lodi, Stockton, Manteca, Tracy, Mountain House

Past And On-going Actions

Bay-Delta Water Quality Control Planning

- Updated Water Quality Control Plan:
 - Adopted December 2006
 - OAL approval July 2007
- Emerging Issues: POD, climate change, salinity, San Joaquin River flows

State Water Board Actions

Current

- Rapid response to and evaluation of pesticide toxicity and salmon mortality
- Immediate response and approval of a temporary urgency change petition
- Delta smelt refuge
- Letter to Delta water right holders

Current Actions

Evaluation Of Pesticide Toxicity And Salmon Mortality

- Pesticide toxicity:
 - Review UCD samples
 - POD contaminants work team
 - Synthesis of many programs
 - widespread water column toxicity from pyrethroids unlikely

Current Actions

Temporary Urgency Change Petition

- June 8 Merced Irrigation District request
- Provide additional San Joaquin River flow:
 - 15,000 acre-feet at 850 cfs
- Helped to maintain net positive flow on Old and Middle Rivers
- Approved June 8

Current Actions

Delta Smelt Refuge

- Fish Conservation and Culture Lab (FCCL) at Byron
- FCCL has 1000 wild delta smelt
- No new wild smelt can be caught
- UCD, FWS, and DWR joint refuge proposal by August 8: startup funds needed by Fall

Current Actions

Letter to Delta water right holders

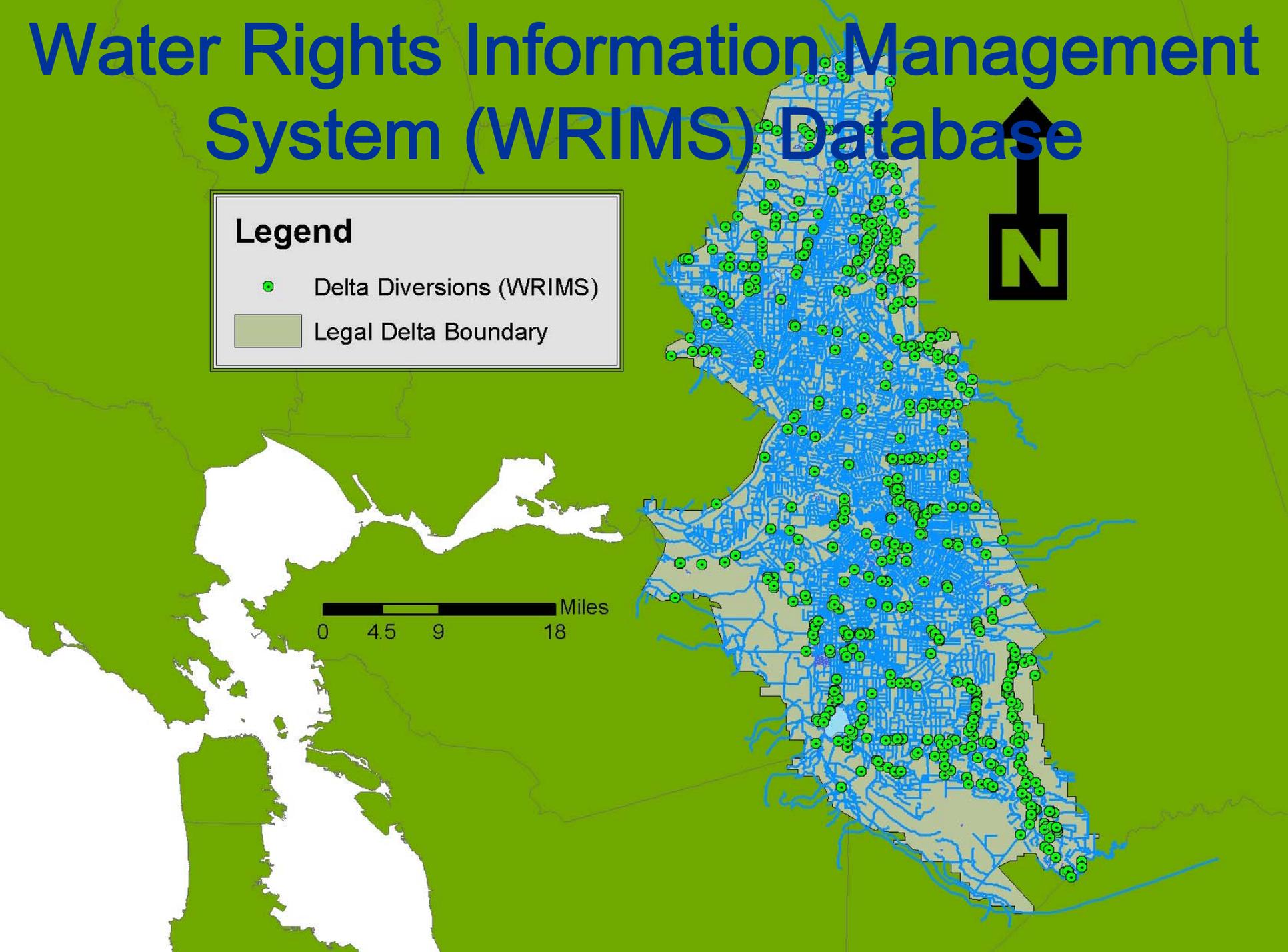
- Request for information to approximately 600 water right holders:
 - Diversion amount
 - Changes in response to DFG letter?
 - Screened?
 - Measuring device?

Water Rights Information Management System (WRIMS) Database

Legend

- Delta Diversions (WRIMS)
- Legal Delta Boundary

0 4.5 9 18 Miles



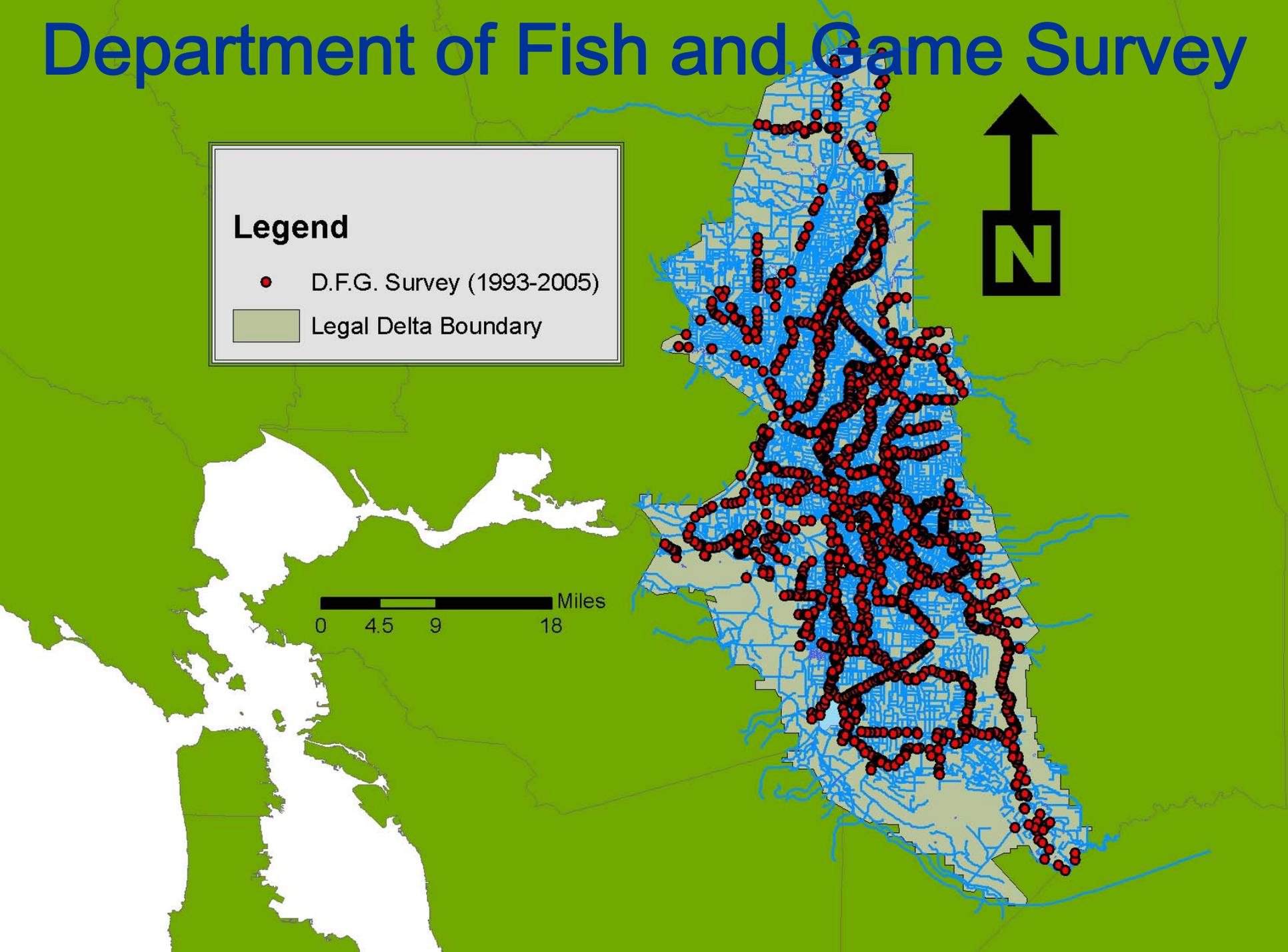
Department of Fish and Game Survey

Legend

● D.F.G. Survey (1993-2005)

■ Legal Delta Boundary

0 4.5 9 18 Miles

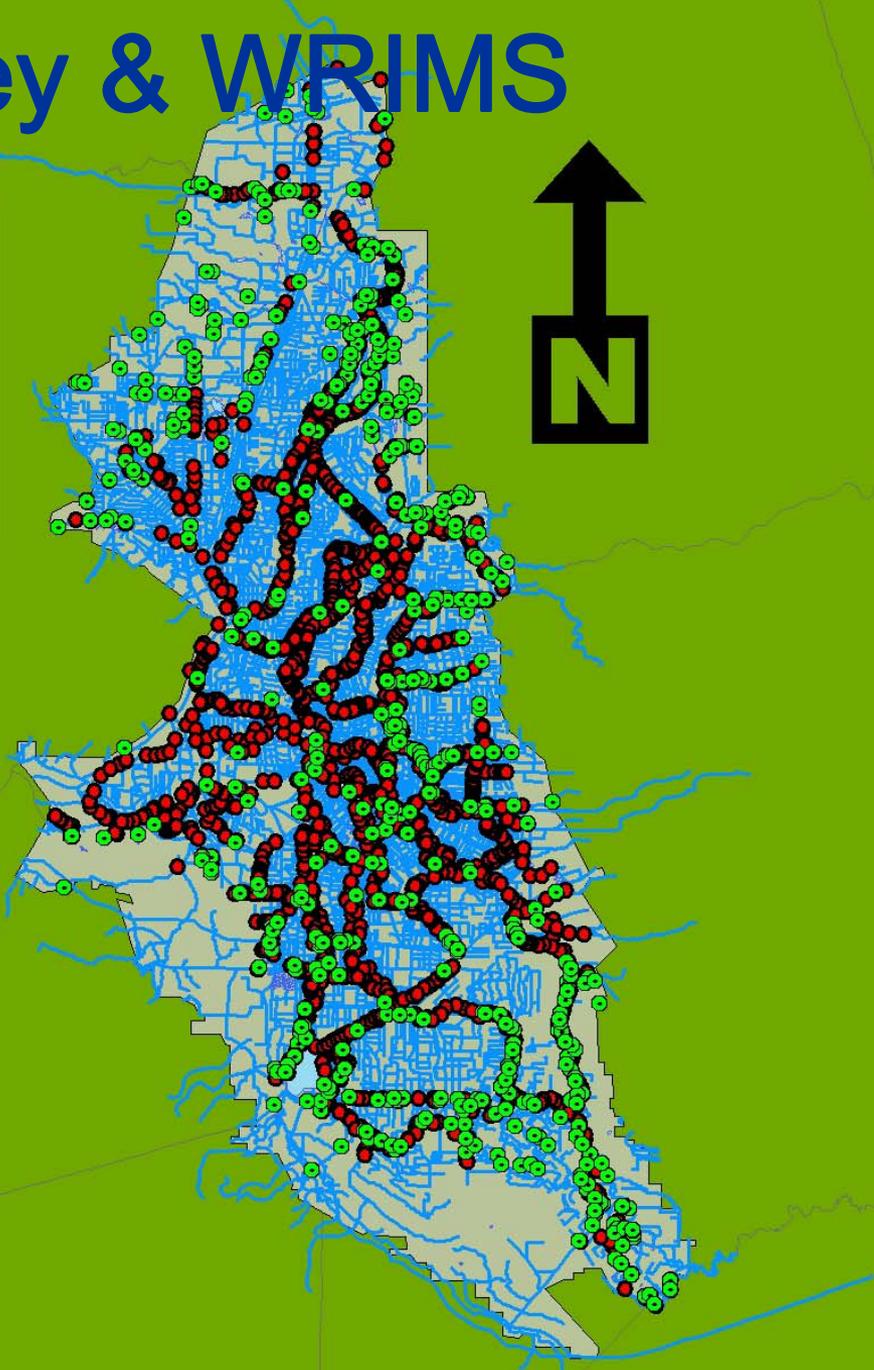


DFG Survey & WRIMS

Legend

- Delta Diversions (WRIMS)
- D.F.G. Survey (1993-2005)
- Legal Delta Boundary

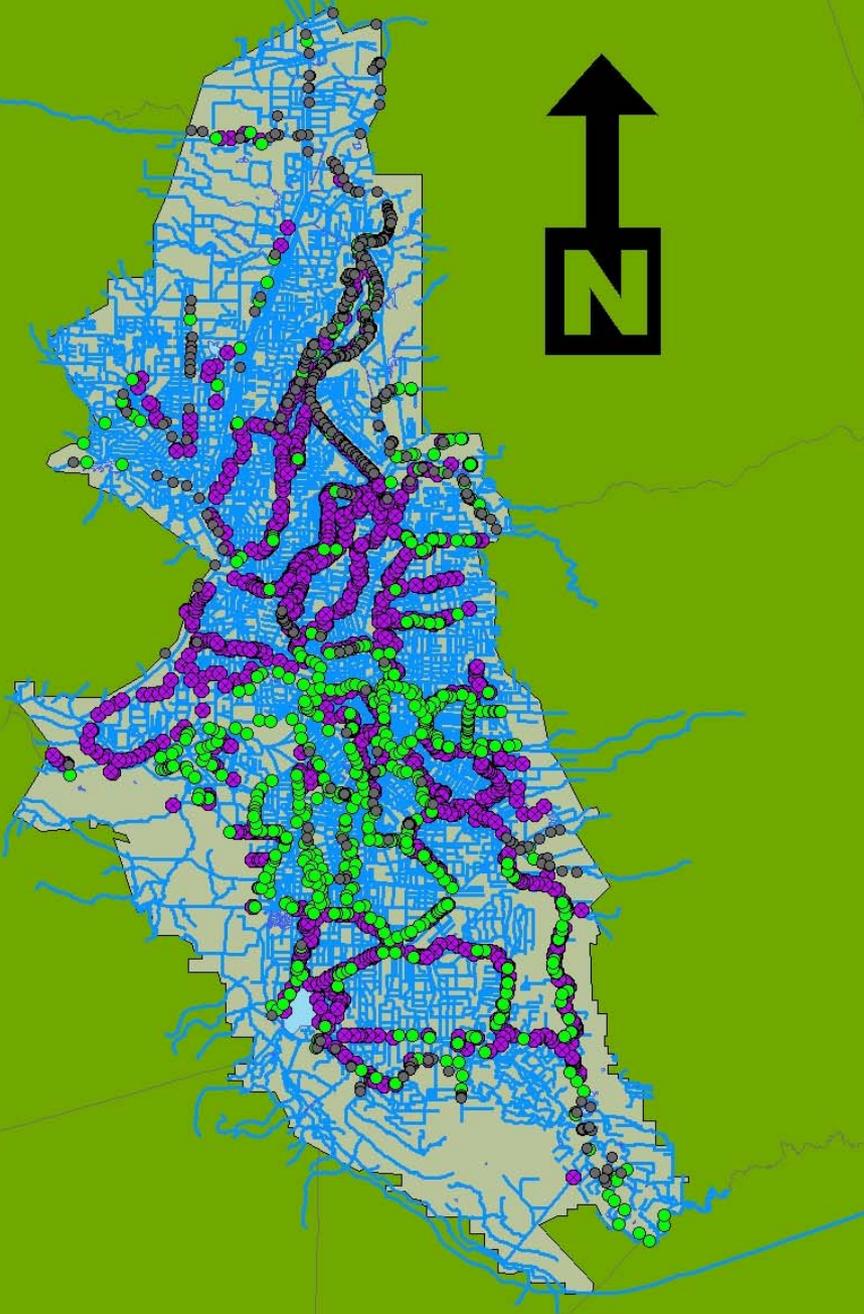
0 4.5 9 18 Miles



Ownership

Legend

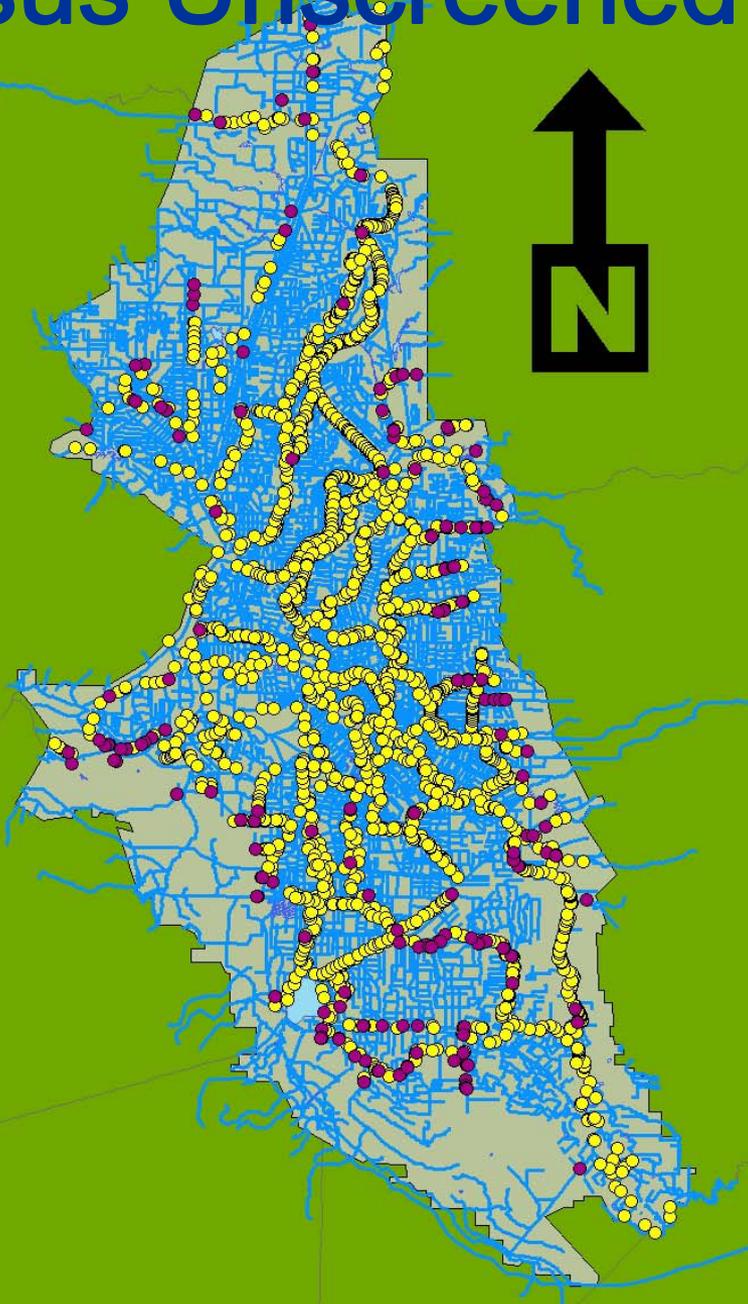
- Ownership in WRIMS
- Not in WRIMS, but Identified by DFG
- Unidentified
- Legal Delta Boundary



Screened Versus Unscreened

Legend

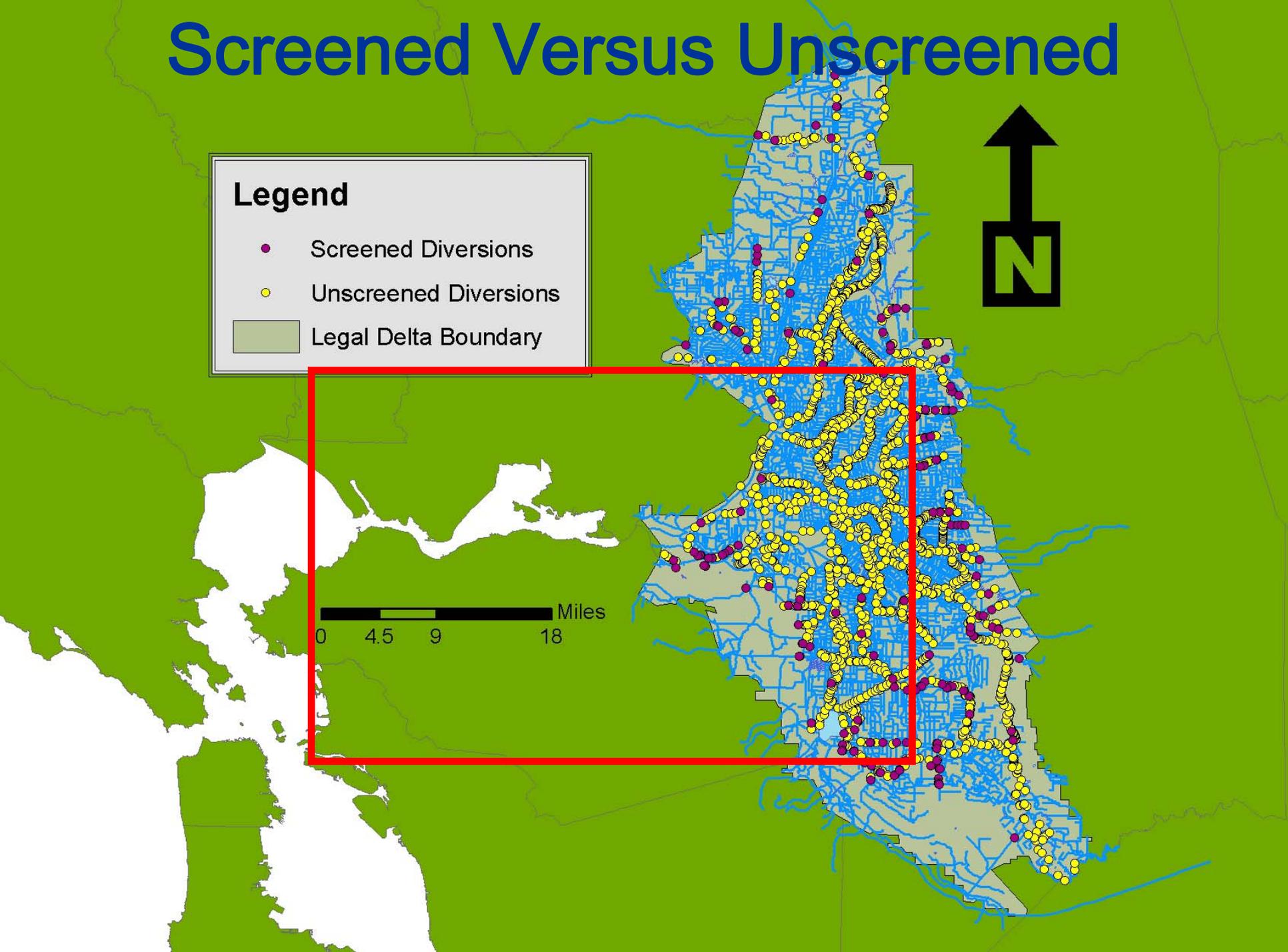
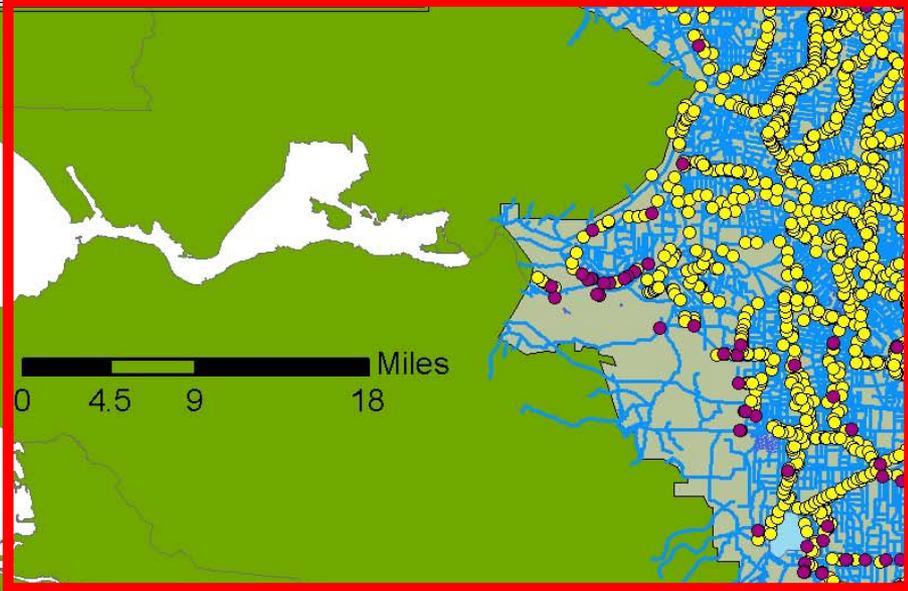
- Screened Diversions
- Unscreened Diversions
- Legal Delta Boundary



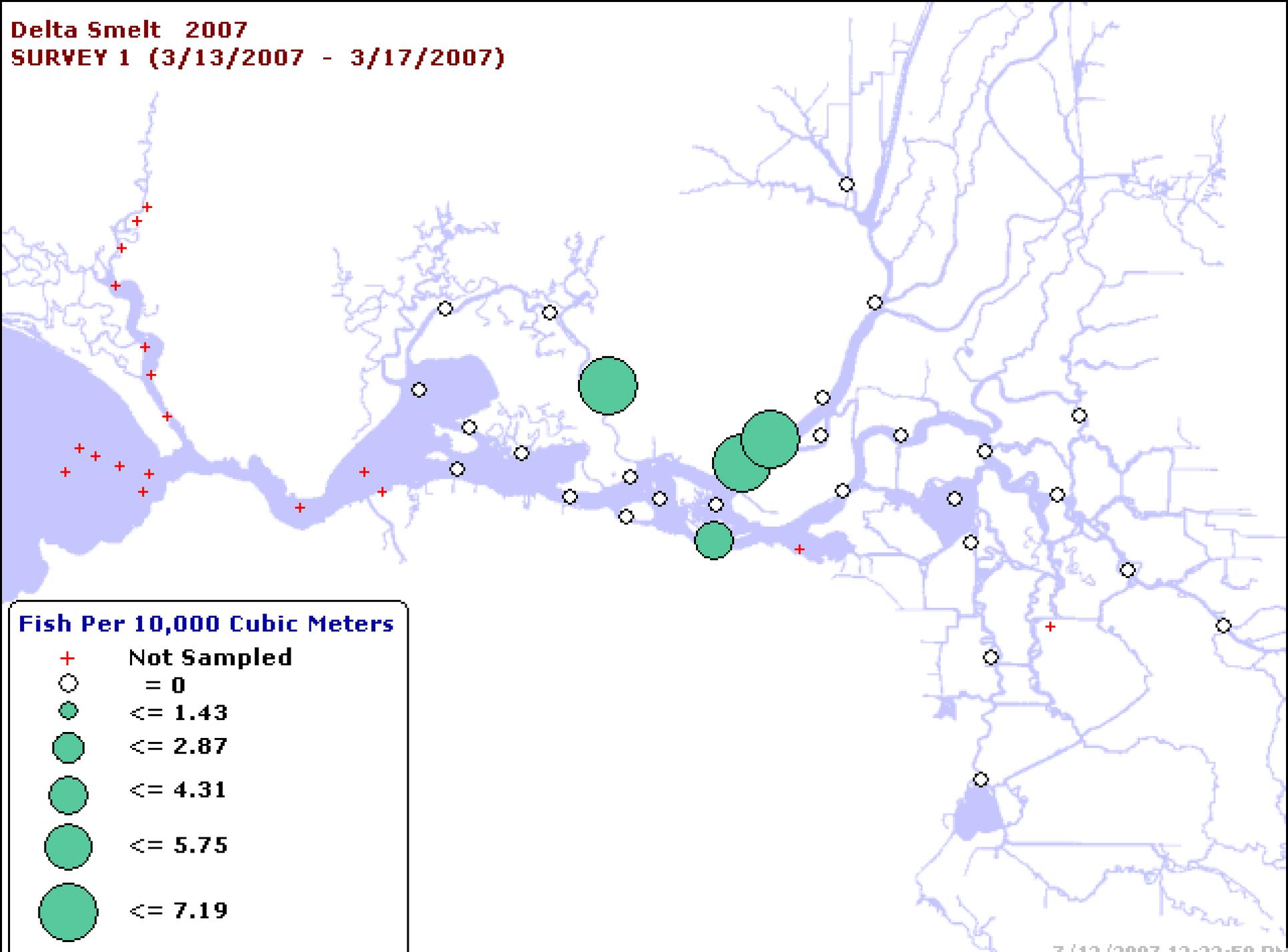
Screened Versus Unscreened

Legend

- Screened Diversions
- Unscreened Diversions
- Legal Delta Boundary



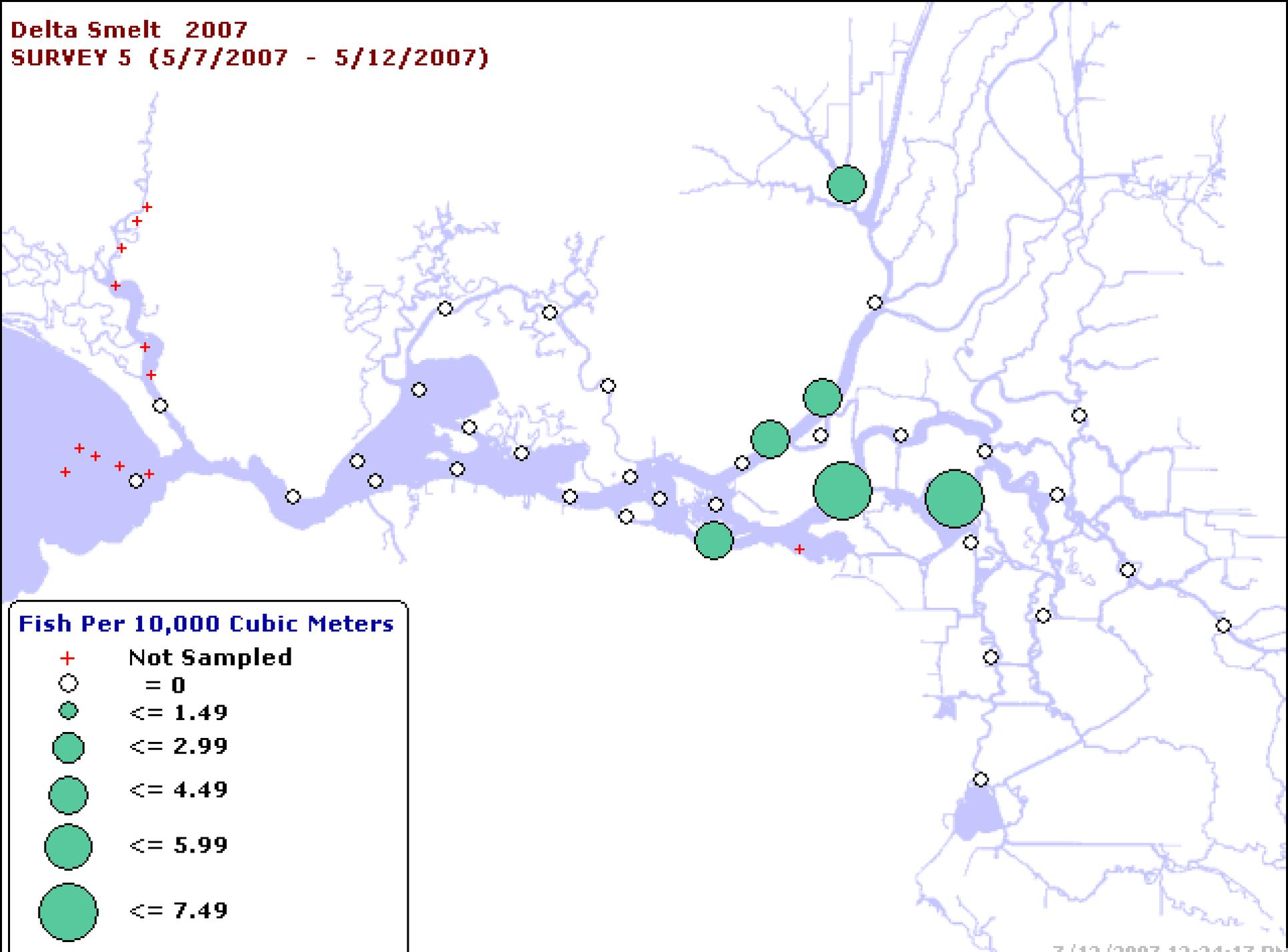
Delta Smelt 2007
SURVEY 1 (3/13/2007 - 3/17/2007)



Fish Per 10,000 Cubic Meters

- +** Not Sampled
- = 0
- ≤ 1.43
- ≤ 2.87
- ≤ 4.31
- ≤ 5.75
- ≤ 7.19

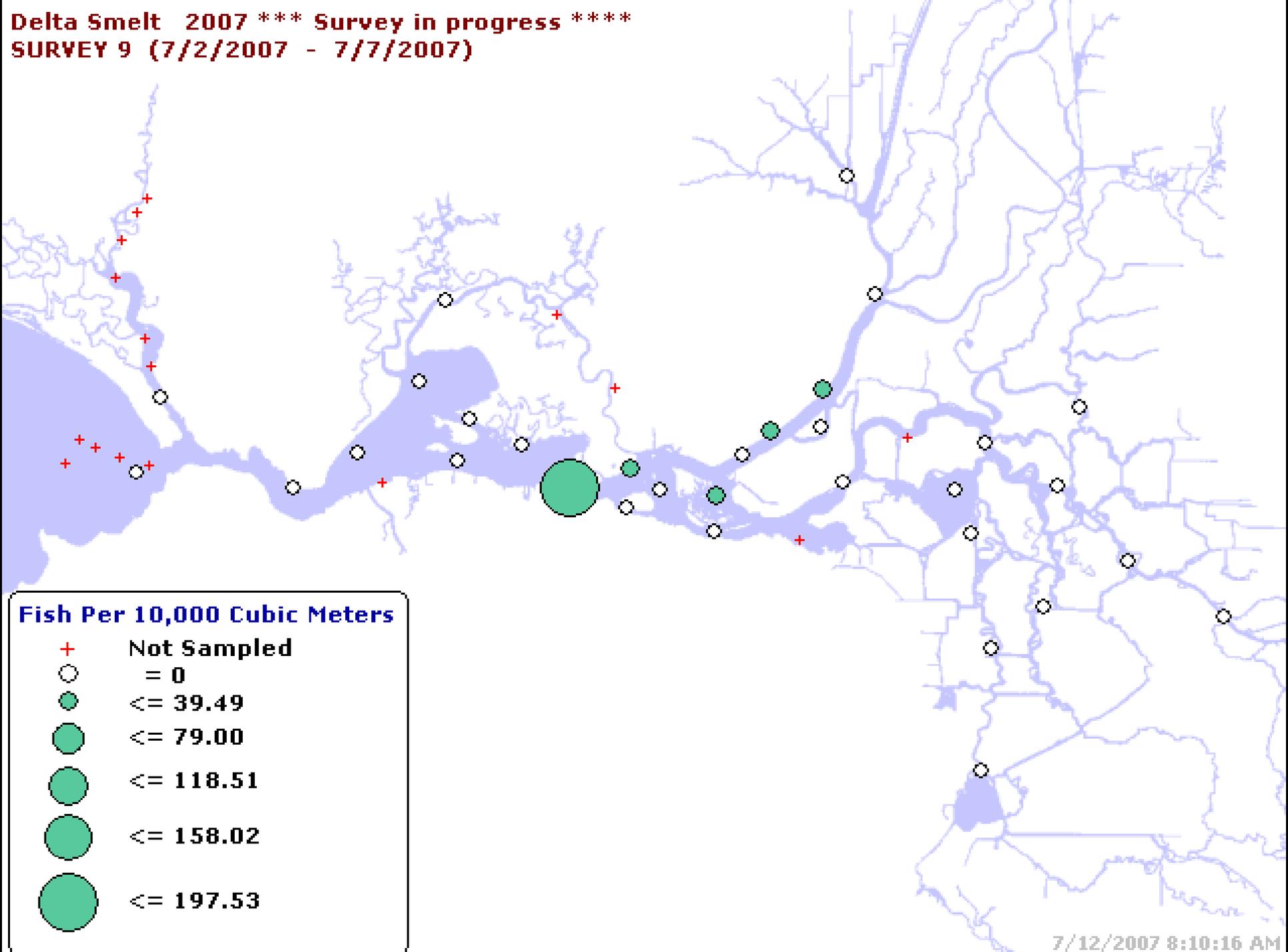
Delta Smelt 2007
SURVEY 5 (5/7/2007 - 5/12/2007)



Fish Per 10,000 Cubic Meters

- +** Not Sampled
- = 0
- ≤ 1.49
- ≤ 2.99
- ≤ 4.49
- ≤ 5.99
- ≤ 7.49

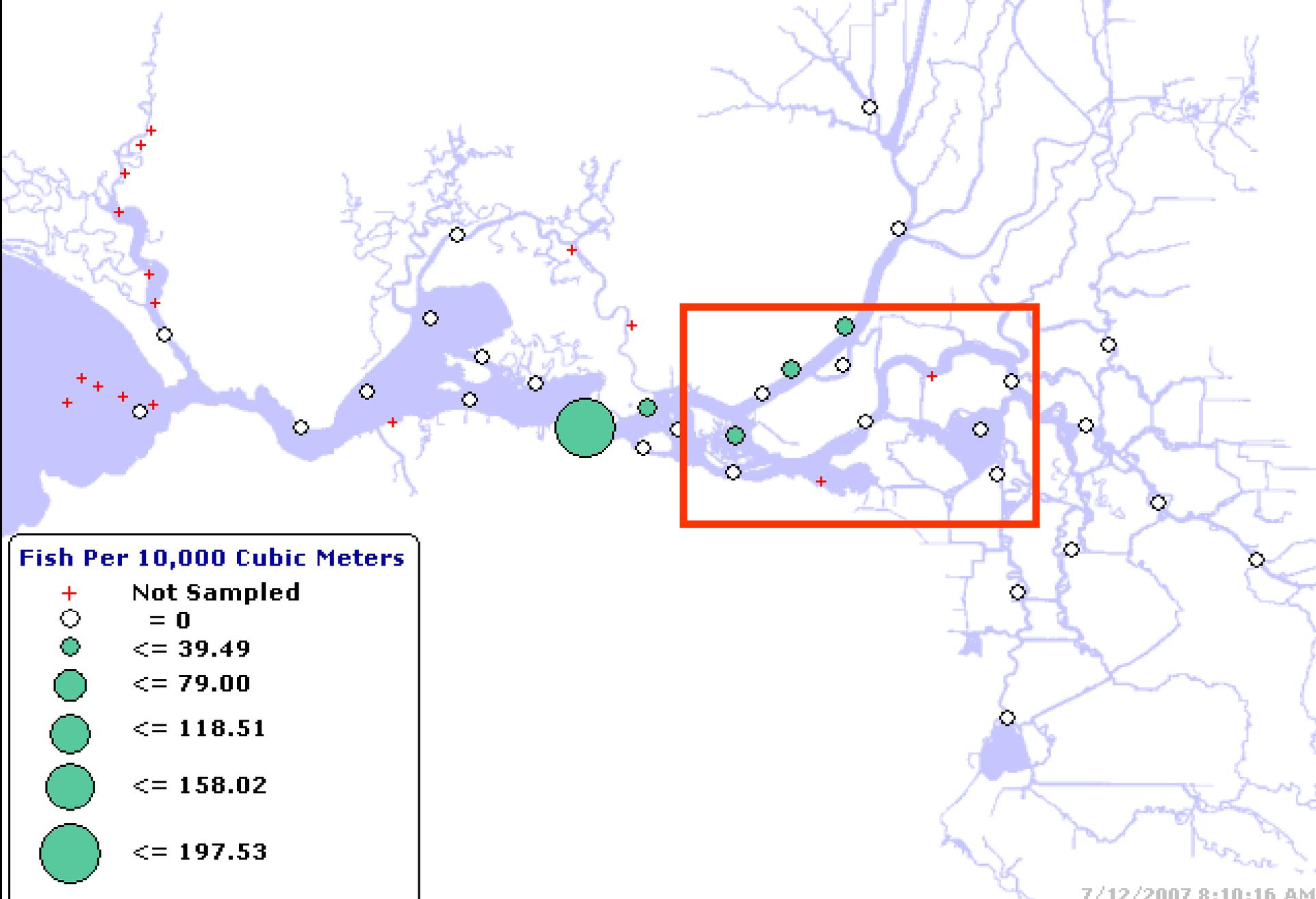
Delta Smelt 2007 * Survey in progress ******
SURVEY 9 (7/2/2007 - 7/7/2007)



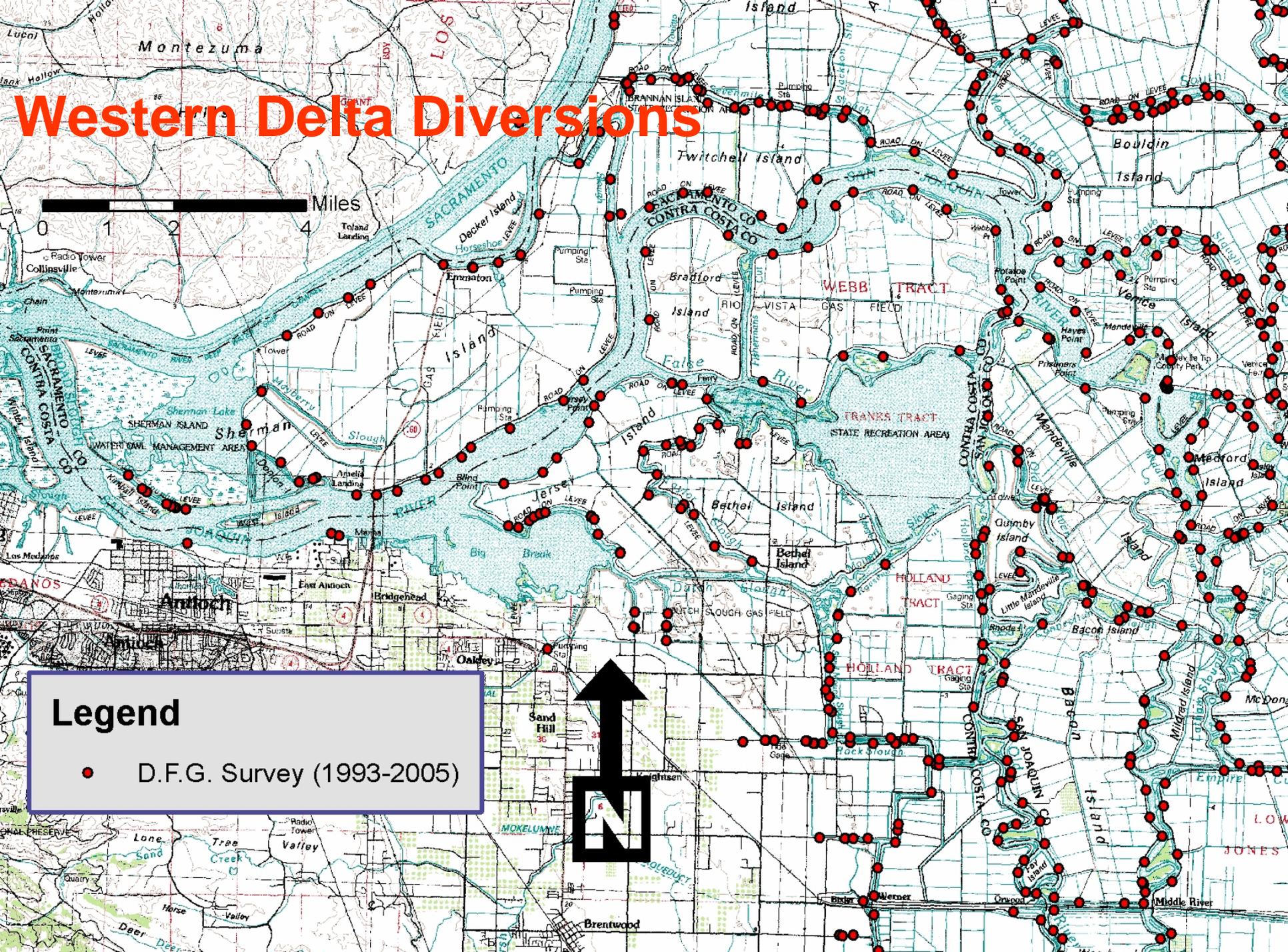
Fish Per 10,000 Cubic Meters

- +** Not Sampled
- = 0
- ≤ 39.49
- ≤ 79.00
- ≤ 118.51
- ≤ 158.02
- ≤ 197.53

Delta Smelt 2007 * Survey in progress ******
SURVEY 9 (7/2/2007 - 7/7/2007)



Western Delta Diversions

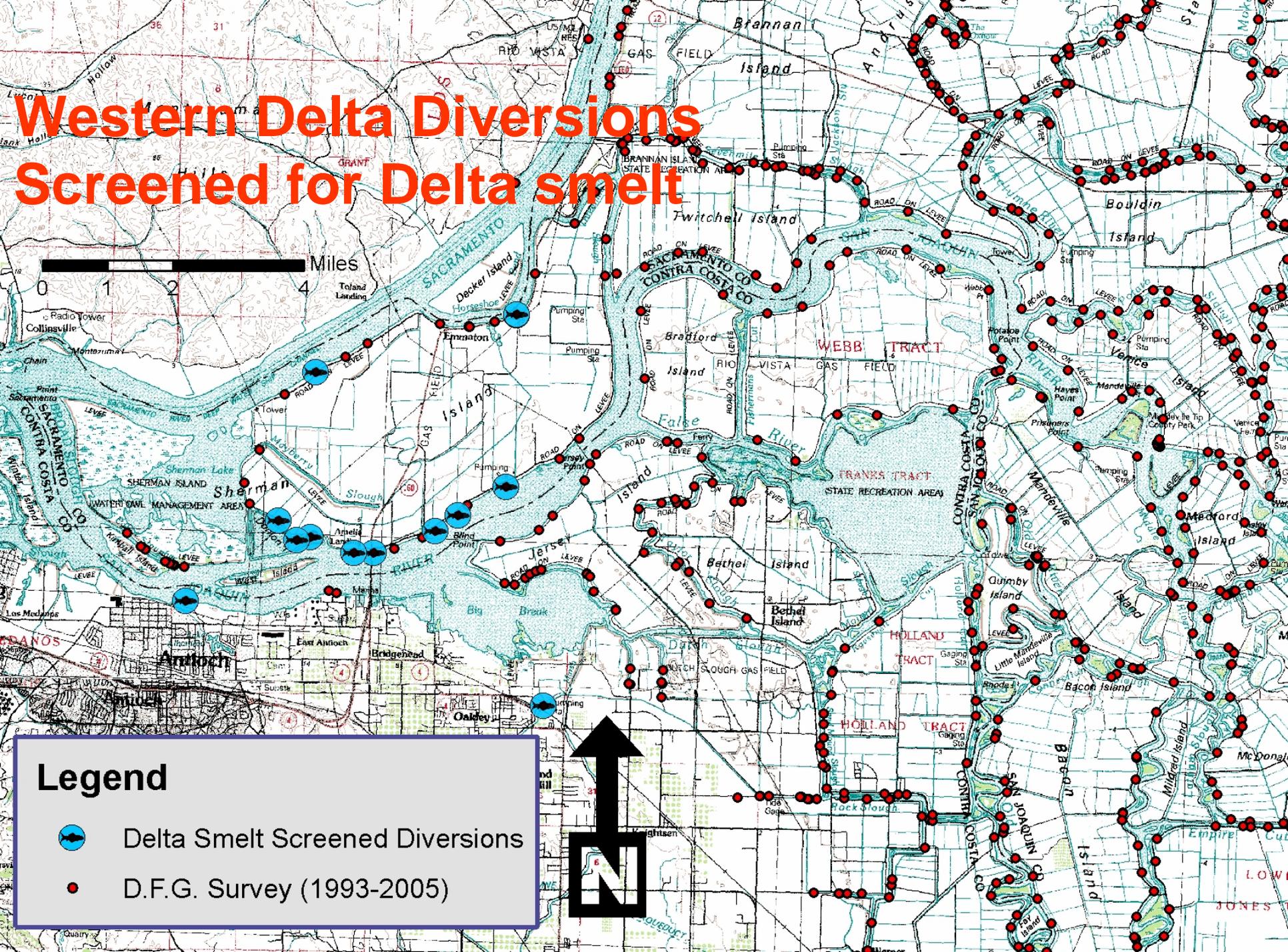


Legend

- D.F.G. Survey (1993-2005)



Western Delta Diversions Screened for Delta smelt



0 1 2 4 Miles

Legend

-  Delta Smelt Screened Diversions
-  D.F.G. Survey (1993-2005)

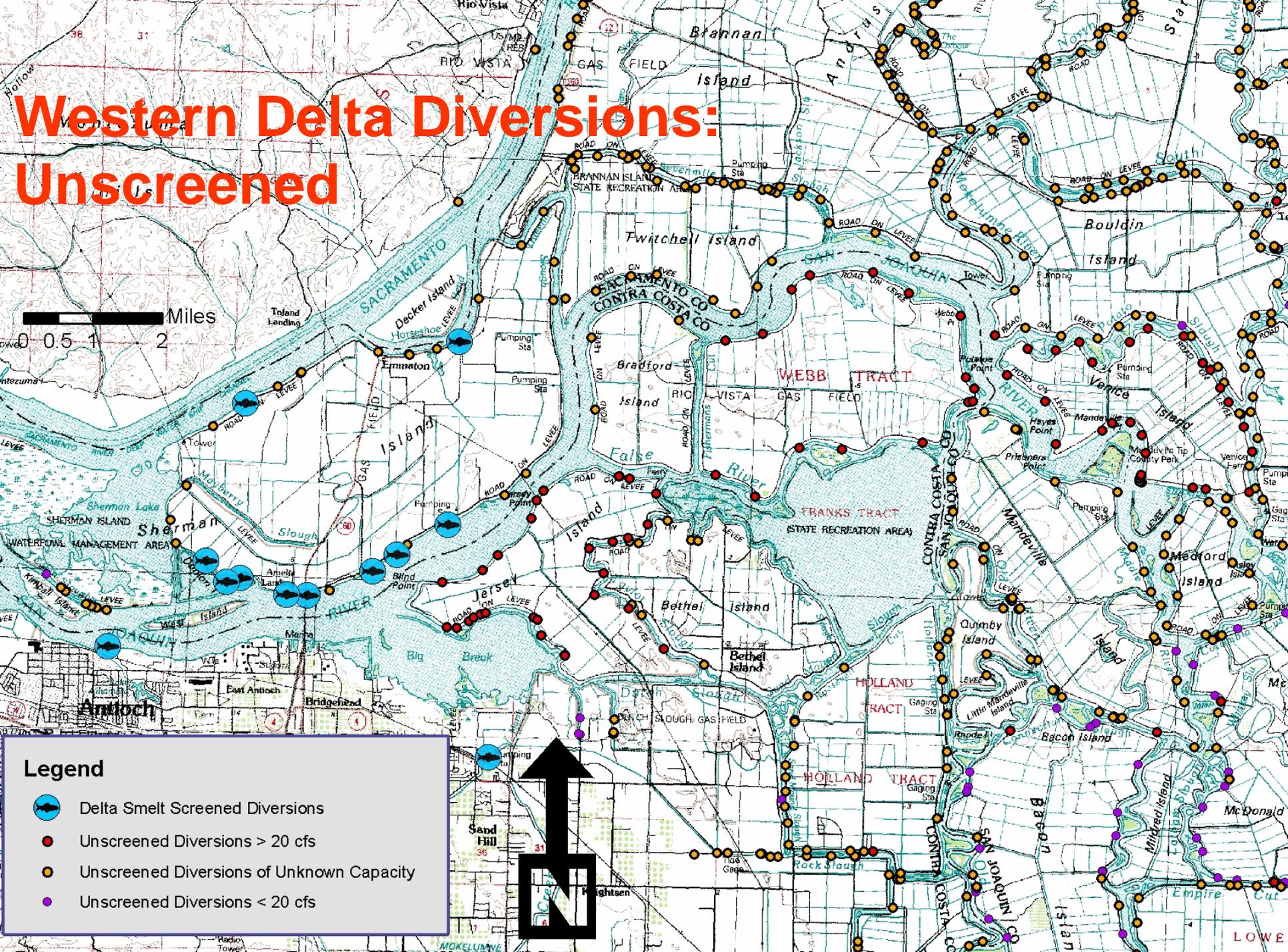


Western Delta Diversions: Unscreened



Legend

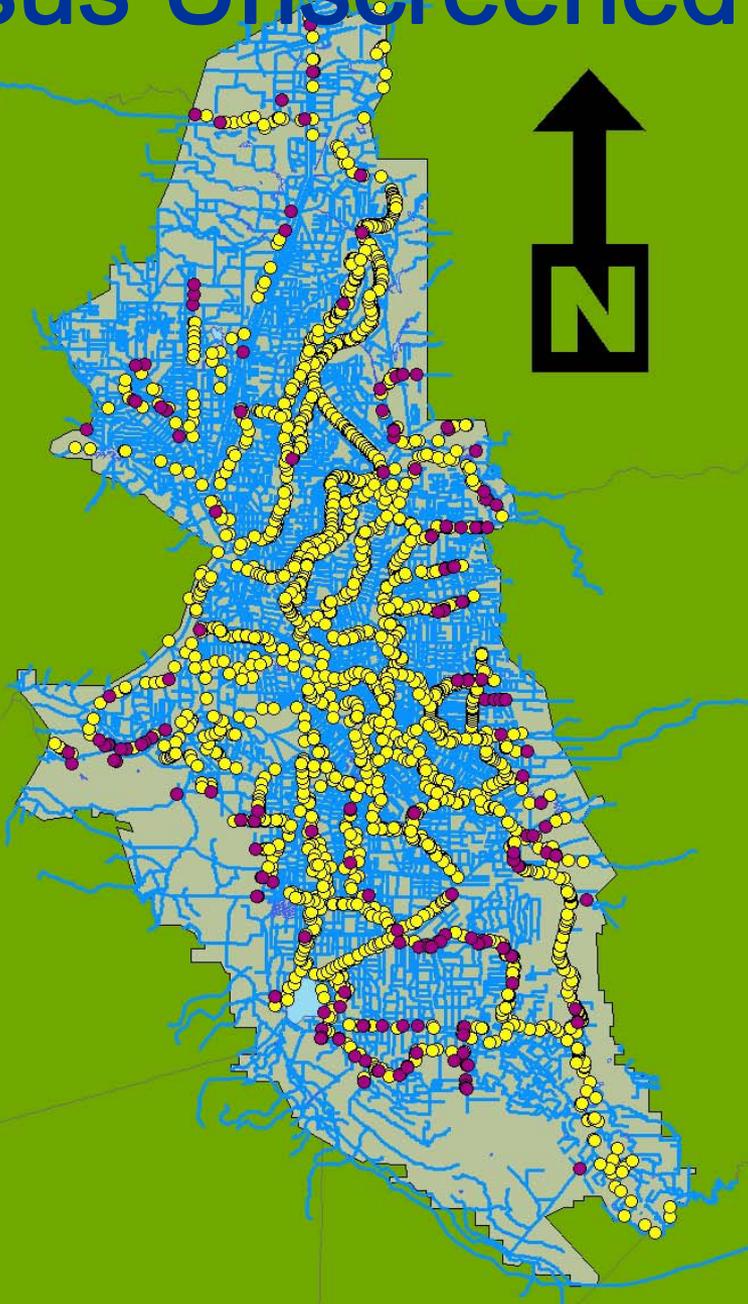
- Delta Smelt Screened Diversions
- Unscreened Diversions > 20 cfs
- Unscreened Diversions of Unknown Capacity
- Unscreened Diversions < 20 cfs



Screened Versus Unscreened

Legend

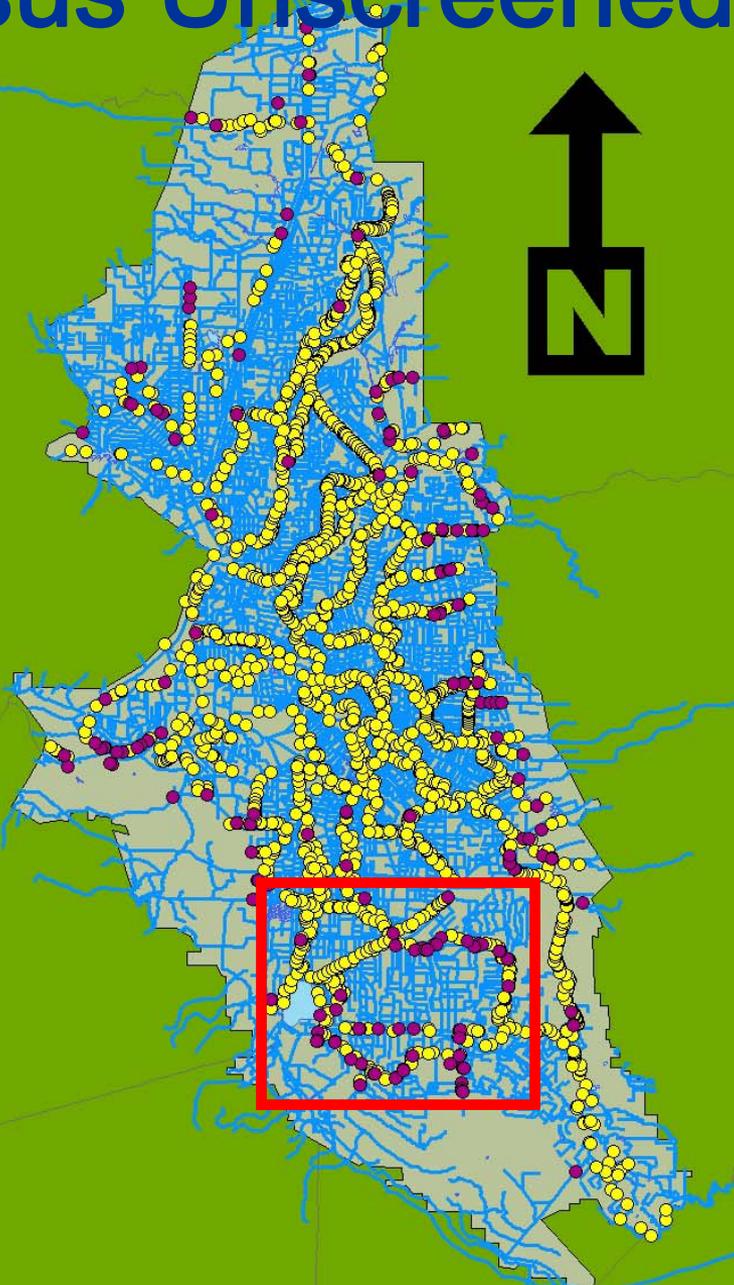
- Screened Diversions
- Unscreened Diversions
- Legal Delta Boundary



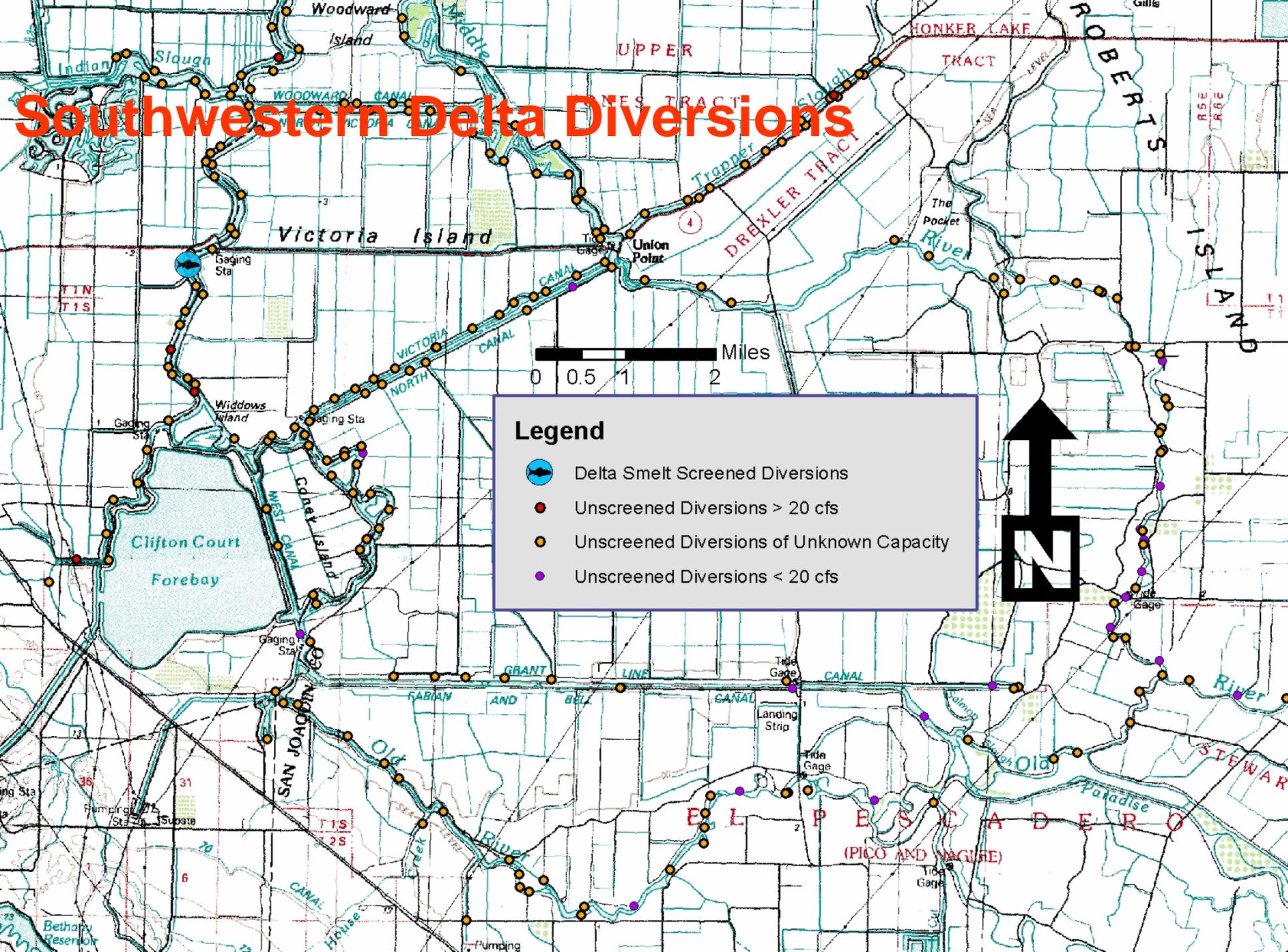
Screened Versus Unscreened

Legend

- Screened Diversions
- Unscreened Diversions
- Legal Delta Boundary



Southwestern Delta Diversions



Legend

- Delta Smelt Screened Diversions
- Unscreened Diversions > 20 cfs
- Unscreened Diversions of Unknown Capacity
- Unscreened Diversions < 20 cfs

Other Current Actions

- Experts to advise the Board: \$490,000 UC Davis Contract
- Collaboration with Regional Board: joint taskforce regarding Bay/Delta issues
- Continued tracking and oversight of other efforts
- Updating information on Delta diversions: WRIMS and DFG databases

Next Steps

- Continue synthesis of data
- Develop short and long-term actions for Board consideration