

*Other Changes for the Program
of Implementation (Issue 11)
SWRCB D-1641 Workshop
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Deltakeeper

by

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PORTER-COLOGNE WATER QUALITY CONTROL ACT

“(f) “Beneficial uses” of the waters of the state that may be protected against quality degradation include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.”

Not limited to “native fish,” “listed fish,” or “species of special concern.” Charge is “preservation and enhancement of fish, wildlife and other aquatic resources or preserves.”

Significant Areas of Concern Include

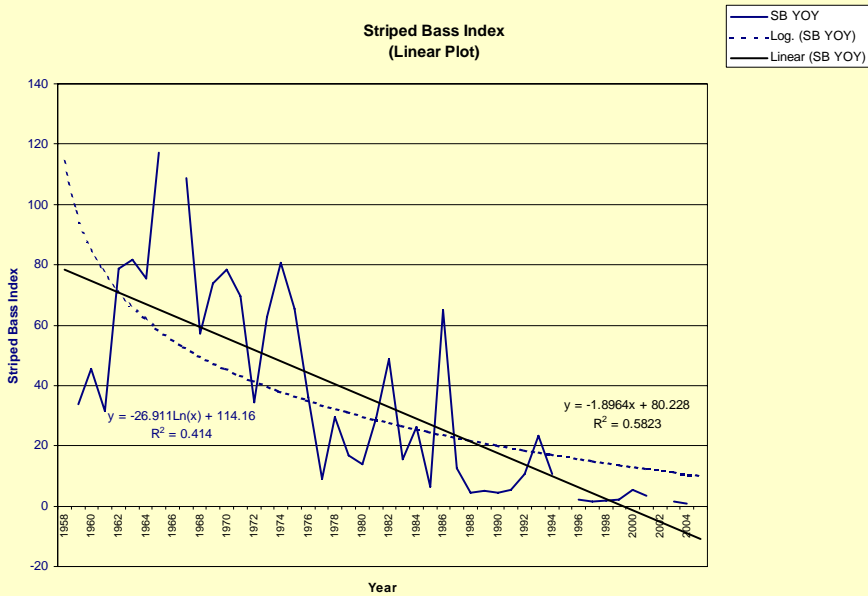
- Apparent decline in zooplankton, herbivores and piscivores in portions of the Delta,
- the lack of monitoring adequate to the task of evaluating the apparent declines, and
- analysis paralysis, leading to deferred action (while CVP-SWP exports increase).

Apparent Decline in Productivity

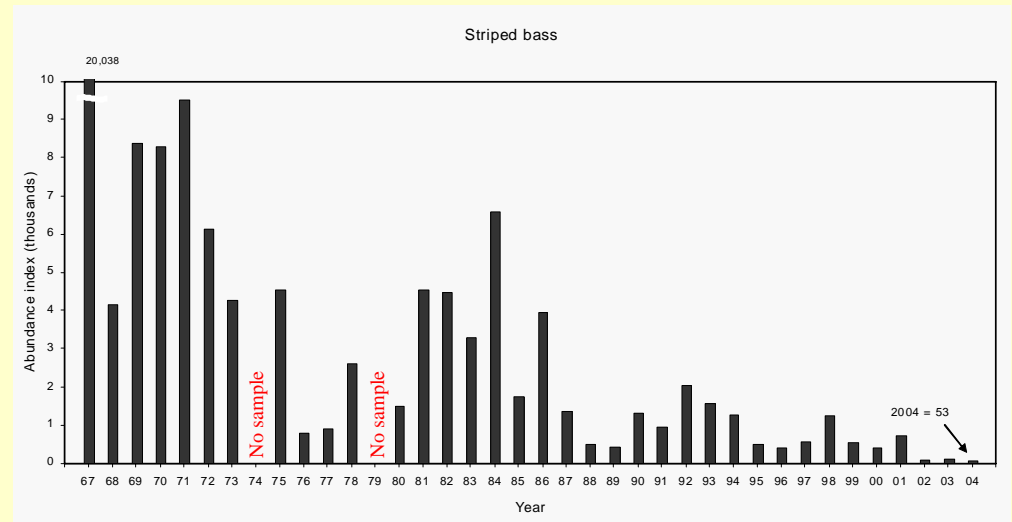
- Striped Bass Index (SBI) has been below 10 since 1996, both the 2004 SBI and the Fall Midwater Trawl (FMWT) index the lowest on record.
- Other long term indices of striped bass also show a similar trend:
 - San Francisco Bay Study Midwater Trawl (SFBS - MWT); second lowest on record
 - SFBS Otter Trawl (SFBS - OT); same

Rank of relative abundance indices for age-0 striped bass from DFG's Long Term Monitoring surveys

	TNS	FMWT	SFBS (MWT)	SFBS (OT)
2002	No index	2 nd lowest	lowest	lowest
2003	3 rd lowest	3 rd lowest	3 rd lowest	3 rd lowest
2004	lowest	lowest	2 nd lowest	2 nd lowest



Striped Bass Indices
are down at historic
lows.



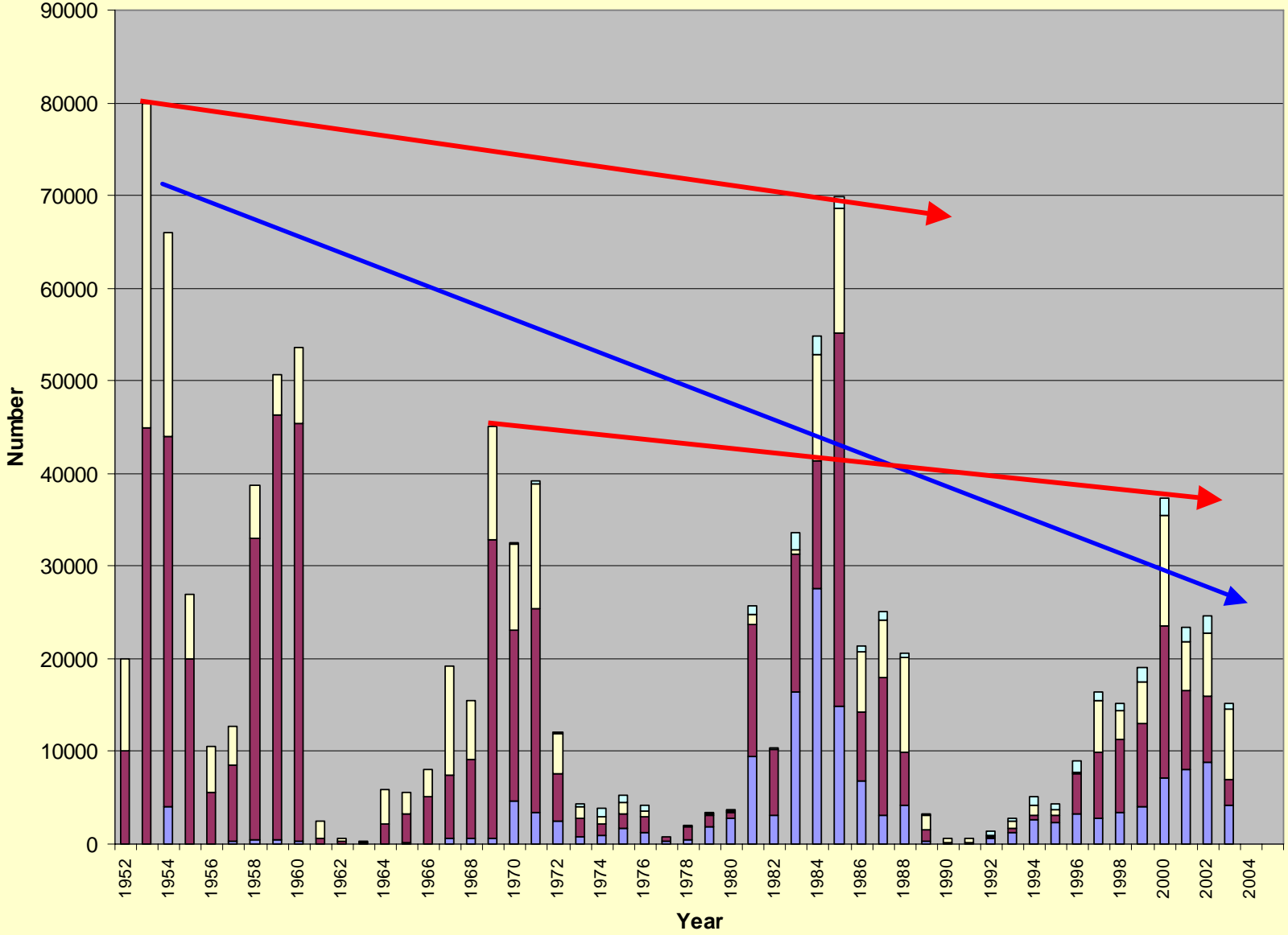
Fall Midwater Trawl (FMWT) Catch of YOY Striped Bass
CDFG Data (Figure courtesy Kelly Souza, CDFG)

Other species in decline include:

- San Joaquin River Fall Run Chinook Salmon, a steady decline?
 - Despite the cyclic pattern, both peaks, the low and the high, show declining trends.
- Salmonids are present throughout the year, making “homestream” flow necessary throughout the year.

San Joaquin River Fall Run Chinook Salmon Escapement (Merced, Tuolumne, and Stanislaus River, and MRFF)

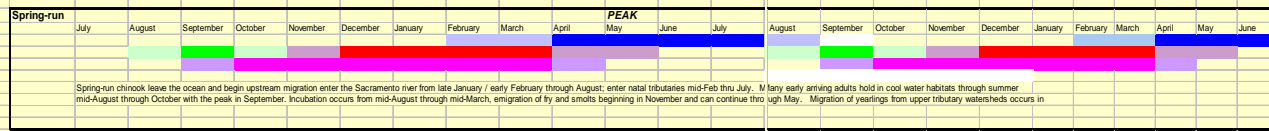
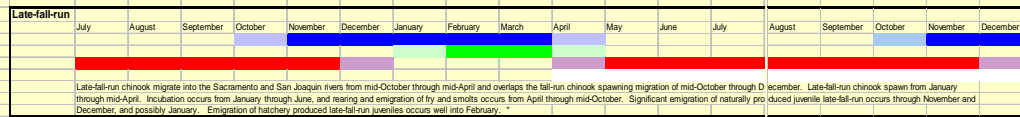
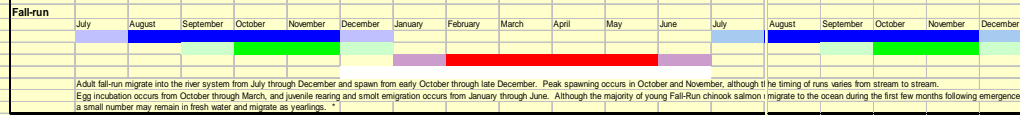
- MRFF
- Stan
- Tuol
- Merced



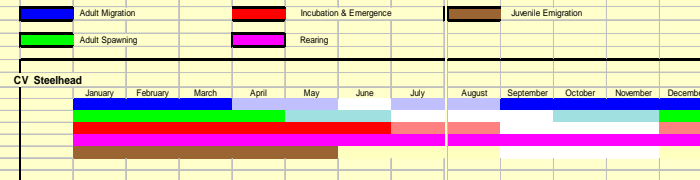
Central Valley Chinook Salmon and Steelhead

Sacramento - San Joaquin River Systems

■ = Adult Migration ■ = Young of the Year Emigration
■ = Adult Spawning ■ = Yearling emigration



* Information from: Restoring Central Valley Streams: A PLAN FOR ACTION, Department of Fish and Game, 129 pp., December 1993
 ** Information from: Guidelines for Recommended Time Periods for In-Channel Activities for Winter-run Chinook Salmon
 *** National Marine Fisheries Service proposed Recovery Plan for The Sacramento River Winter-run Chinook Salmon, August 1997
 **** Report to The Fish and Game Commission: A Status Review of The Spring Run Chinook Salmon (*Oncorhynchus tshawytscha*) In the Sacramento River Drainage, Candidate Species Status Report 98-01, June 1998, CDFG



McEwan, D.R. Central Valley steelhead. In Proceedings of the Central Valley Salmonid Symposium, 1997.
 R. Brown, ed., Calif. Dept. of Fish and Game Fish Bull. accepted for publication.

Where is the period that does not concern us, as related to the salmonid flow needs?

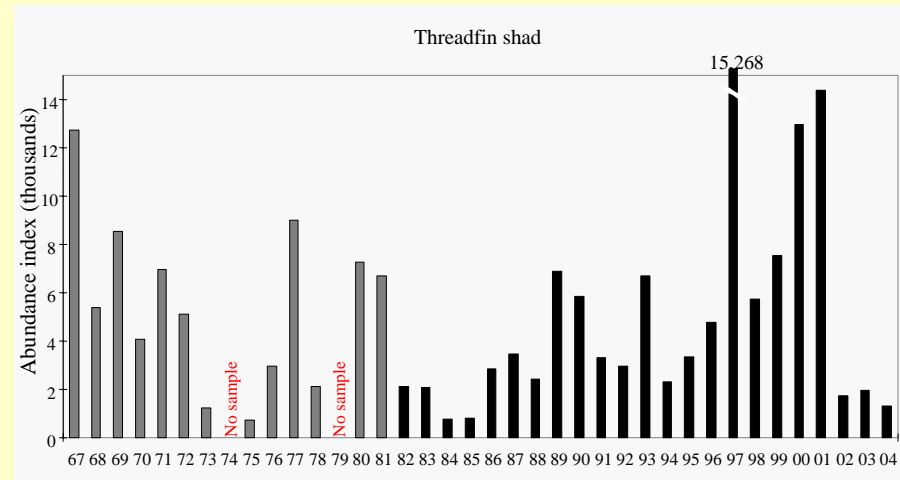
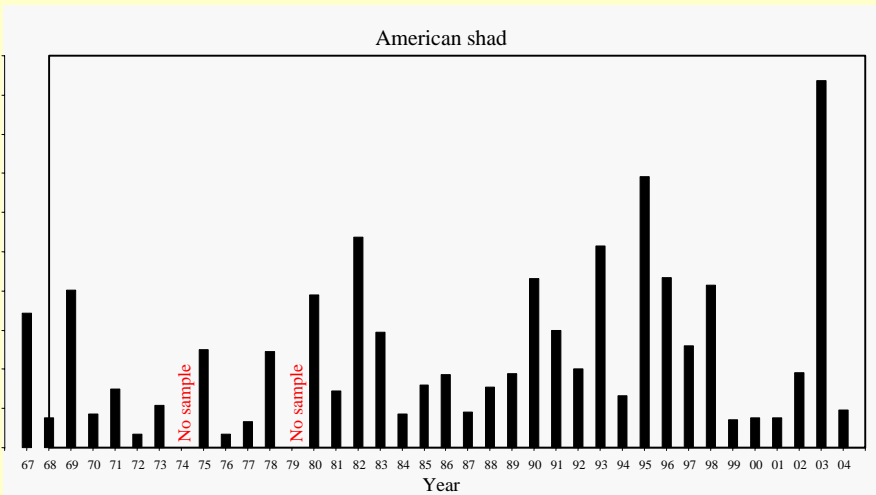
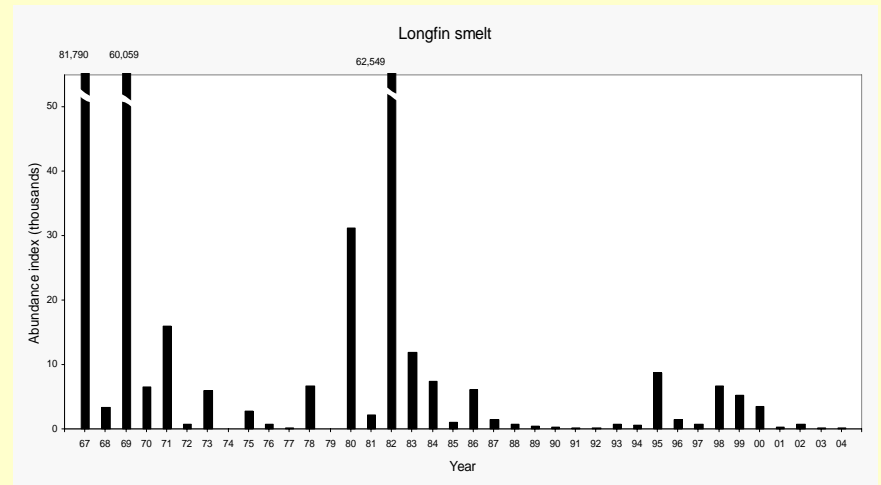
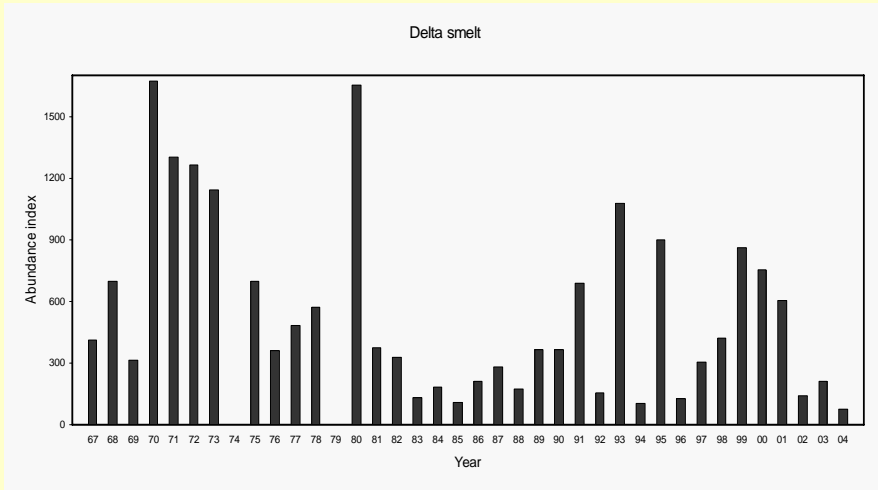
When can we safely recirculate Sacramento River water in the San Joaquin River system, without disrupting either:

- a) Juvenile outmigrant imprinting, and/or
- b) adult migration cues?

Other species, continued

- Delta Smelt, that showed the lowest abundance on record in the 2004 FMWT.
 - About five years ago we were seriously considering a petition to reduce their status from Endangered to Threatened.
 - The last three years have been of serious concern.

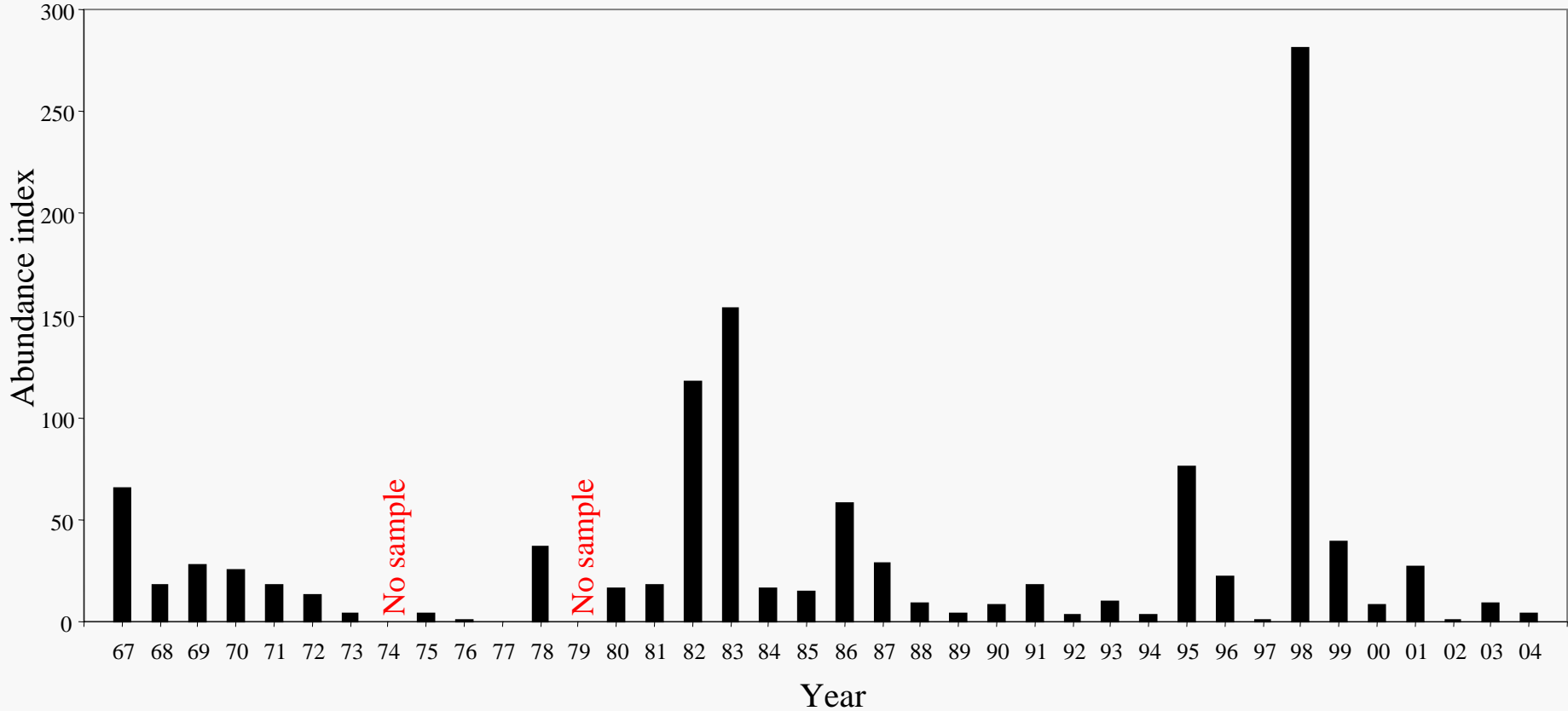
- Longfin Smelt in FMWT, declining trend since 1995.
- American Shad in FMWT, down from 2002-2003.
- Threadfin Shad in FMWT, down in 2002-2003-2004.
- Splittail in FMWT, declining trend since 1998.



Fall Midwater Trawl Survey Results

(CDFG Data, courtesy Kelly Souza)

Splittail (all ages combined)

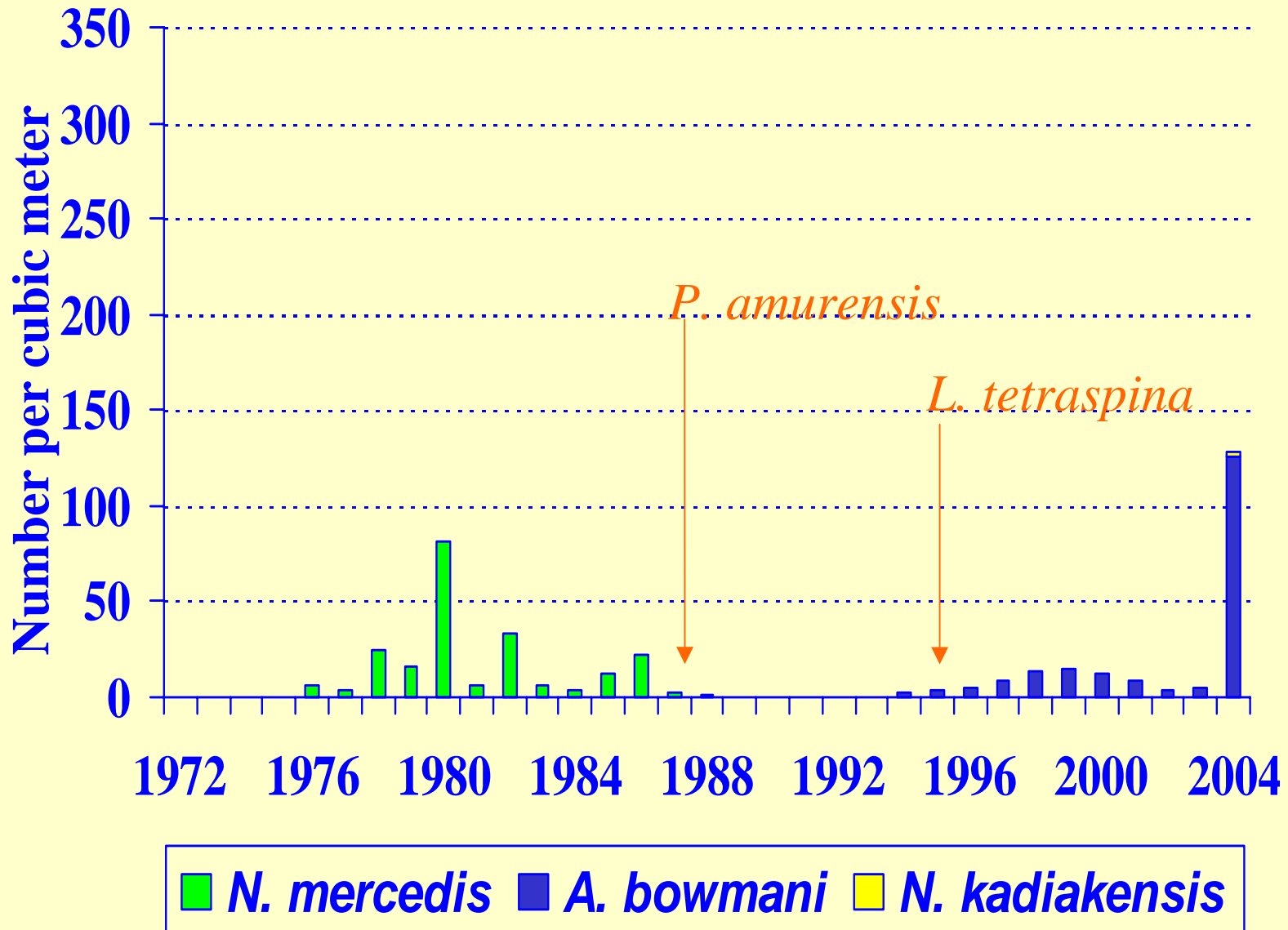


Fall Midwater Trawl (FMWT) Catch of Splittail
CDFG Data (Figure courtesy Kelly Souza, CDFG)

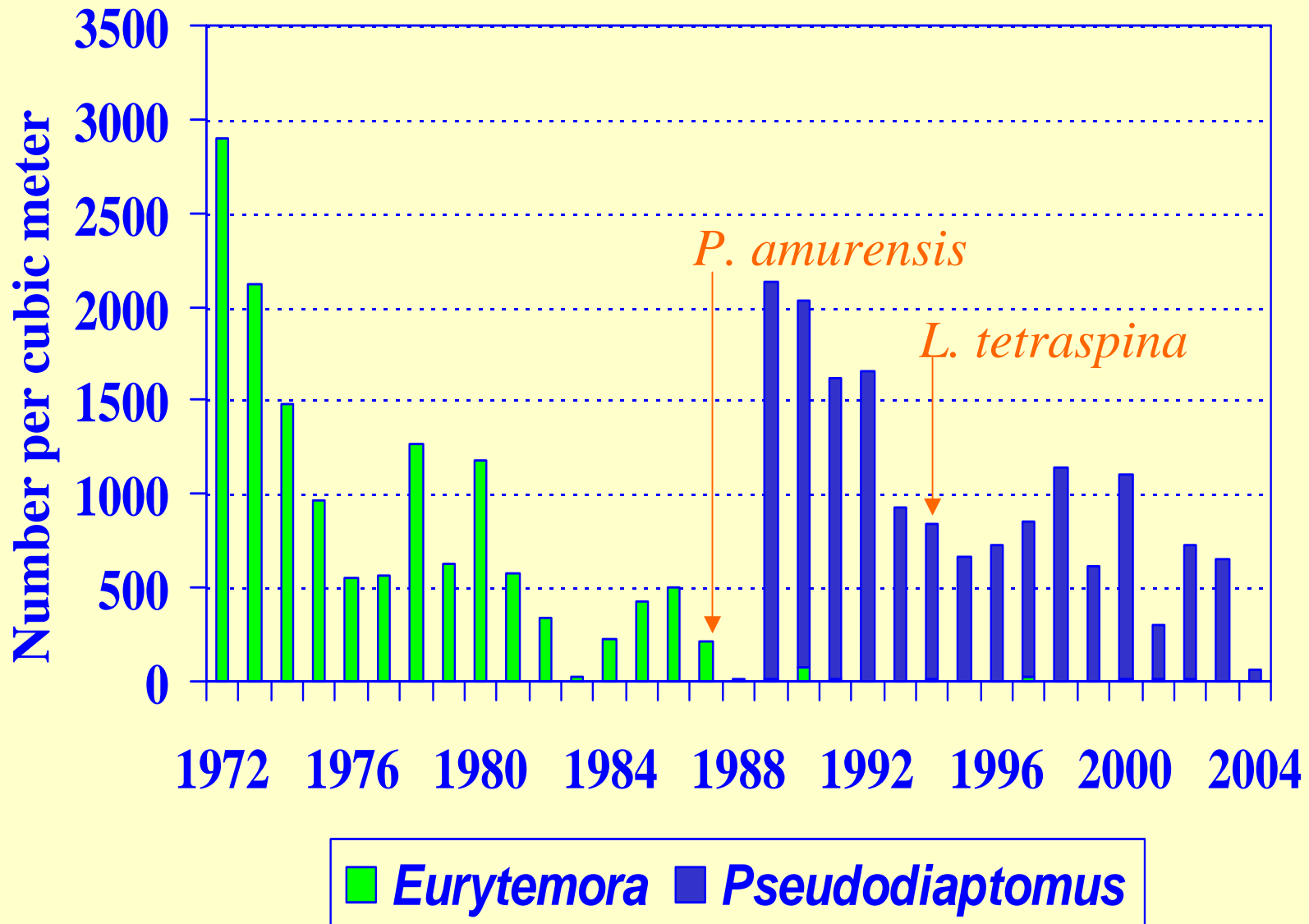
Lower Trophic Levels

- Zooplankton production low.
 - *Competition from introduced species, and*
 - *the new zooplankters unavailable to the fishes.*
- Phytoplankton production low
- Overall productivity appears low.

Fall Mysid Abundance

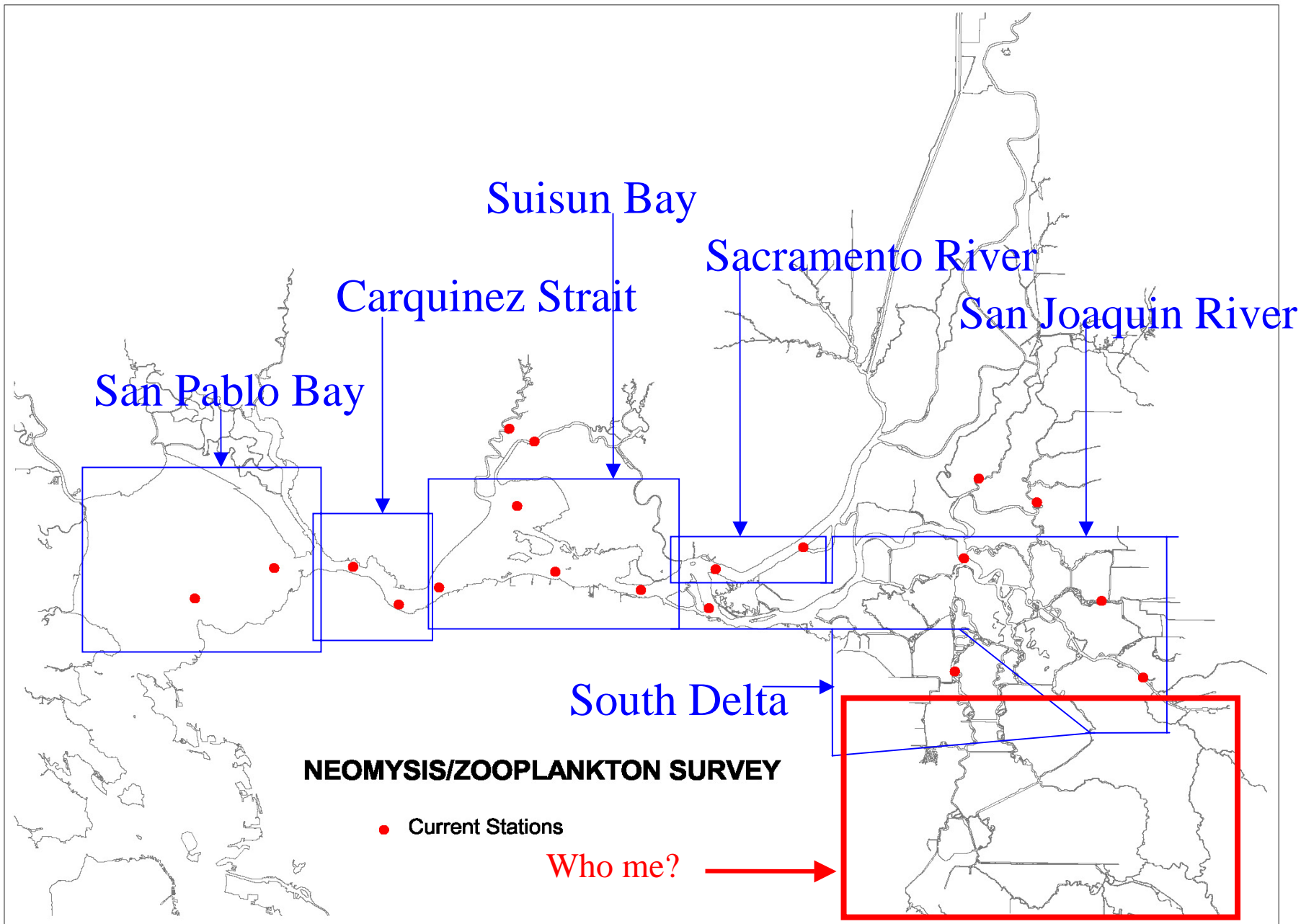


Fall Calanoid Abundance



Monitoring Plans, adequate to the task?

- Survey grid example would appear to be inadequate to track changes in the south Delta.
 - The one “South Delta” station would appear to be in the Central Delta, and
 - there are no stations in the South Delta, except perhaps along the San Joaquin River.



CDFG Data - Courtesy of W. Lee Mecum, CDFG - Modified by Author

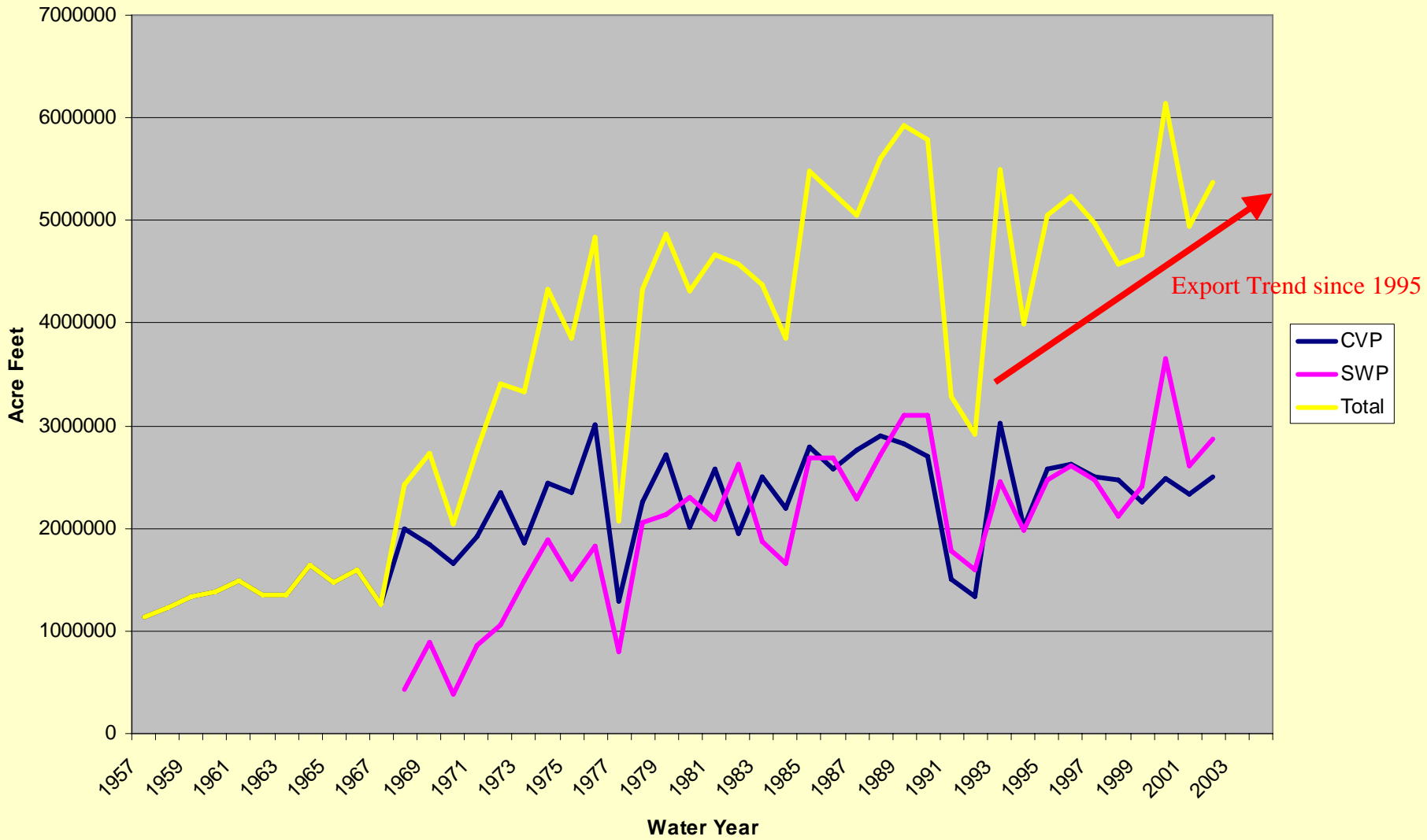
Meanwhile we have

“Analysis Paralysis,”

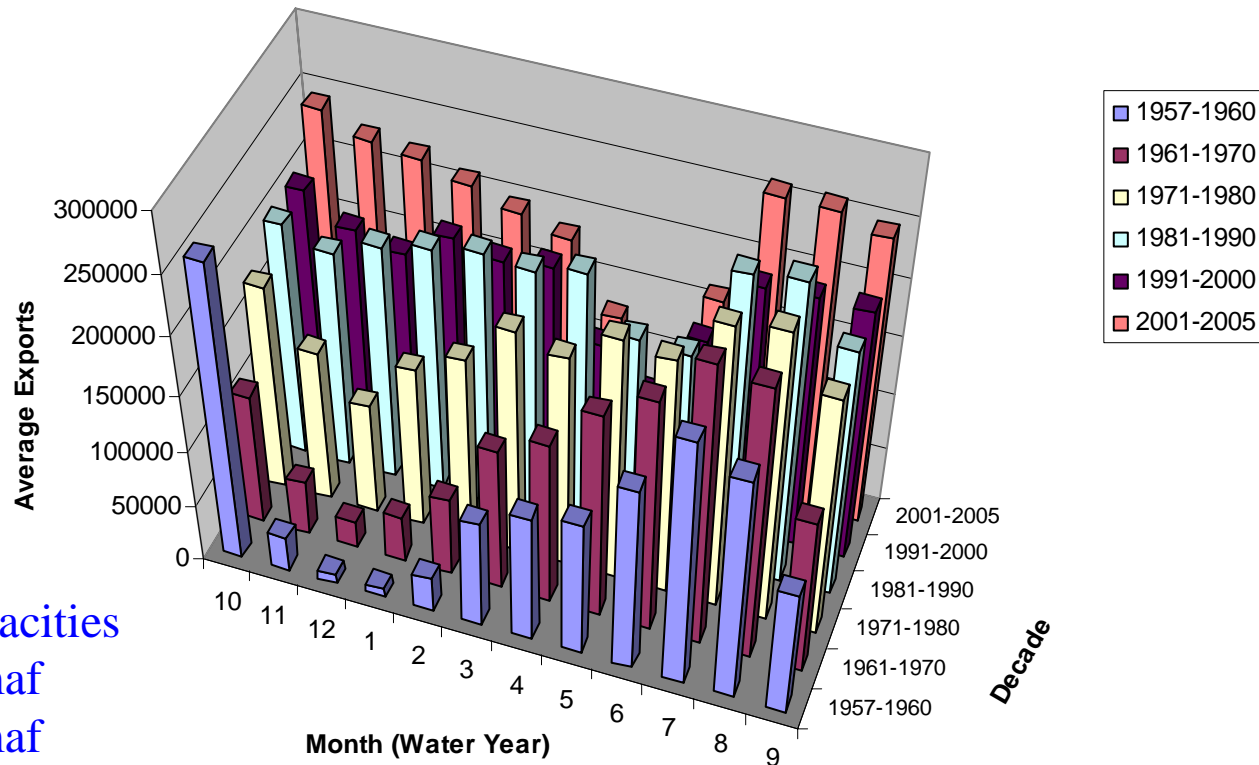
and

Increasing Exports

CVP and SWP Exports (1957-2002)



CVP Average Monthly Exports by Decade



Annual Plant Capacities

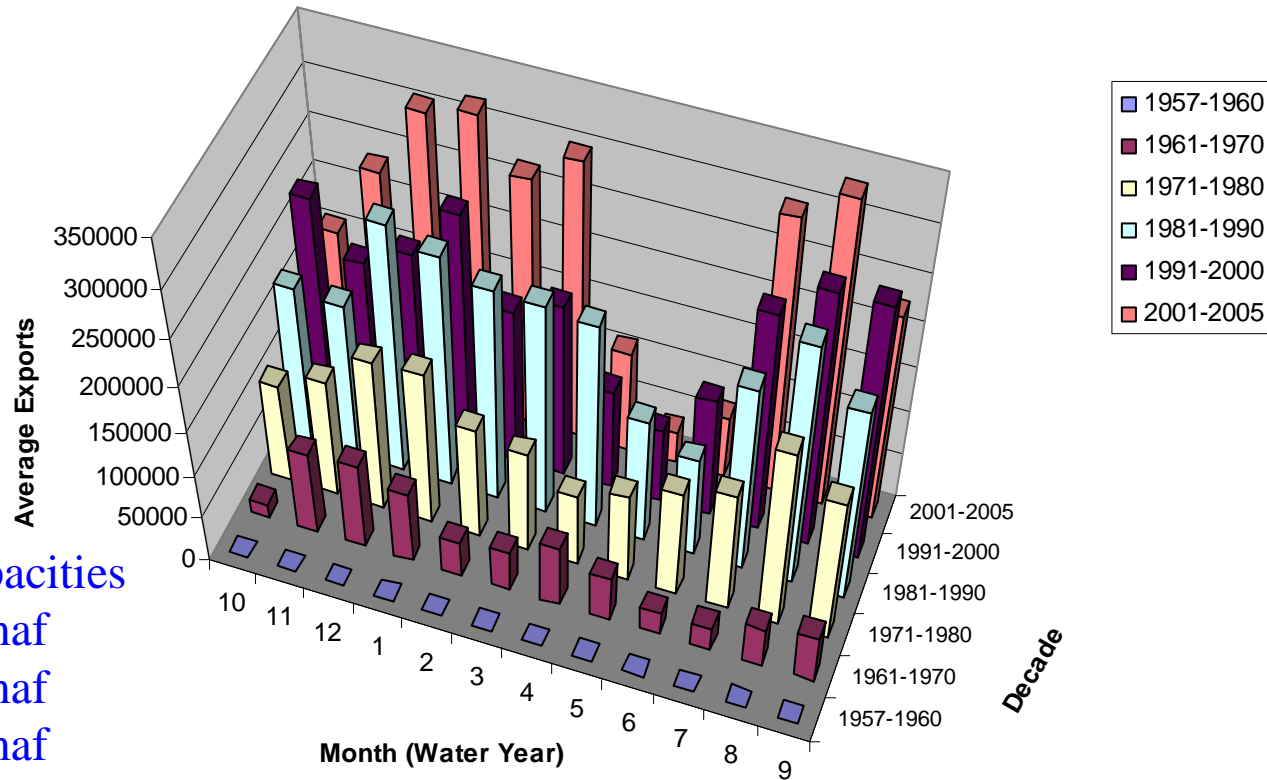
4300 cfs = 3.1 maf

4600 cfs = 3.3 maf

5200 cfs = 3.9 maf

Note the summer increases in exports, to make up for the curtailments (VAMP) in the spring. Average exports in acre feet per month.

SWP Average Monthly Exports by Decade



Annual Plant Capacities

6300 cfs = 4.6 maf

6680 cfs = 4.8 maf

8500 cfs = 6.2 maf

10300 cfs = 7.5 maf

Note the summer increases in exports, to make up for the curtailments (VAMP) in the spring. Average exports in acre feet per month.

Recommendations:

- A moratorium on increases in exports from the Estuary until “*we can all get better together.*”
- A comprehensive monitoring program for the Estuary and Delta needs to be implemented:
 - Water quality monitoring to be directed at all constituents of concern, not just electrical conductivity and dissolved oxygen.
 - Fisheries monitoring for all species, not just species of special concern.

Recommendations, continued:

- Listed species to be fully recovered before we put any additional stress on the ecosystem.
- Home stream water (San Joaquin River origin) must be used to augment flows in the San Joaquin River from above the Merced River confluence through the Port of Stockton (including recirculation flows).
- Use Delta Mendota Canal water to replace the water used to augment San Joaquin River flows.