

The State of Salmonids in the Delta

Workshop on the State of the Science on Fish Predation on Salmonids
in the Bay-Delta
UC Davis, July 22, 2013

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California Department of Fish and Wildlife



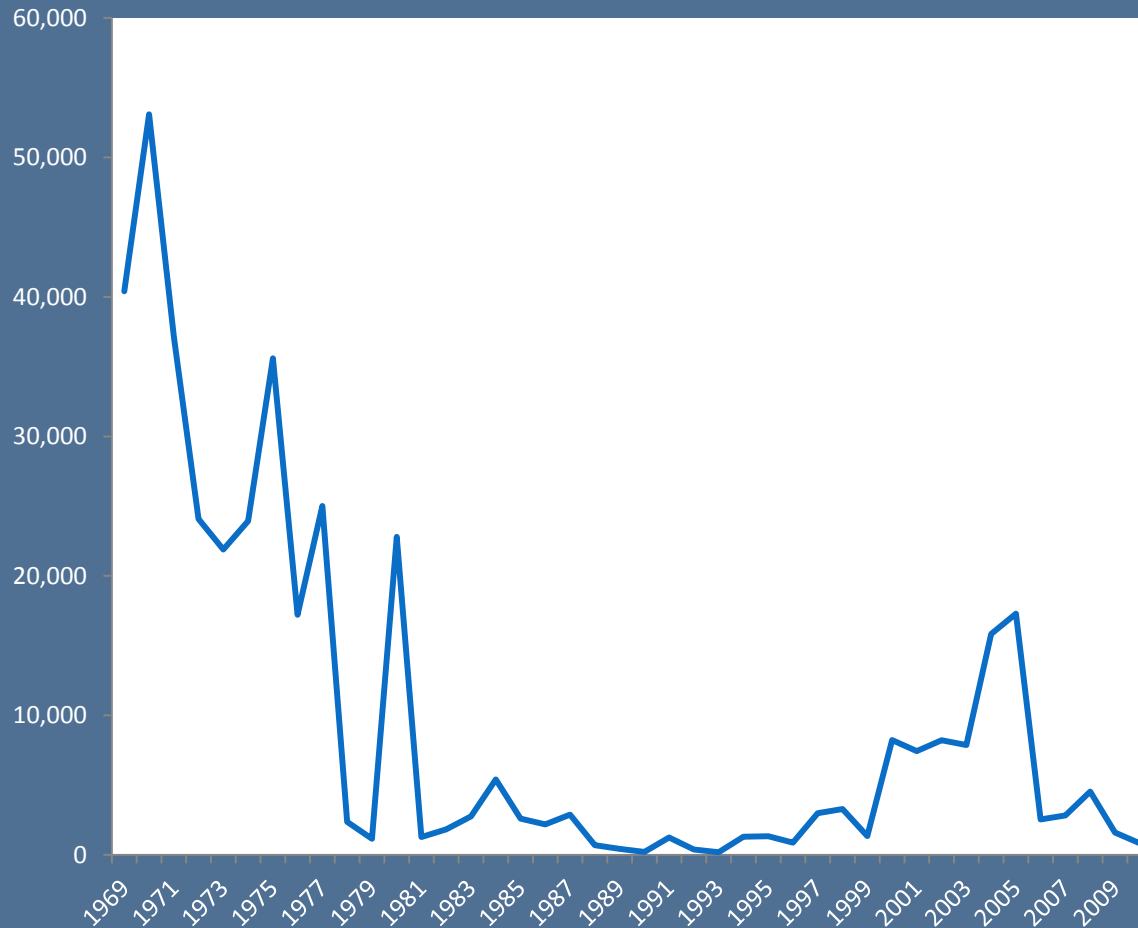
California Department of Fish and Wildlife

Introduction

- Abundances of Salmonids
- Through Delta Survival
- CVPIA Doubling Goals
- Striped Bass
- Centrarchids



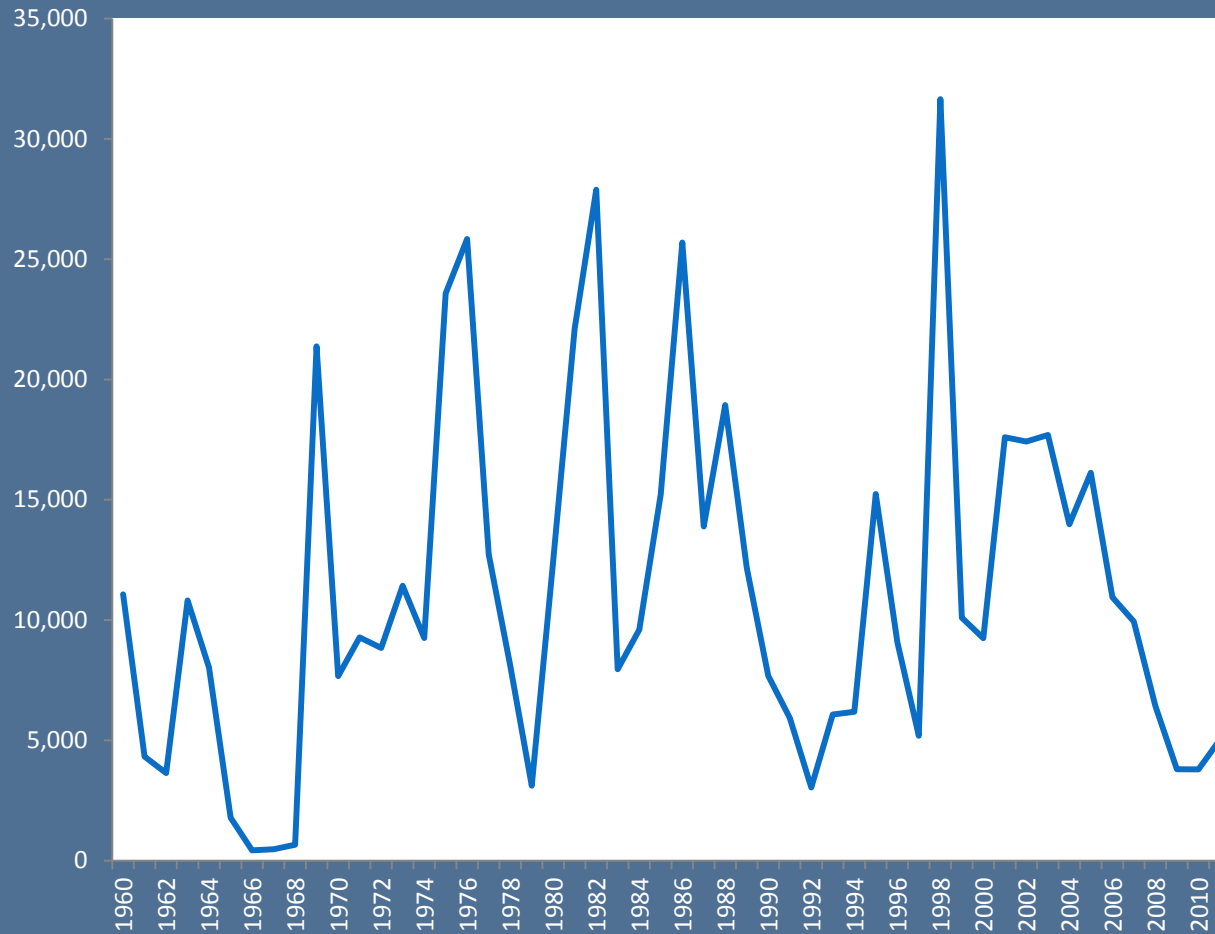
Winter-Run Chinook Salmon Spawner Estimate (Sacramento River)



Azat, 2012



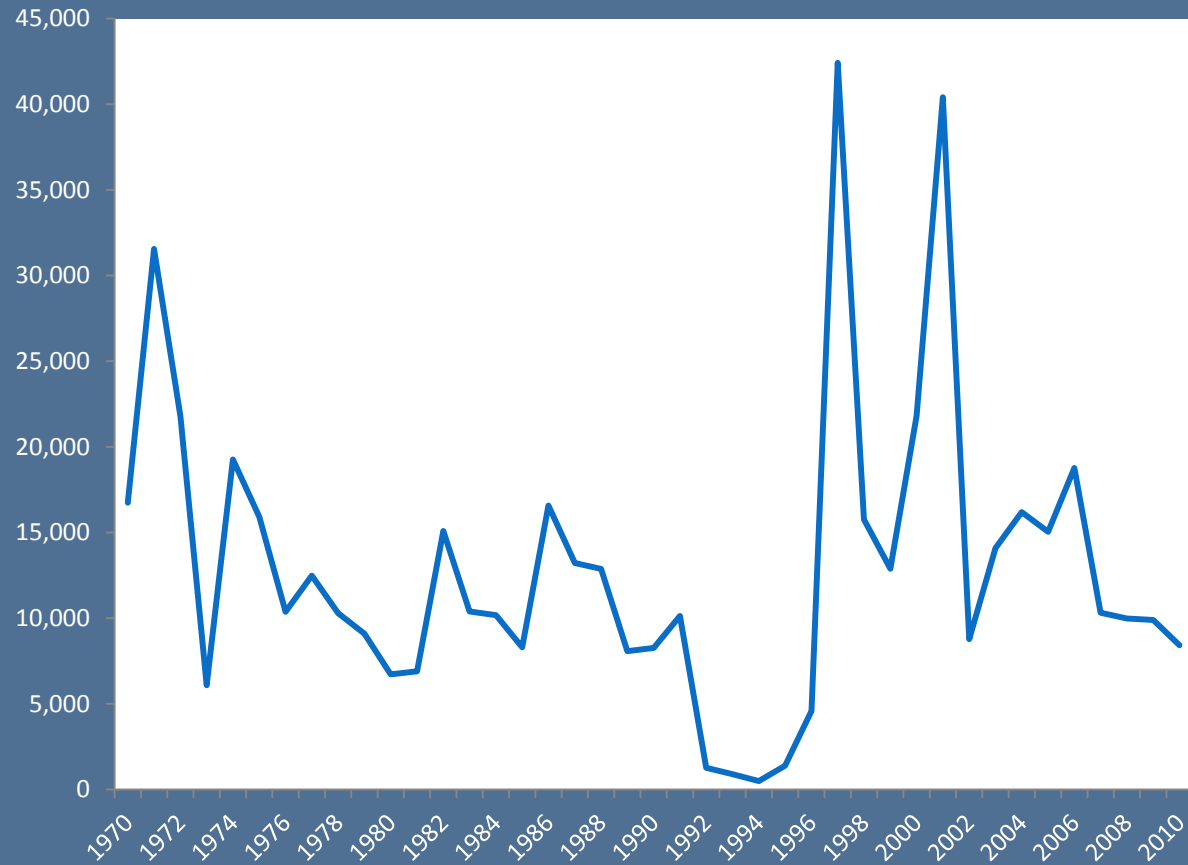
Spring-Run Chinook Salmon Spawner Estimate (Sacramento River System)



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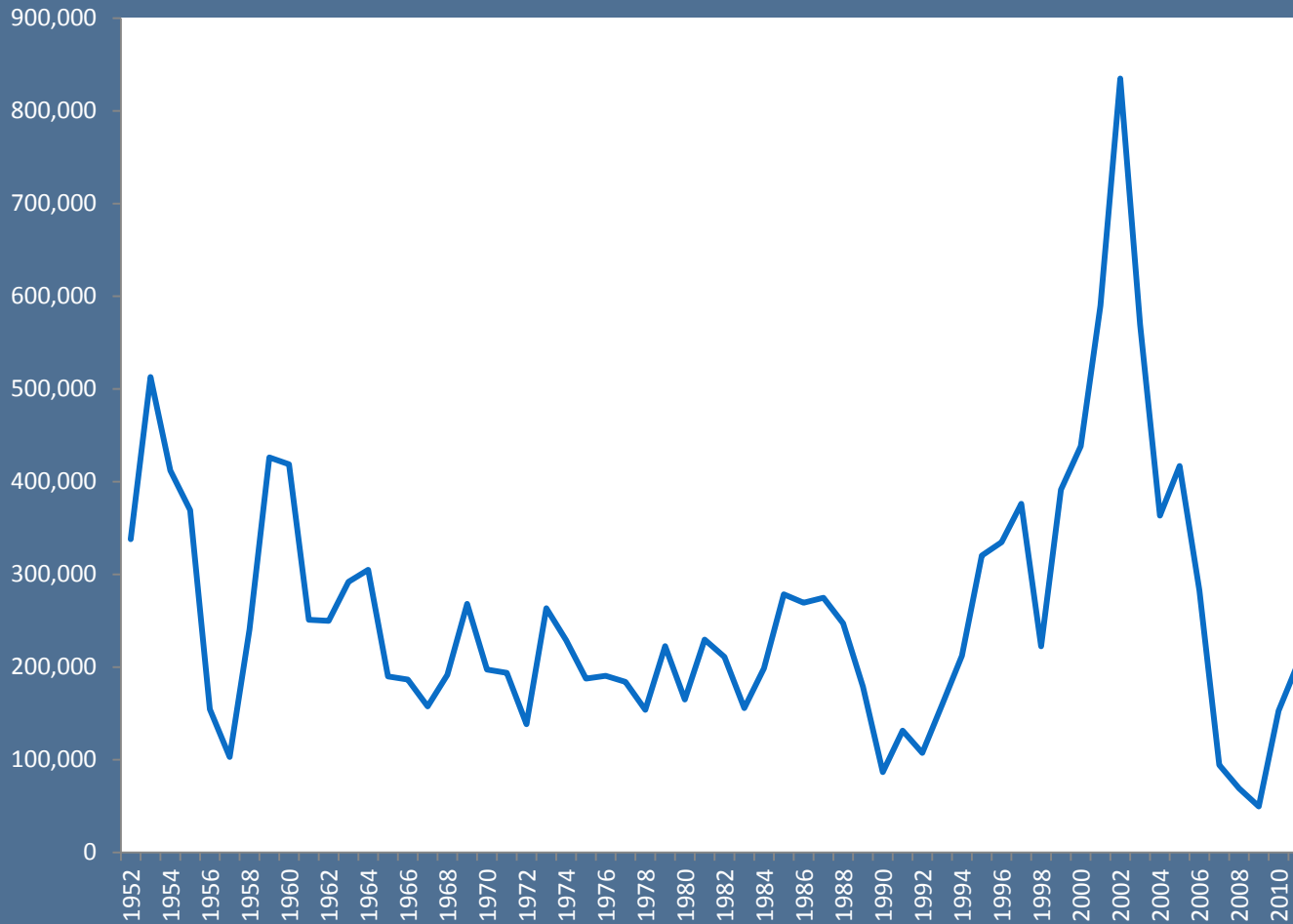
Late Fall-Run Chinook Salmon Spawner Estimate (Sacramento River System)



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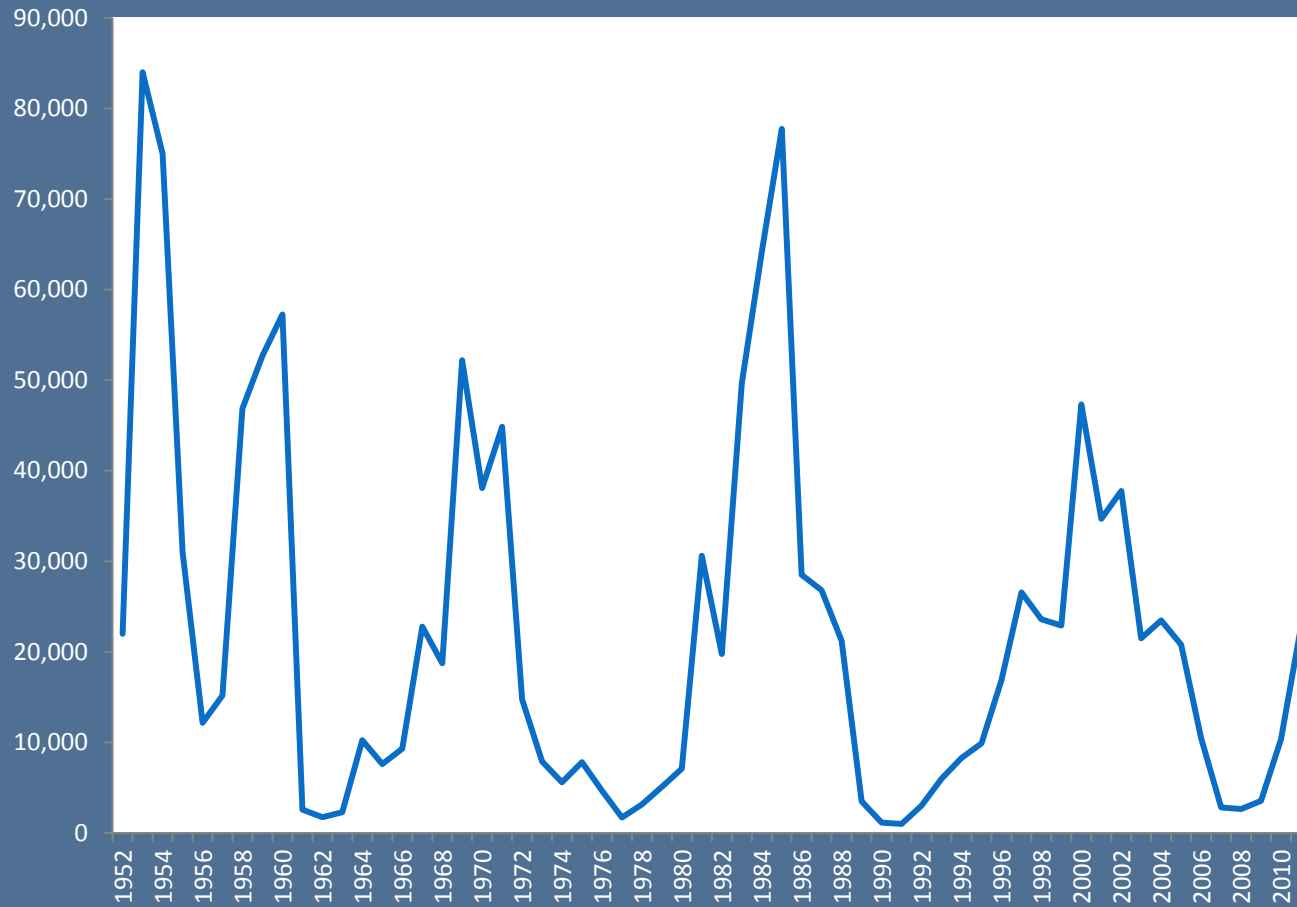
Fall-Run Chinook Salmon Spawner Estimate (Sacramento River System)



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Fall-Run Chinook Salmon Spawner Estimate (San Joaquin River System)



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Estimated Current Through Delta Salmonid Survival

Species	Population	Estimated Current Through-Delta Survival
Chinook Salmon	Sac Winter-run	0.40
	Sac Spring-run	0.40
	Sac Fall-run	0.35
	Sac Late Fall-run	N/A
	SJR Fall-run	0.05
Steelhead	American River	0.50
	Battle Creek	0.45
	San Joaquin River	0.10



Salmon Stressors

- Entrainment
- Predation
- Flows and Water Management
- Ocean Conditions
- Temperature
- Migration Barriers and Stranding
- Habitat Loss



Progress toward Central Valley Project Improvement Act (CVPIA) Doubling Goal

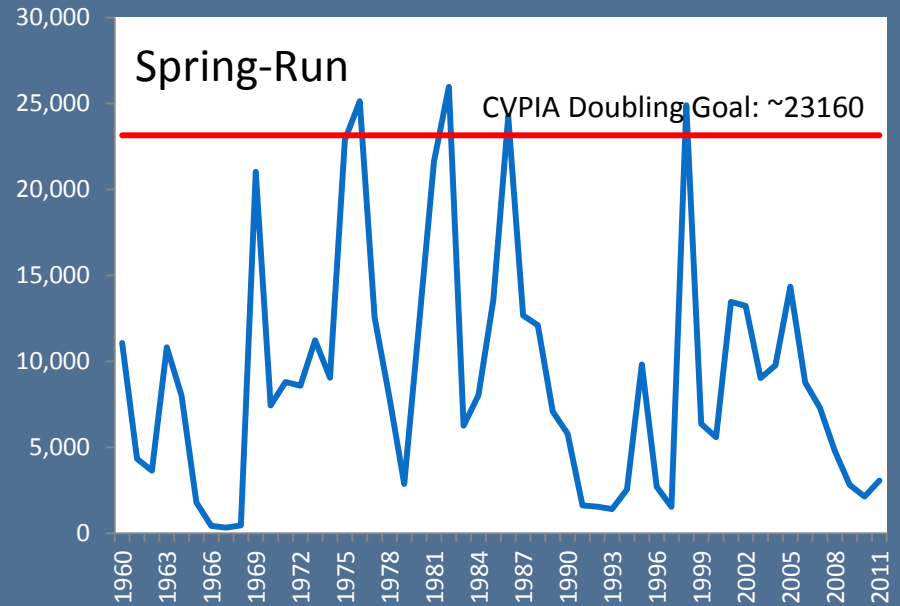
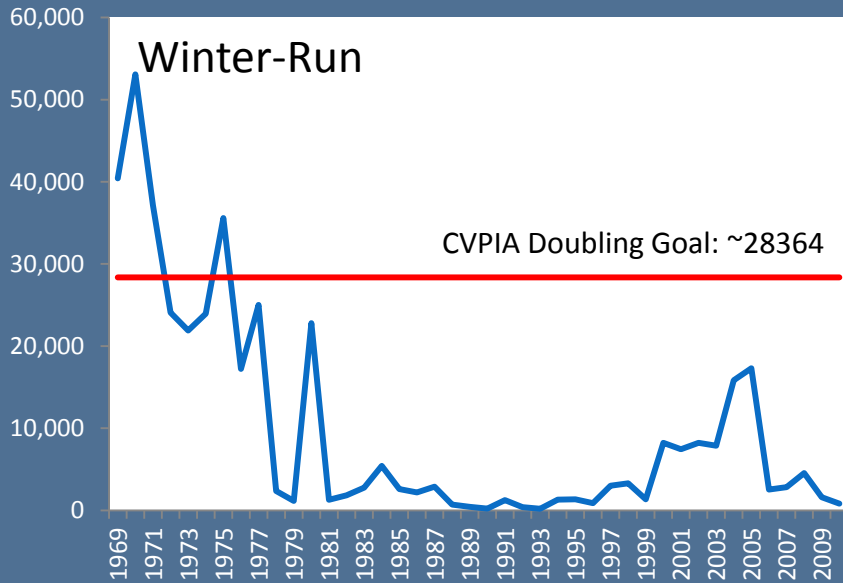
Ensure that by 2002, natural production of anadromous fish in Central Valley rivers and streams will be sustainable, on a long-term basis, at levels not less than twice the average levels attained during the period 1967-1991.

CVPIA Section 3406(b)(1)

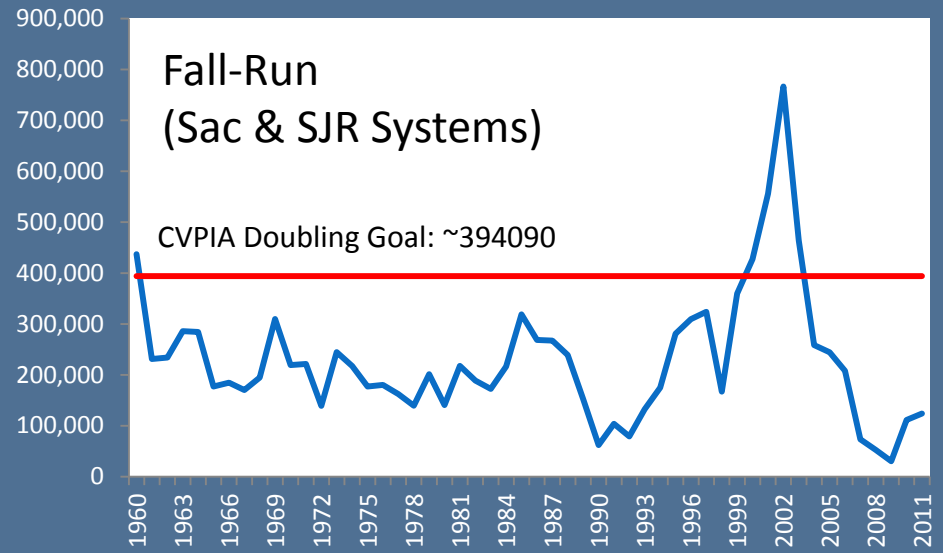
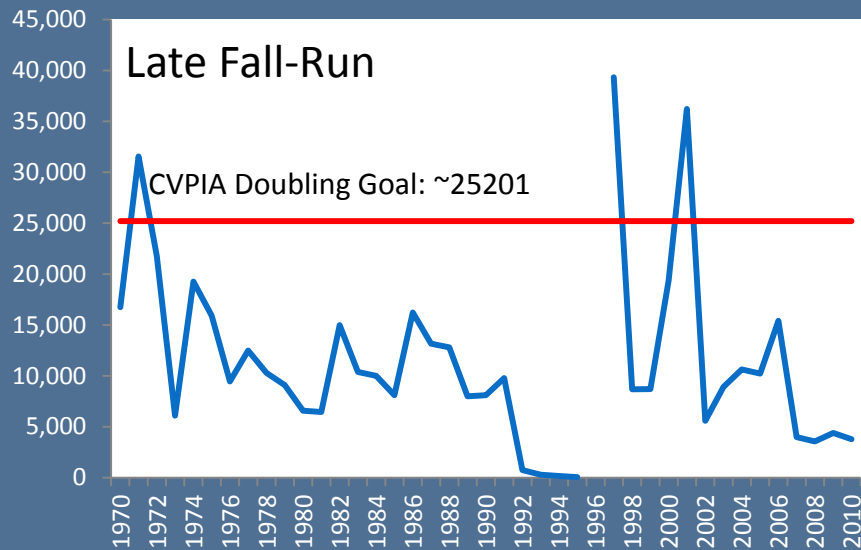


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Central Valley Project Improvement Act (CVPIA) Doubling Goal Targets



Central Valley Project Improvement Act (CVPIA) Doubling Goal Targets



Predation as a Factor Affecting Central Valley Salmon Abundance

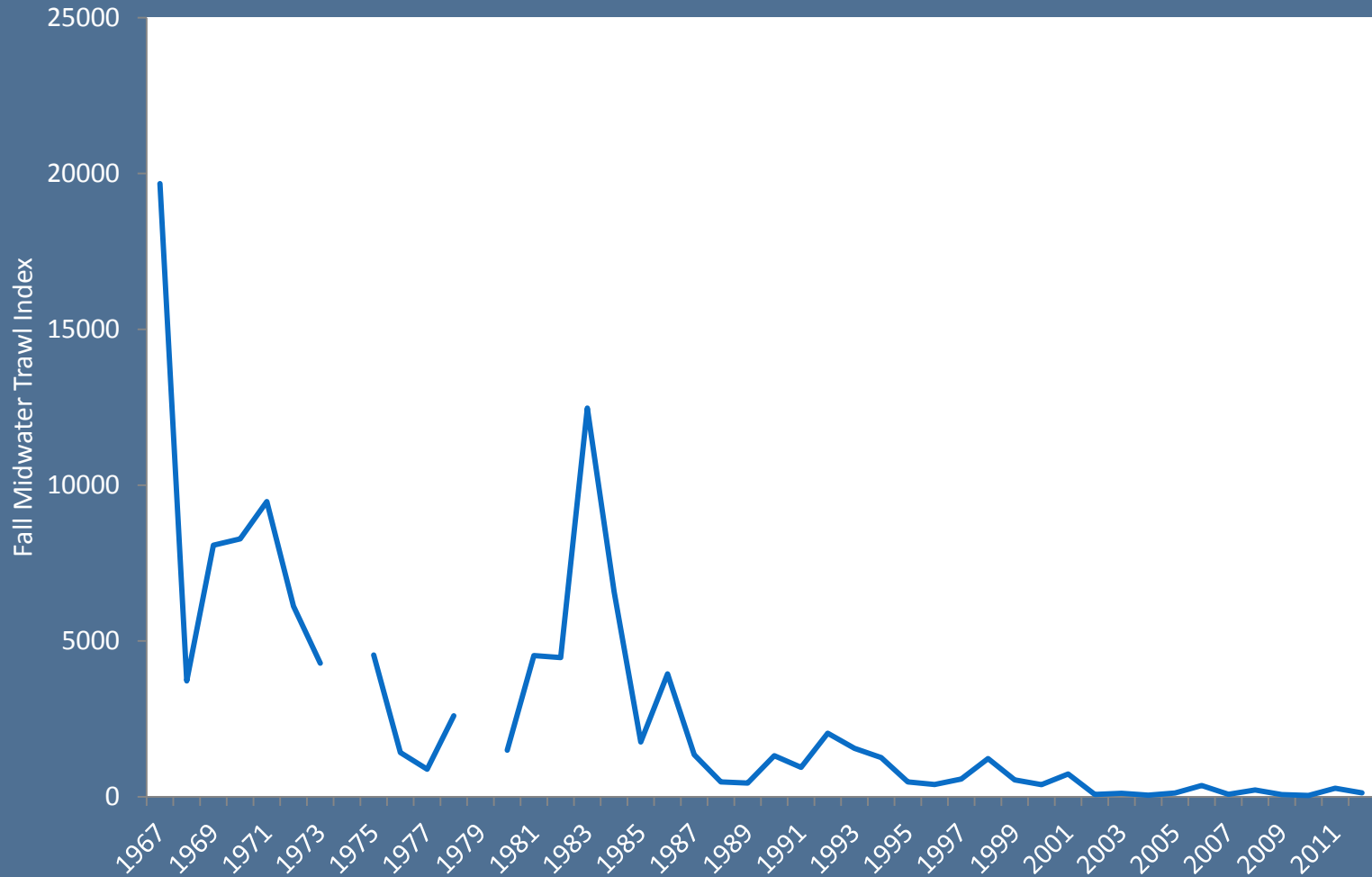
- California Department of Fish and Game. 2011. Report and Recommendation to the Fish and Game Commission in Support of a Proposal to Revise Sportfishing Regulations for Striped Bass. December 2011.
- San Joaquin River Group. 2013. Salmon smolt survival investigations. Ch. 5 in 2011 Annual Technical Report on implementation and monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan (VAMP), Prepared for California Water Resources Control Board in compliance with D-1641.
- Vogel, D. 2011. Insights into the Problems, Progress, and Potential Solutions for Sacramento Basin Native Anadromous Fish Restoration. Prepared for the Northern California Water Association and the Sacramento Valley Water Users. Natural Resources Scientists, Inc. April 2011.



Current Status of Striped Bass



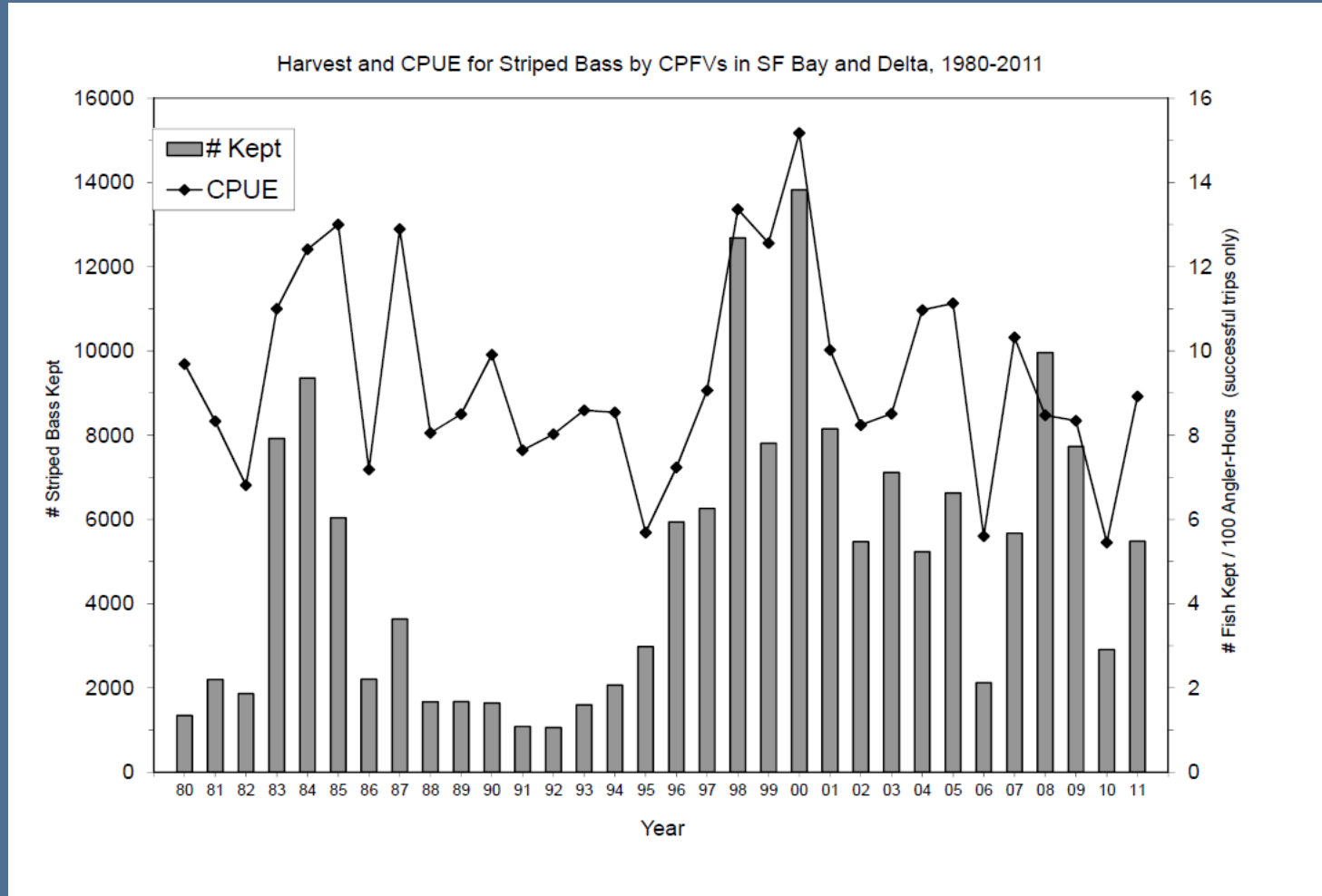
Age-0 Striped Bass Abundance



<http://www.dfg.ca.gov/delta/data/fmwt/indices.asp>



Legal Harvest Sized (≥ 18 in. TL) Striped Bass Abundance

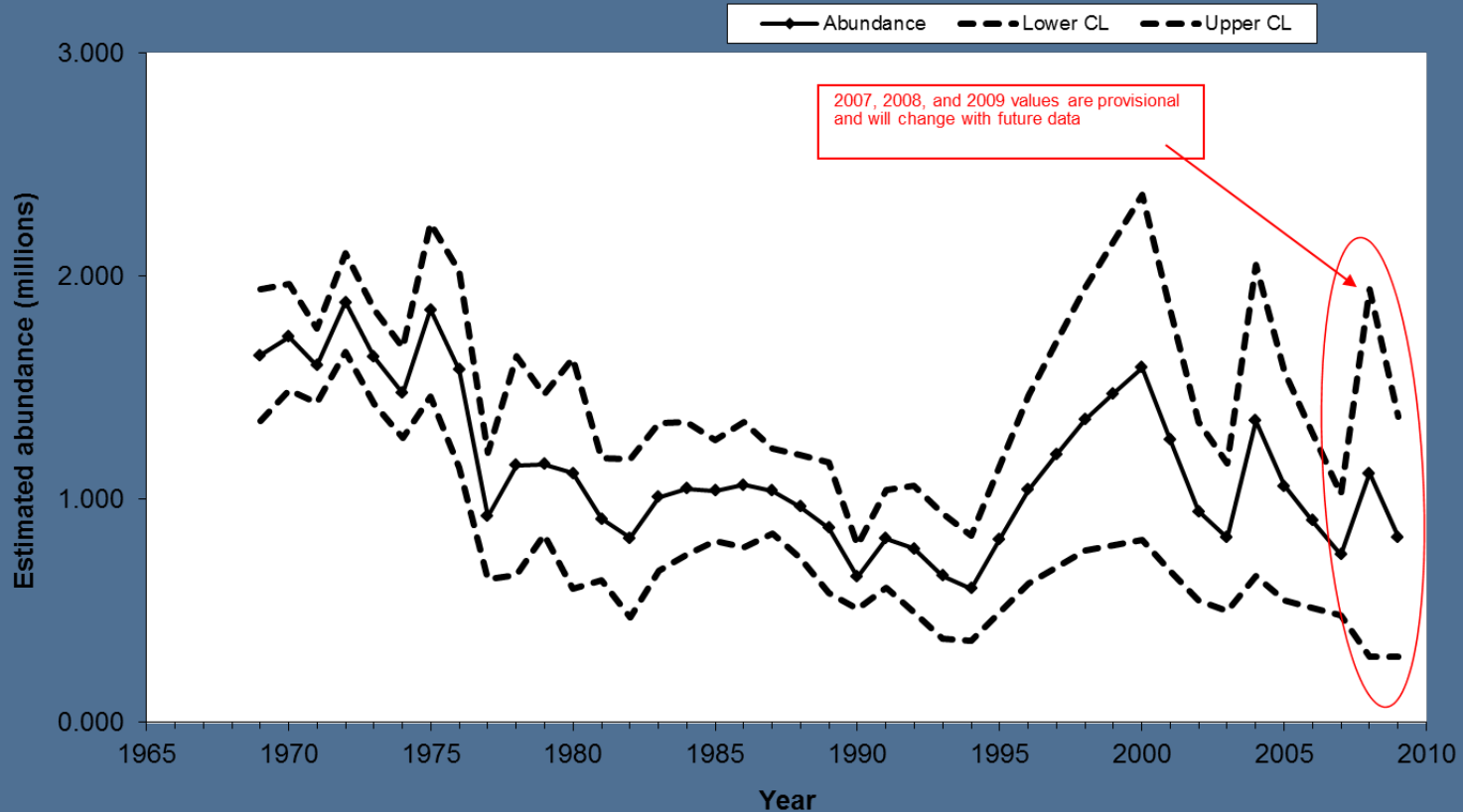


DFW unpublished data



Age ≥ 3 Striped Bass Abundance

Estimated Abundance of Legal-sized Striped Bass Age ≥ 3 in the San Francisco Estuary from DFG Mark-Recapture Data. Note: Values for 1995, 1997, 1999, 2001, and 2006 are mean of estimates from the immediate previous and following year.



DFW unpublished data



Other Fish Predators

- Other Centrarchids: The Central Delta has become a premier Black Bass Fishery,
 - No Data on abundance, some on food habits and habitat preference
- Others, catfish and pikeminnow: minimal information on abundance, pikeminnow a known salmonid predator.

