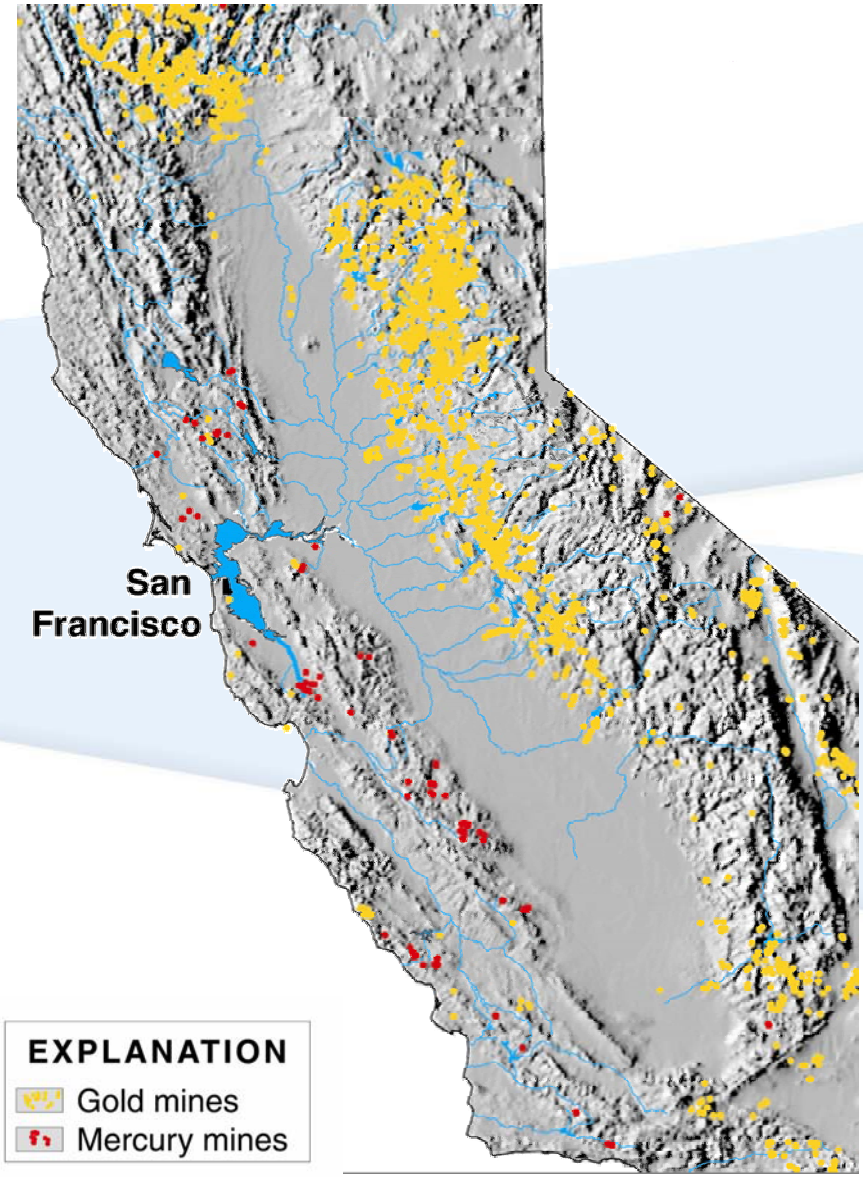
Agenda Item 5
Mercury Strategy for the Bay-Delta Ecosystem

A Unifying Framework for Science, Adaptive Management, and Ecological Restoration

Sources of Mercury



Adapted from USGS

Natural abundance

High in Coast Ranges
Lower in Sierra Nevada

Mining sources

Current and historic wastes from 239 known mines, most in Coast Range (inorganic Hg & MeHg)

Up to 3.6-million kg of Hg lost during precious-metal processing in Sierra Nevada during the late 1800's (Alpers & Hunerlach 2000)

Riverine inputs

Contaminated waterways in Coastal and Sierra ranges continue to export inorganic Hg and MeHg to the Bay-Delta

Hydraulic mining

Why is it a problem?

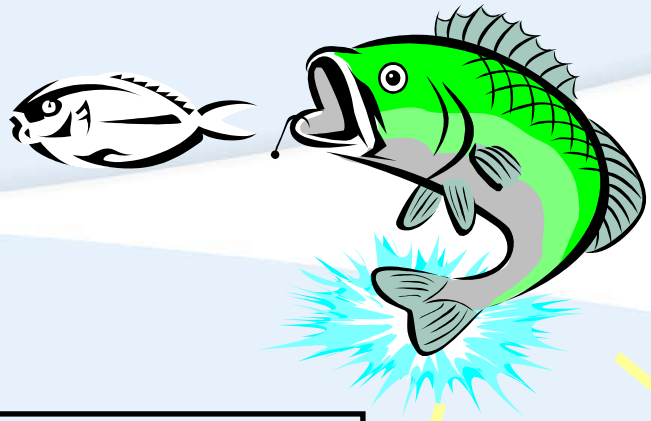
Protect or restore functional habitats in the Bay-Delta estuary.

Mercury

Wetlands
Floodplains

Dredge tailings

Methyl mercury



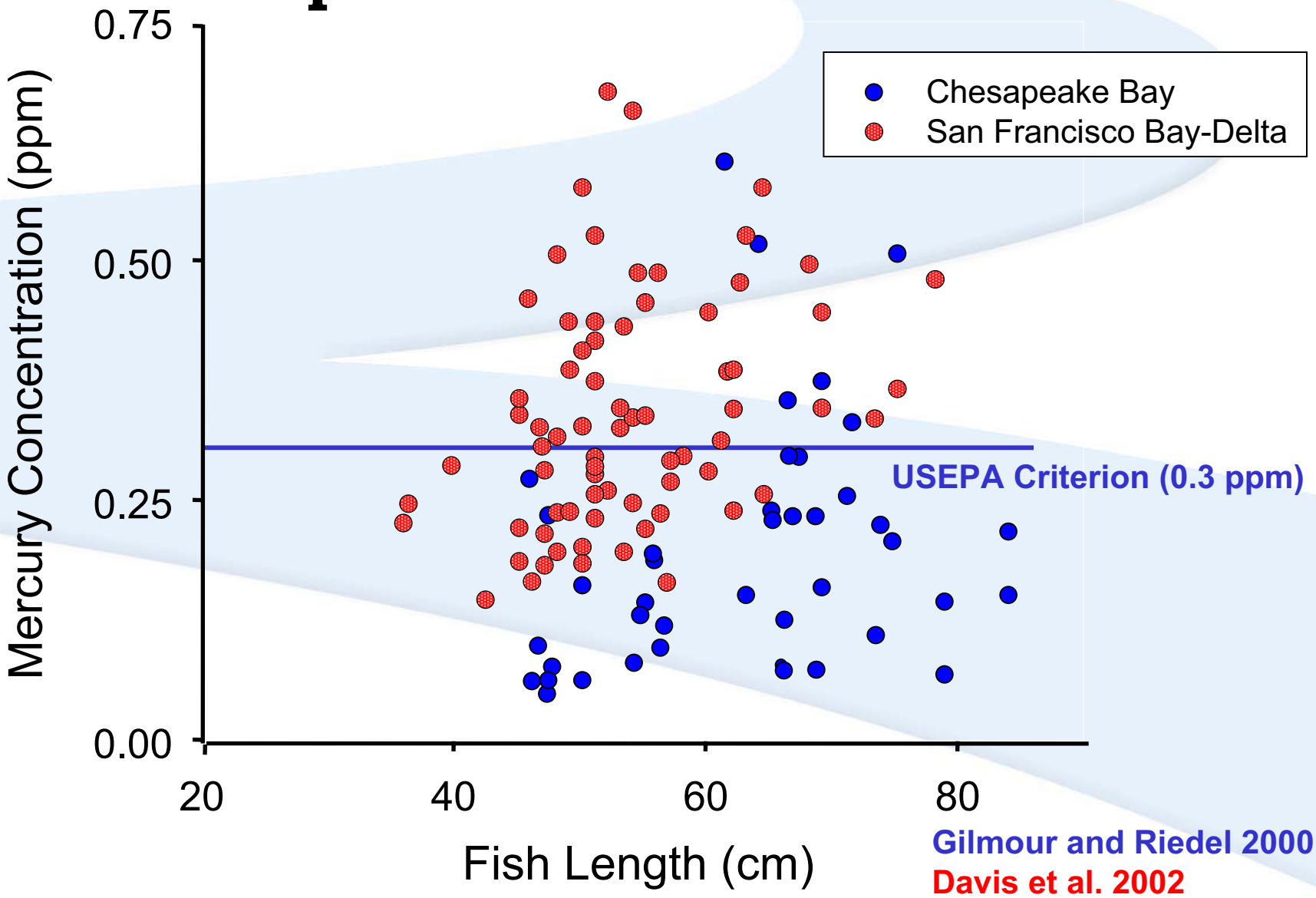
Fish reproduction

Eliminate to the extent possible toxic impacts to aquatic organisms, wildlife and people.

Avian reproduction

Neurological impairment

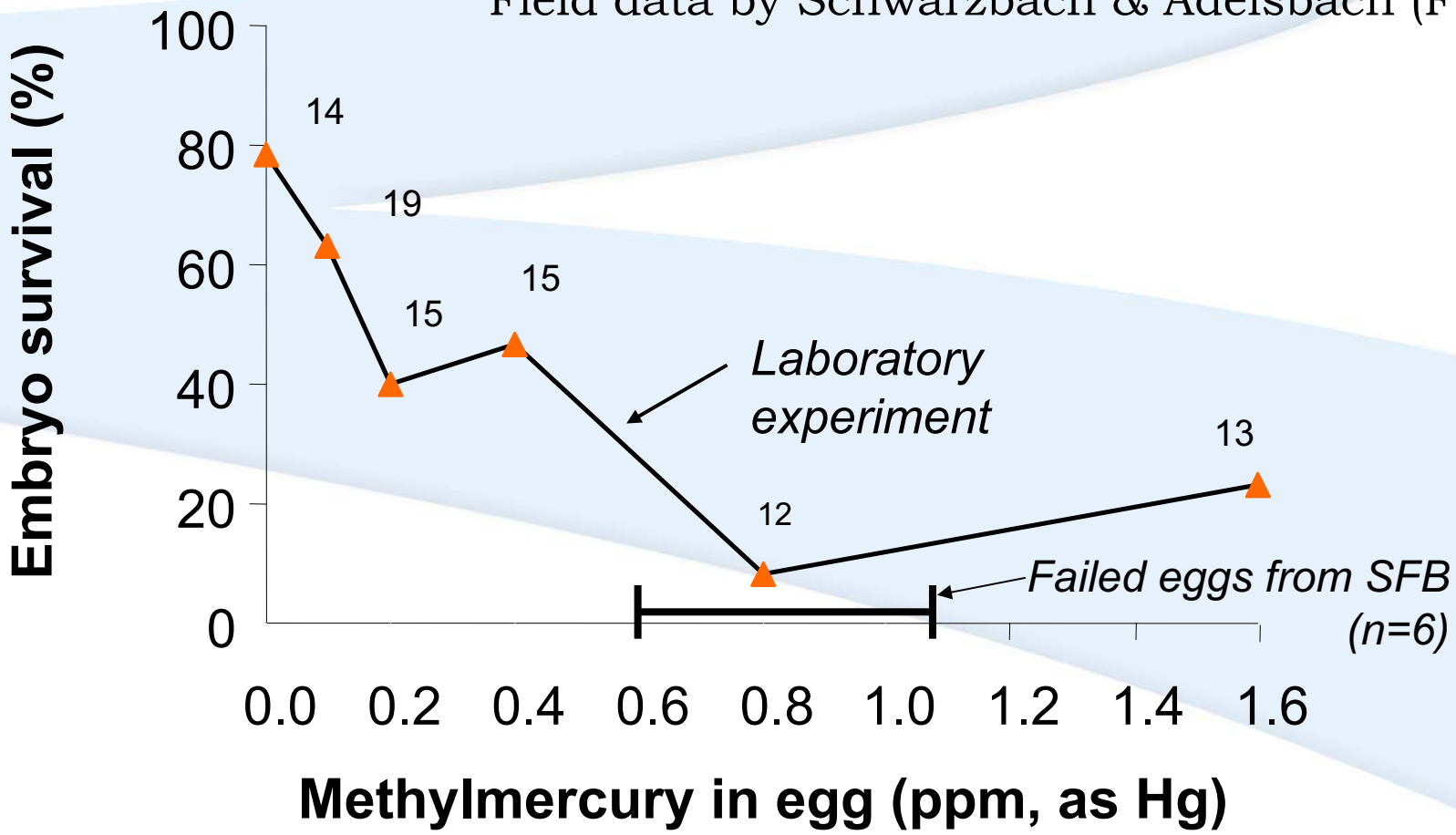
Mercury Contamination of Striped Bass
Comparison of Two Estuaries



Methylmercury exposure: Is reproductive success being affected in California clapper rails?

Laboratory data by Heinz (USGS)

Field data by Schwarzbach & Adelsbach (FWS)

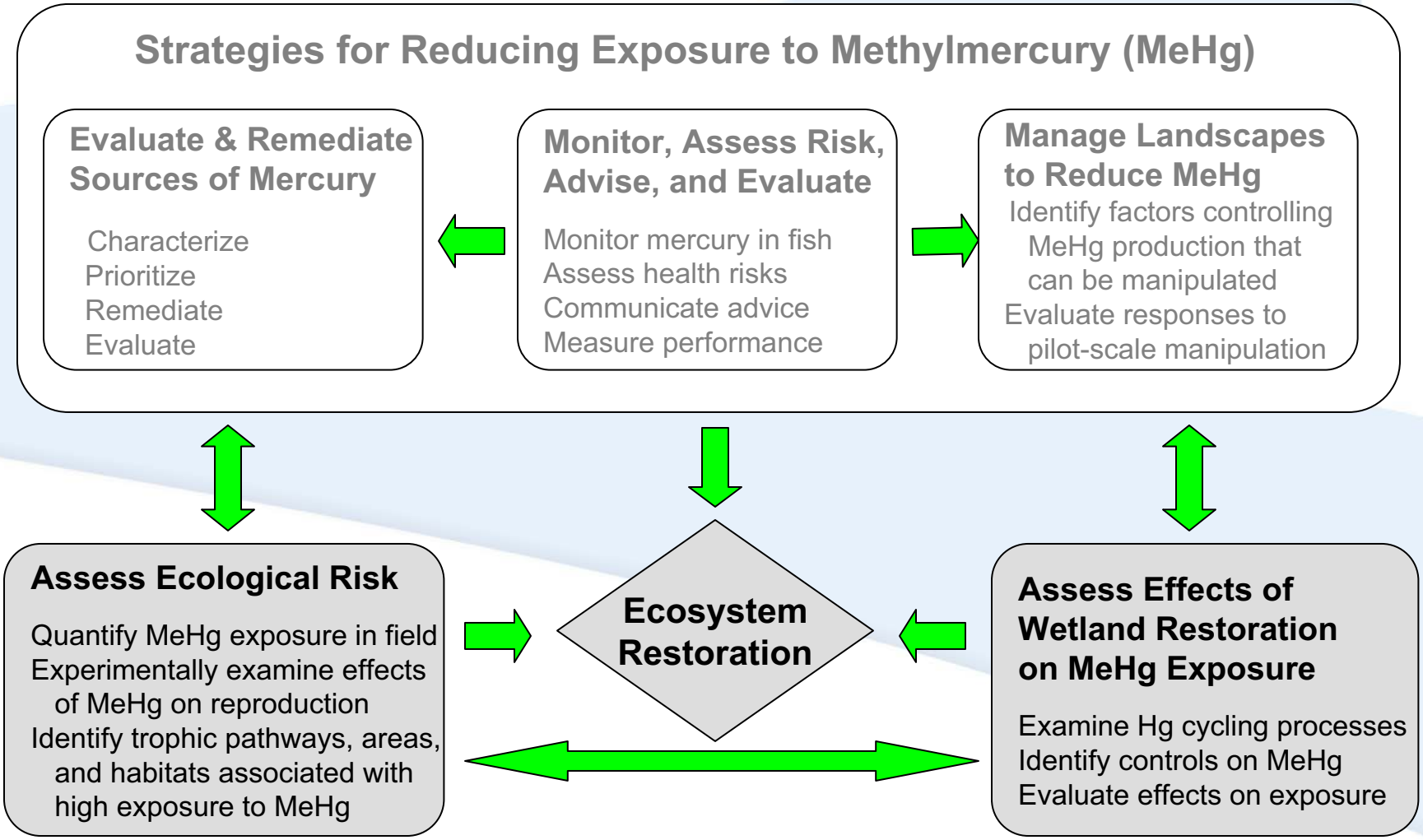


Process for development of the mercury strategy

Mercury Strategy

- A Unifying Framework for Science, Adaptive Management and Ecological Restoration
- Problem: biotic exposure to methylmercury
- Management goal: To avoid increasing – and to eventually decrease biotic exposure to methylmercury

The Mercury Strategy: Core Components and Linkages



The Scientific & Management Challenge: Reducing Exposure to Methylmercury

Approach	Objective
Source reduction	Decrease mercury inputs to environment and mass available for methylation
Fish advisories	Reduce dietary exposure in humans
Landscape management (largely untested)	Decrease methylmercury production in ecosystems

Next steps

- Solicit proposals consistent with the strategy
- Develop monitoring program
- Build institutional framework to support strategy
- Develop implementation plan