

# CEQA Scoping Meeting

## Methylmercury TMDL & Basin Plan Amendment for the Sacramento-San Joaquin River Delta Estuary



Cesar Chavez Library  
605 North El Dorado Street  
Stockton, CA 95202



Thursday, 29 September 2005

Michelle Wood, Patrick Morris & Melanie Medina-Metzger

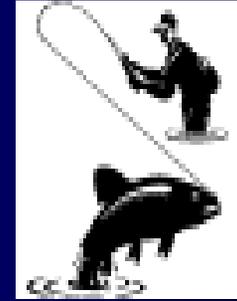
# Purpose of the CEQA Scoping Meeting / Workshop



- To introduce the proposed project.
- To obtain comments on:
  - A range of alternatives.
  - Significant or potentially significant environmental impacts of the alternatives.
  - Measures to mitigate any significant environmental impacts of this project.



## The Project:



# The Protection of Wildlife & Humans Who Consume Delta Fish

- Adoption of a fish tissue objective for methylmercury.
- Implementation of methyl & total mercury control programs.

# The Problem: High Mercury Levels in Delta Fish



- 1971 & 1994 fish consumption advisories for consumption of large striped bass and shark.
- Additional monitoring shows high Hg levels in other fish.

# Meeting Outline

- Logistics & ground rules: 5 min
- Regulatory requirements & process: 5 min
- Background information: 15 min
- Scoping of alternatives, significant environmental impacts & mitigations: 60 min
- Next steps: 5 min

# Logistics & Ground Rules

- Logistics
- Ground Rules
- Meeting Format



# Regulatory Requirements

- Federal Clean Water Act
- Porter Cologne Water Quality Control Act
- California Environmental Quality Act (CEQA)

# Federal Clean Water Act:

- CWA Section 303(d):
  - Identify waters not meeting standards.
  - Establish Total Maximum Daily Loads (TMDL) designed to attain standards.
- TMDL: The maximum amount of a pollutant that a waterbody can receive & still attain standards.

# Porter-Cologne Water Quality Control Act

- Regional Water Quality Control Boards are responsible for protecting surface and ground water quality.
- Requires Regional Boards to establish Basin Plans:
  - Central Valley Region Water Quality Control Plan – Sacramento River and San Joaquin River Basins

# Water Quality Control Plan: “Basin Plan”

- Beneficial uses
- Water quality objectives
- Implementation Plan
- Monitoring Program

# Basin Plan Amendment

- New policies addressing methyl & total mercury in the Delta
- Evaluation of alternatives
- Environmental & economic analysis
- Scientific peer review
- Public participation

# CEQA Checklist

Evaluate possible environmental impacts on the following categories:

- Aesthetics
- Agriculture
- Air Quality
- Biological Resources
- Cultural Resources
- Geology & Soils
- Hazardous Materials
- Hydrology & Water Quality
- Land Use & Planning
- Mineral Resources
- Noise
- Population & Housing
- Public Services
- Recreation
- Transportation
- Utilities & Sewer Services

# Basin Plan Amendment Approval Process

- Regional Water Board
- State Water Resources Control Board
- Office of Administrative Law
- U.S. Environmental Protection Agency

# Where are we in the process?

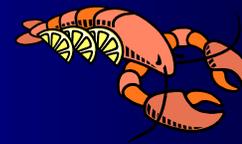
<b>Milestone</b>	<b>Schedule</b>
TMDL technical report	August 2005
<b>CEQA Scoping Meeting</b>	<b>29 September 2005</b>
Draft BPA Staff Report Completion	Nov 2005
Draft BPA Staff Report Peer Review	Dec 2005 – March 2006
Workshops	Dec 2005- March 2006
Final BPA Staff Report	May 2006
BPA Public Comment Period	May – June 2006
Regional Board Hearing	June 2006
State Board Hearing	~ Oct 2006
OAL Approval & USEPA Approval	~ March-June 2007

# Meeting Outline

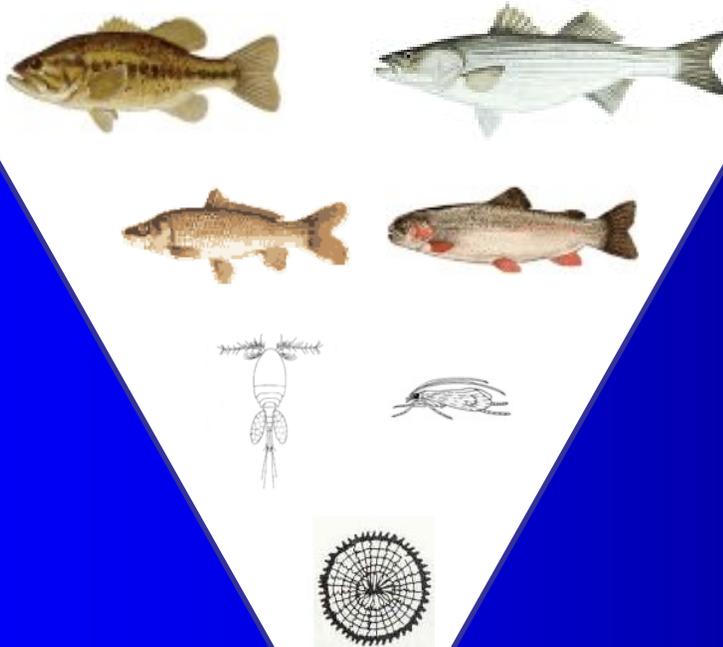
- Logistics & ground rules: 5 min
- Regulatory requirements & process: 5 min
- **Background information:** **15 min**
- Scoping of alternatives, potential environmental impacts & mitigations: 60 min
- Next steps: 5 min

# Why is Methylmercury a Problem?

- It is the most toxic form of mercury
- It impairs nervous, reproductive, and immune systems in humans and wildlife
- Exposure is mainly through consuming fish or shellfish



# MMHg Bioaccumulates...



Top Predators

Trophic Level 4  
bass, catfish  
pikeminnow

Trophic Level 3  
bluegill, carp,  
silverside, sucker

Trophic Level 2  
juvenile fish,  
zooplankton

Trophic Level 1  
diatoms, algae

# Total Maximum Daily Load for Methylmercury

- The TMDL is the maximum MMHg load that the Delta can receive and still meet fish tissue objectives.
- **GOAL:** Reduce MMHg levels in Delta fish.

# TMDL Elements

- Beneficial uses & fish tissue objectives
- Sources of MMHg
- Fish & water MMHg linkage
- Allocation of load reductions
- Margin of safety

# Beneficial Uses

- Municipal and domestic supply
- Agriculture (irrigation & stock watering)
- Industry (process & service supply)
- **Contact recreation**
- Non-contact recreation
- **Commercial & sport fishing**
- Freshwater habitat (warm & cold water species)
- Spawning (warm water species)
- Migration of aquatic organisms
- **Wildlife habitat**
- Navigation

# Numeric Targets

Target Species	Trophic Level Food Group	TLFG Target (mg/kg)	350-mm LM Bass Target (mg/kg)
Human	TL4 Fish (150-500 mm)	<b>0.30</b>	<b>0.28</b>
Bald Eagle	TL3 Fish (150-500 mm)	0.11	0.42
Osprey	TL4 Fish (150-350 mm)	0.26	0.36
Grebe	TL3 Fish (150-350 mm)	0.08	0.31
Kingfisher	TL2-3 Fish (50-150 mm)	0.05	0.73
Least Tern	TL2 Fish (<50 mm)	0.03	0.41

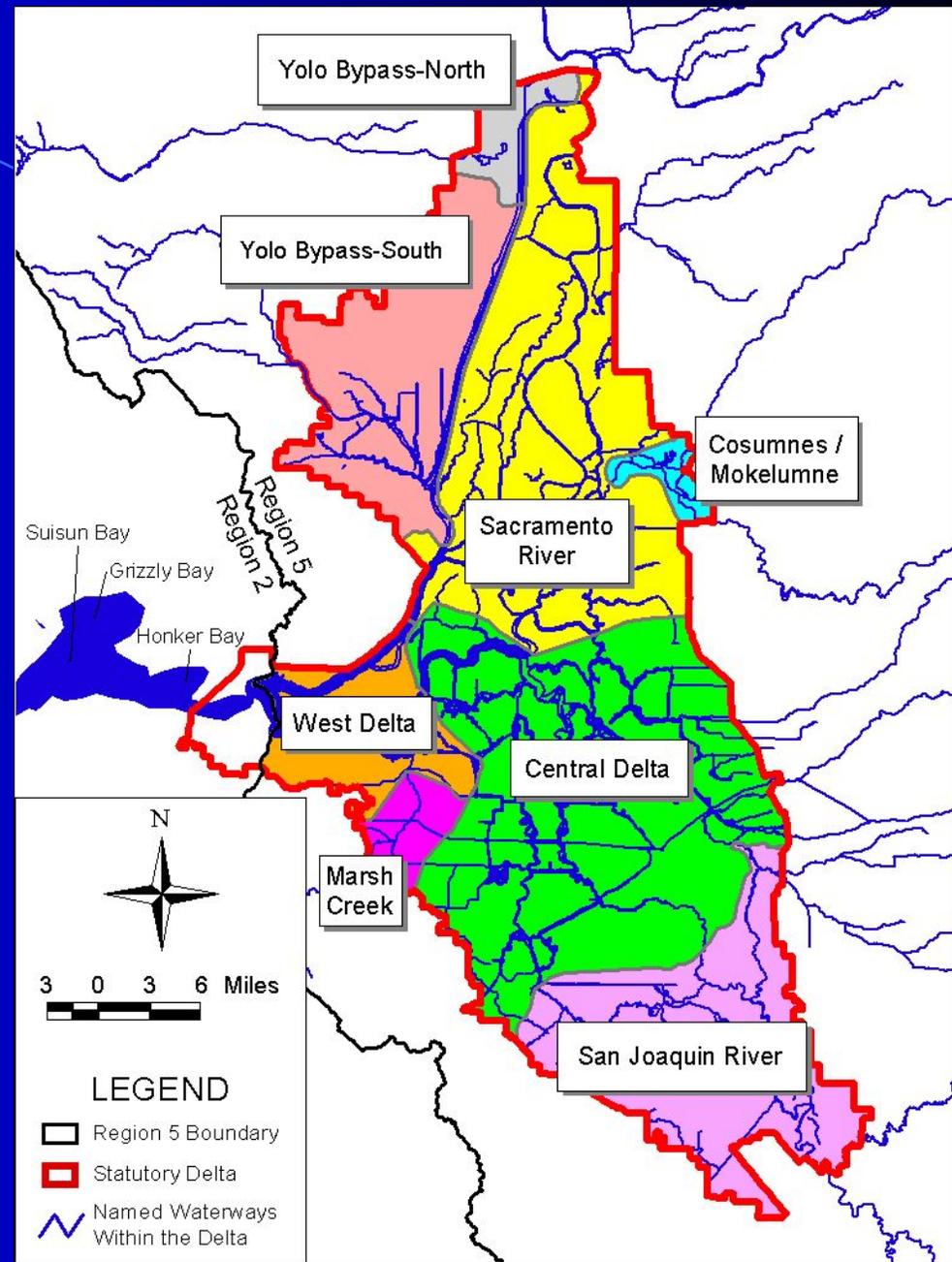
# Methylmercury Sources – Average Annual Loads

● <b><u>Within-Delta Sources:</u></b>	<b><u>1,840 g</u></b>	<b><u>37%</u></b>
– Sediment Flux (Wetland Habitats):	767 g	16%
– Sediment Flux (Open Water Habitats):	716 g	15%
– Wastewater (Municipal):	205 g	4.2%
– Agricultural Lands/Delta Islands:	123 g	2.5%
– Urban	21 g	0.43%
– Atmospheric Deposition:	8.5 g	0.17%
● <b><u>Tributary Inputs:</u></b>	<b><u>3,093 g</u></b>	<b><u>63%</u></b>

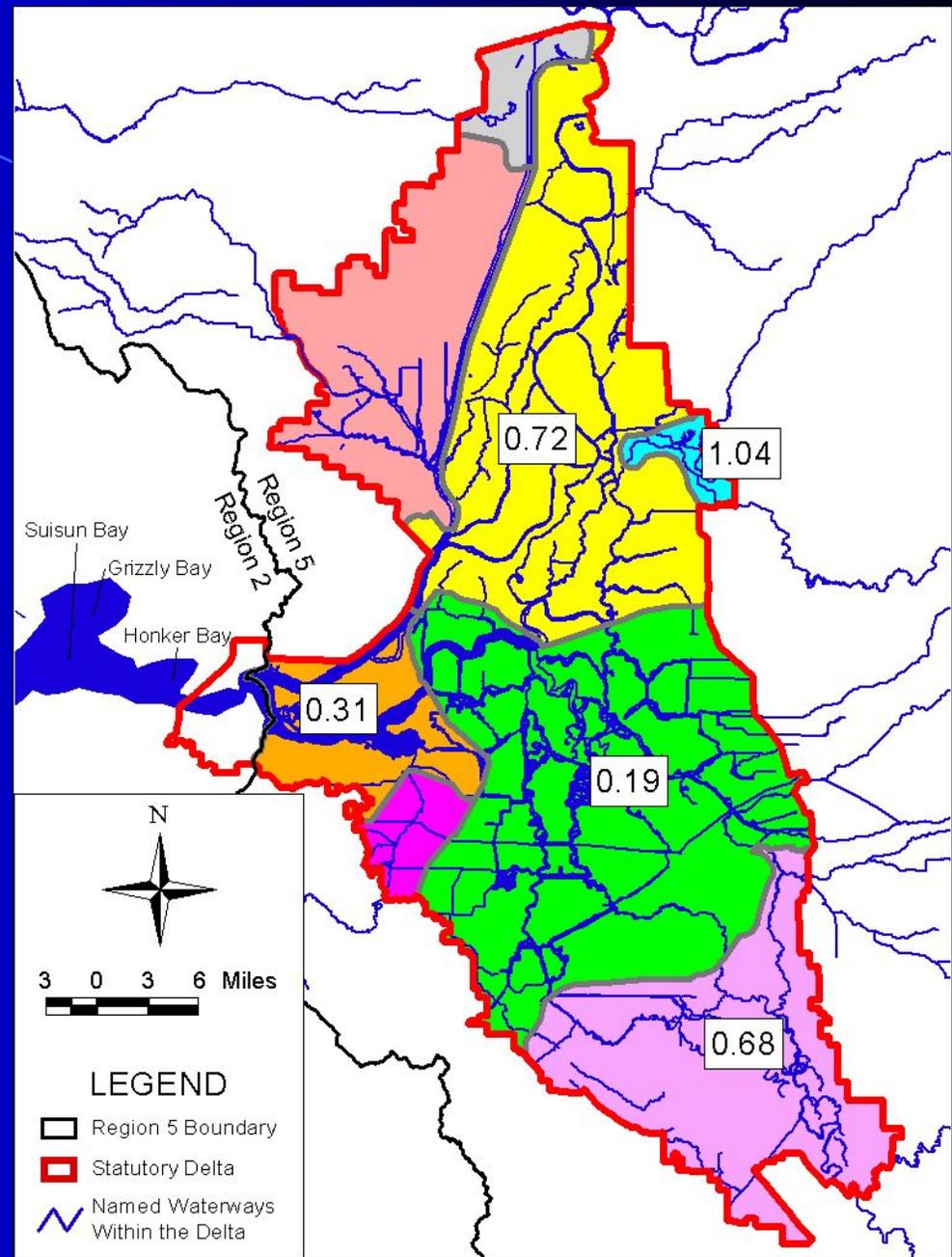
# The Delta

## 8 Hydrology-Based Subregions that Have Different:

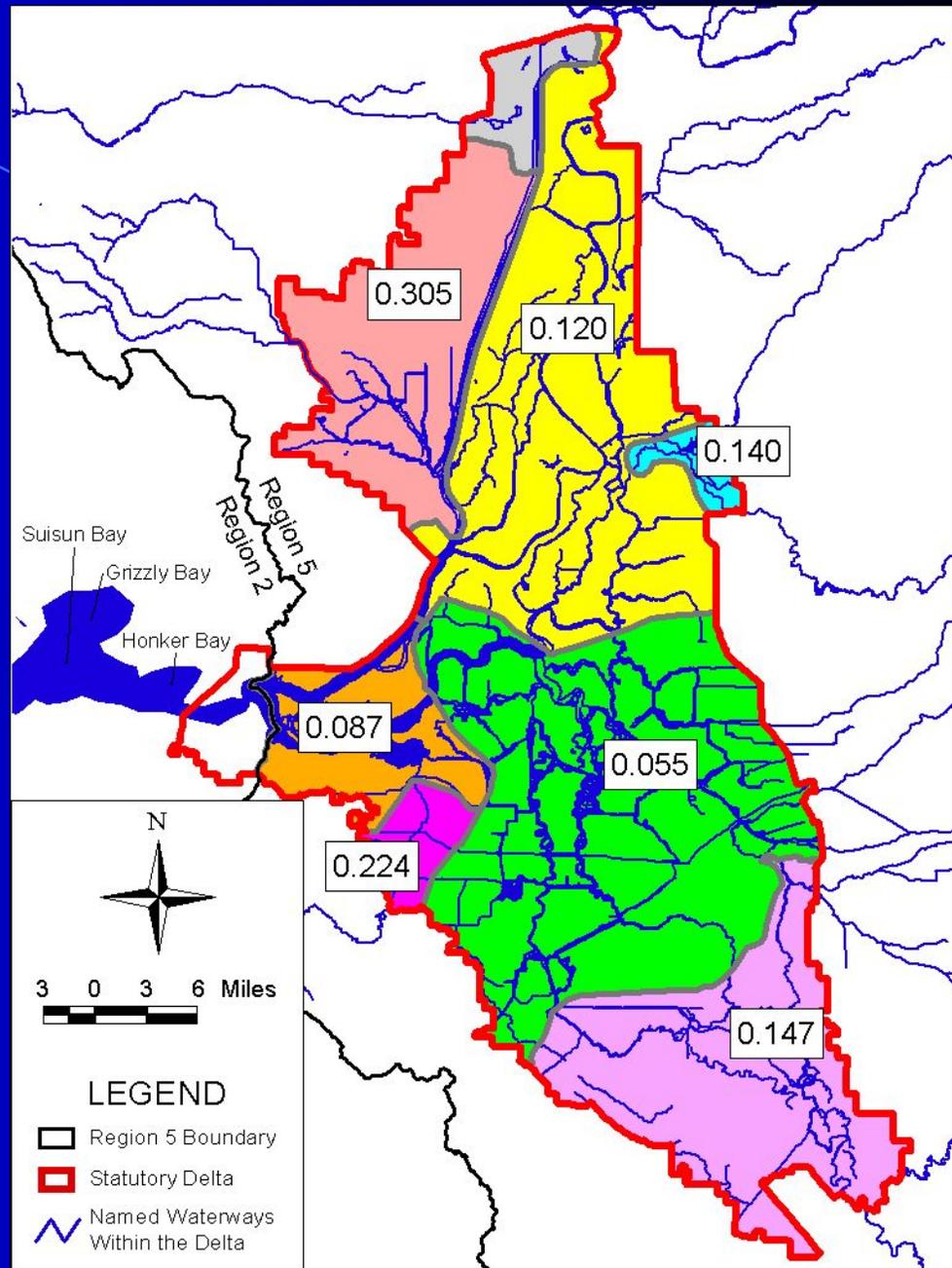
- Sources of MMHg
- Fish MMHg levels
- Ambient water MMHg levels



# LM Bass MMHg Levels



# Average Annual Ambient Water MMHg Levels

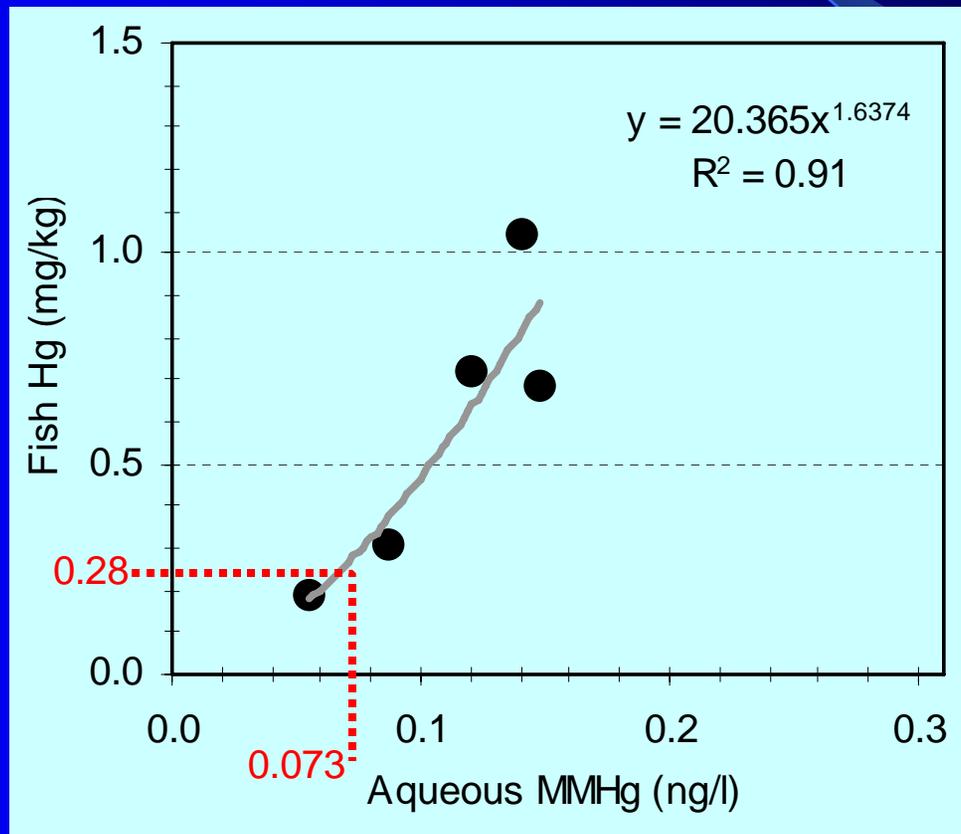


# Linking Fish Tissue Objective to Source Loads

- Link MMHg sources to fish MMHg concentrations
- Determine ambient water MMHg concentration needed to attain fish tissue objective

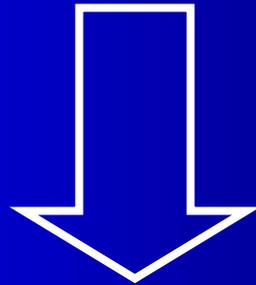
# MMHg Linkage

350 mm Largemouth Bass *versus*  
Average Annual Water Concentration



# Proposed Aqueous Goal & Margin of Safety

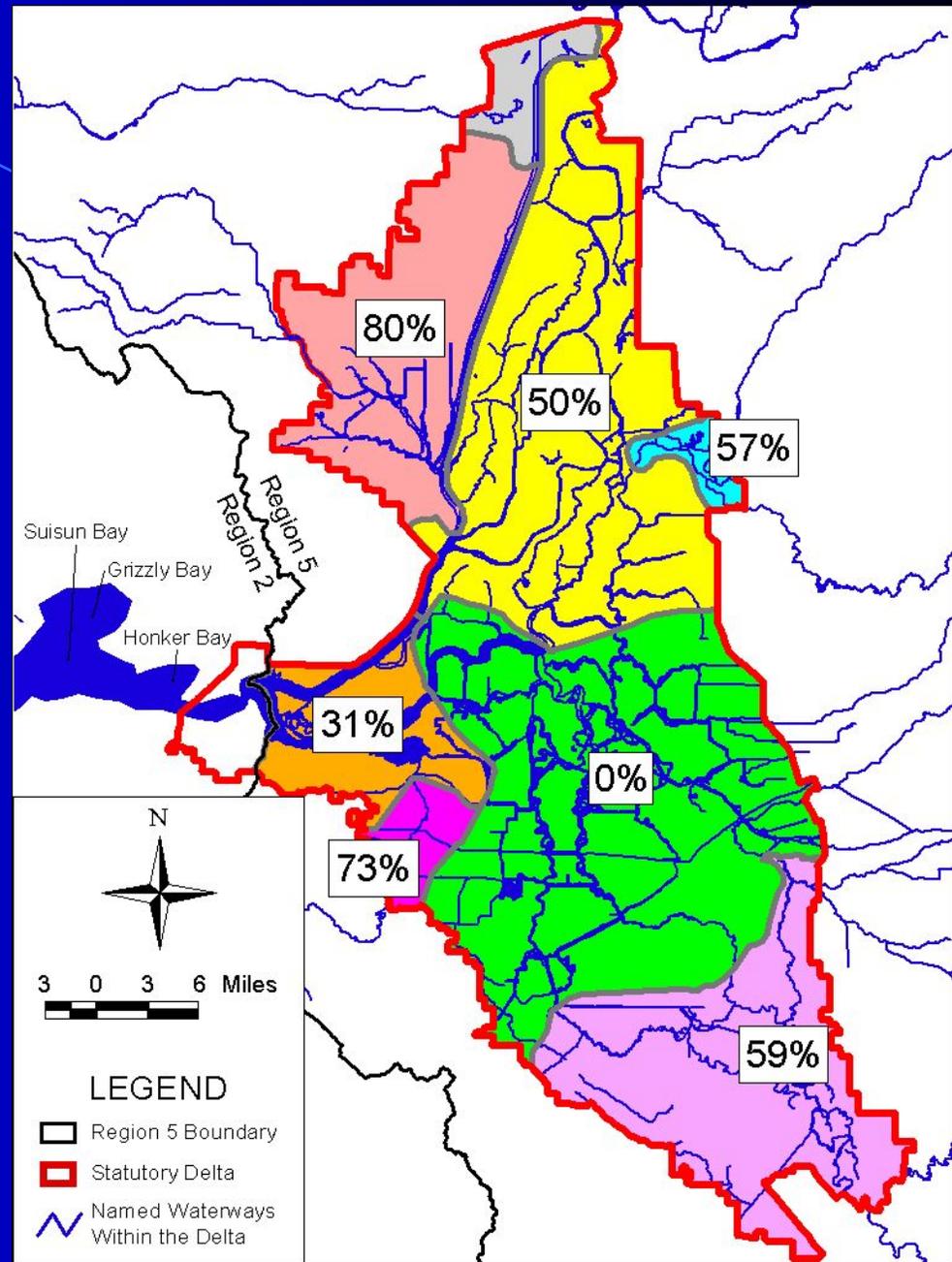
Safe Aqueous MMHg: 0.073 ng/l  
(average annual concentration)



*MOS of ~18%*

Proposed Water Goal: 0.060 ng/l  
(average annual concentration)

# Percent Load Reductions Used to Determine Allocations



# Meeting Outline

- Logistics & ground rules: 5 min
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- **Scoping of alternatives, potential environmental impacts & mitigations: 60 min**
- Next steps: 5 min



# Scoping



- A range of alternatives.
- Significant or potentially significant environmental impacts of the alternatives.
- Measures to mitigate any significant environmental impacts of this project.

# Scoping

- Addition of commercial & sport fish beneficial use to Basin Plan: 5 min
- Addition of fish tissue objective for MMHg to Basin Plan: 5 min
- Implementation options for MMHg & TotHg source reduction: 45 min
- Other concerns... 5 min

# Addition to Basin Plan: “Commercial & Sport Fish” Beneficial Use

## Existing Uses:

- Commercial species: crayfish, threadfin shad & bay shrimp
- Sport fish: salmon, striped & largemouth bass, catfish & sunfish

# CEQA Checklist

## Addition to Basin Plan: Commercial & Sport Fishing Beneficial Use

Evaluate possible environmental impacts on the following categories:

- Aesthetics
- Agriculture
- Air Quality
- Biological Resources
- Cultural Resources
- Geology & Soils
- Hazardous Materials
- Hydrology & Water Quality
- Land Use & Planning
- Mineral Resources
- Noise
- Population & Housing
- Public Services
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# Addition to Basin Plan: “Sport & Commercial Fishing” Beneficial Use



Environmental Impact?	Impact Significant?	Mitigation Measures

# Addition to Basin Plan: Fish Tissue Objective for Methylmercury

# Potential Fish Tissue Objectives

Option	MMHg Objective for Large TL4 Fish (catfish & bass)	Safe Consumption Amounts for Humans & Implications
1	No action	<ul style="list-style-type: none"> <li>- Varies across Delta</li> <li>- Not protective of wildlife or humans</li> </ul>
2	0.59 mg/kg	<ul style="list-style-type: none"> <li>- One 8 oz. meal every 2 weeks: mix of small, med. &amp; large TL3 &amp; TL4 fish</li> <li>- Not protective of fish-eating wildlife</li> </ul>
3	0.30 mg/kg	<ul style="list-style-type: none"> <li>- One 8 oz. meal every 2 weeks: catfish &amp; bass</li> <li>- Protective of fish-eating wildlife</li> </ul>
4	0.16 mg/kg	<ul style="list-style-type: none"> <li>- One 8 oz. meal per week: catfish &amp; bass</li> <li>- Allows consumption at rates typical for humans in San Francisco Bay</li> </ul>
5		

# CEQA Checklist

## Fish Tissue Objective for MMHg

Evaluate possible environmental impacts on the following categories:

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# Fish Tissue Objective



## Alternatives



Environmental Impact?	Impact Significant?	Mitigation Measures

# Scoping

- Addition of commercial & sport fish beneficial use to Basin Plan: 5 min
- Addition of fish tissue objective for MMHg to Basin Plan: 5 min
- **Implementation options for MMHg & TotHg source reduction: 45 min**
- Other concerns... 5 min

# Purpose of TMDL & Its Implementation Plan:

## Reduce MMHg Levels in Delta Fish

### 3 General Recommendations:

- Control MMHg sources
- Control TotHg sources
- Reduce MMHg exposure to the fish eating public

# Implementation Plan: 3 General Recommendations

## 1. Control Methylmercury Sources

- Conduct studies to characterize & control existing discharge MMHg concentrations and loads.
- “No net increase” in MMHg loads for new projects.

# Implementation Plan: 3 General Recommendations

## 2. Reduce Total Mercury Sources

- Cap all TotHg sources downstream of major dams
- Reduce TotHg entering the Delta by 110 kg/yr to meet SFRWQCB's TMDL allocation for the Delta.

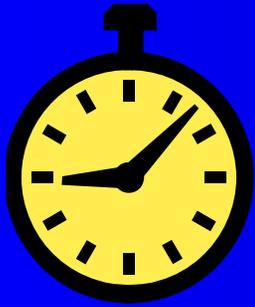
# Implementation Plan: 3 General Recommendations

## 3. Reduce MMHg Exposure to the Fish Eating Public

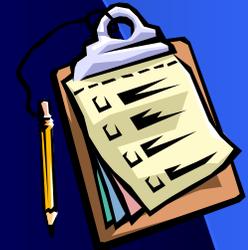
- Fish monitoring to identify temporal & spatial variability.
- Recommend that OEHHA re-evaluate fish advisory.
- Recommend that DHS & Counties develop education & outreach programs.

# Scoping of Implementation Alternatives by Source

- 3-Page Handout:
  - General Recommendations
  - MMHg reduction alternatives
  - TotHg reduction alternatives



# 15 Minute “Working” Break



# Existing MMHg & TotHg Sources

	<u>MMHg</u>	<u>TotHg</u>
● Agricultural	X	
● Atmospheric Dep.	X	X
● Dredge Disposal	X	
● MS4	X↑	X↑
● NPDES	X↑	X↑
● Soil & Sediment	X	X
● Open Channels	X	
● Wetlands	X↑	

# CEQA Checklist Implementation

Evaluate possible environmental impacts  
on the following categories:

- Aesthetics
- **Agriculture**
- Air Quality
- **Biological Resources**
- Cultural Resources
- Geology & Soils
- Hazardous Materials
- Hydrology & Water Quality
- Land Use & Planning
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# MMHg & TotHg Implementation Alternatives

Environmental Impact?	Impact Significant?	Mitigation Measures

# Scoping

- Addition of commercial & sport fish beneficial use to Basin Plan: 5 min
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- **Other concerns... 5 min**

# Other Concerns



# Next Steps

- **Public:**
  - Submit written comments for CEQA Scoping and TMDL technical report by **31 October 2005**.
- **Regional Board Staff:**
  - Compile & evaluate comments from CEQA scoping & other input.
  - Release draft BPA staff report.

# Contact Information

- TMDL Technical Questions?

Contact Michelle Wood

- mlwood@waterboards.ca.gov
- (916) 464-4650

- Basin Plan Amendment Questions?

Contact Melanie Medina-Metzger

- mmedina-metzger@waterboards.ca.gov
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- TMDL technical report is available at:

[http://www.waterboards.ca.gov/central\\_valley/programs/tmdl/deltahg.html](http://www.waterboards.ca.gov/central_valley/programs/tmdl/deltahg.html)