

Meeting will begin shortly

Please use the rename feature to designate your name and affiliation



Note: this meeting will be recorded

CEQA Scoping Meeting & Public Workshop

Delta Mercury Control Program &
Total Maximum Daily Load
Review



24 February 2021

Zoom Logistics

Virtual Meeting Logistics:

- Online meeting only due to COVID-19 pandemic and current state restrictions for public gatherings
- Comments & Questions taken at end of presentation
- If calling into this meeting and wanting to verbally comment, please:
 - *9 to raise your hand
 - **Wait for facilitator to call on you**
 - *6 to unmute
- Chat function has been disabled
- Email RB5S-MercuryComments@waterboards.ca.gov with any technical issues during the presentation

Agenda

- Introduction
- Regulatory context
- Purpose and scope
- Project description
- Delta Mercury Control Program (DMCP) Review topics and scoping potential project alternatives
- Next steps
- Comments and/or questions
 - Email RB5S-MercuryComments@waterboards.ca.gov by 5:00 PM on 26 February 2021 (Extended to 5 March 2021) to submit written questions/comments

Introduction

Goals of Meeting:

- Seek input from public agencies & members of the public on
 - Range of project actions and alternatives
 - Reasonably foreseeable methods of compliance
 - Potential significant and cumulative impacts
 - Mitigation measures
- Fulfill regulatory requirements and responsibilities

Note that no action will be made at this meeting

Regulatory Context

- Water Boards
 - State Water Resources Control Board (State Water Board)
 - 9 Regional Water Quality Control Boards
 - Central Valley Regional Water Quality Control Board (Central Valley Water Board)
 - Mandated to protect beneficial uses of all surface and groundwater
- Regional Authority
 - Federal - Clean Water Act
 - State - Porter-Cologne Water Quality Control Act

Regulatory Context (continued)

- Clean Water Act
 - Designate beneficial uses of surface water
 - Establish water quality criteria to protect those uses
- Porter-Cologne Water Quality Control Act
 - Establishes Regional Water Boards responsibility for protecting surface and groundwater quality
 - Boards establish Water Quality Control Plans (Basin Plans) that include beneficial uses of surface and groundwater

Regulatory Context (continued)

- Basin Plans
 - Sacramento – San Joaquin River Basins & Tulare Lake Basin
 - Beneficial Uses
 - Water Quality Objectives
 - Implementation Plans
 - Monitoring & Surveillance Programs
 - State Policies
- Basin Plan Amendments (BPA) required for changes to Basin Plan

Regulatory Context (continued)

- Basin Plan Amendment Process
 - Tribal Consultation
 - Public Participation
 - Central Valley Water Board adoption through Public Hearing
 - State Water Board approval
 - Office of Administrative Law approval
 - United States Environmental Protection Agency (USEPA) approval

Regulatory Context (continued)

- Public Participation
 - California Environmental Quality Act (CEQA) Scoping Meeting
 - Stakeholder Meetings and Workshops, as necessary
 - Potential Board Workshops
 - Public Comment Periods
 - Response to Comments Received
 - Central Valley Water Board Hearings

Purpose and Scope

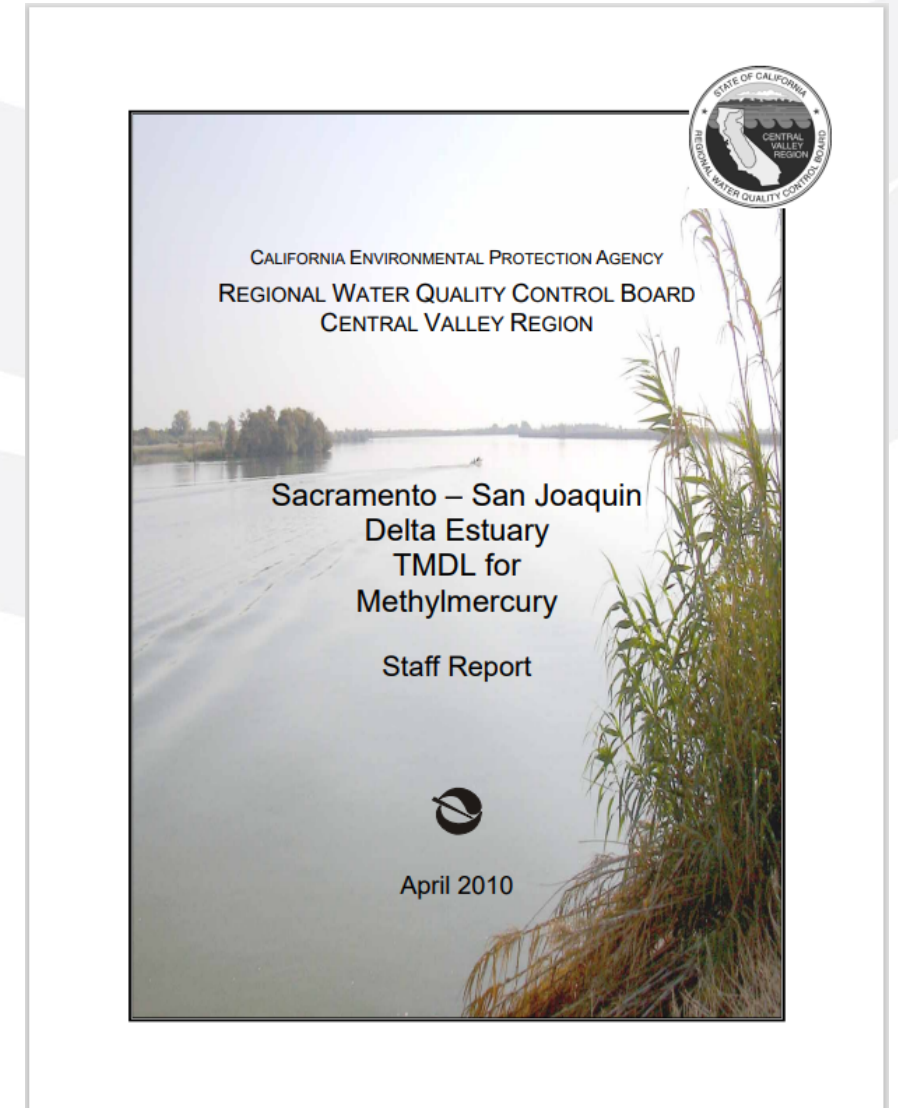
- CEQA requires an environmental analysis of any proposed Basin Plan Amendment
- CEQA Scoping Meetings provide an opportunity for the public to give input on:
 - Potential environmental impacts
 - Possible mitigation measures
 - Possible project alternatives

Purpose and Scope (continued)

- Solicit comments and suggestions from the public regarding a proposal to:
 - Possibly revise the Sacramento – San Joaquin Basin Plan Amendment (Resolution No. R5-2010-0043)
 - Discuss potential options for
 - Phase 2 of the Delta Mercury Control Program
 - Continued mercury exposure reduction initiative
 - Mercury offset strategy

Project Description

- Mercury and Methylmercury sources and concerns
- Conceptual Model
- Maps of areas affected
- DMCP and TMDL
 - Timeline
 - Phase 1
 - Phase 2



Project Description (continued)

- Total Mercury (THg) Sources
 - Gold mining
 - Mercury mining
 - Urban and industrial runoff
 - Atmospheric deposition
 - Agriculture, wetlands, and dredging discharges
 - Other tributary inputs
- Methylmercury (MeHg) concerns
 - Bioaccumulates in food web
 - Developmental neurotoxin
 - Harmful for human and wildlife

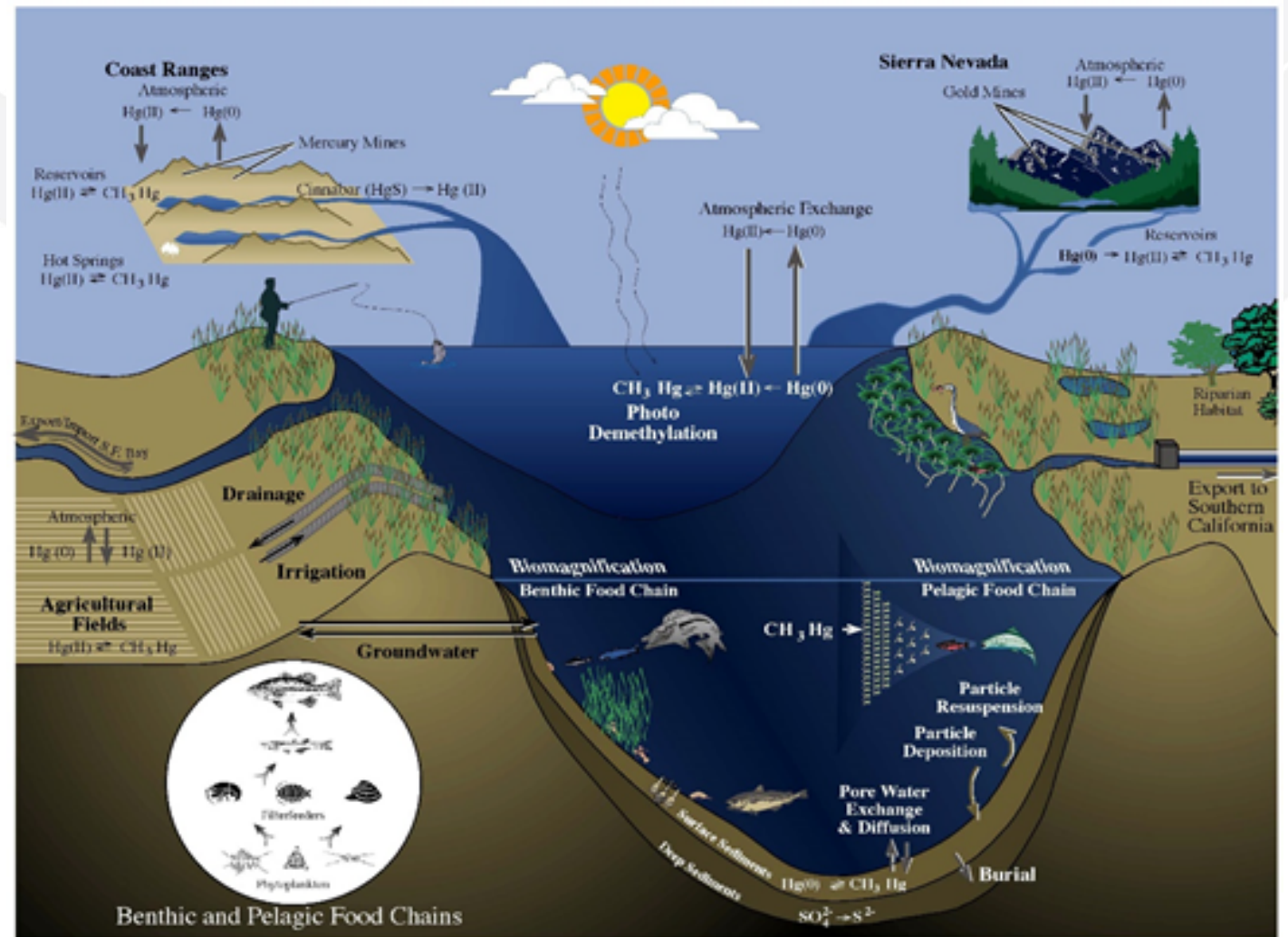
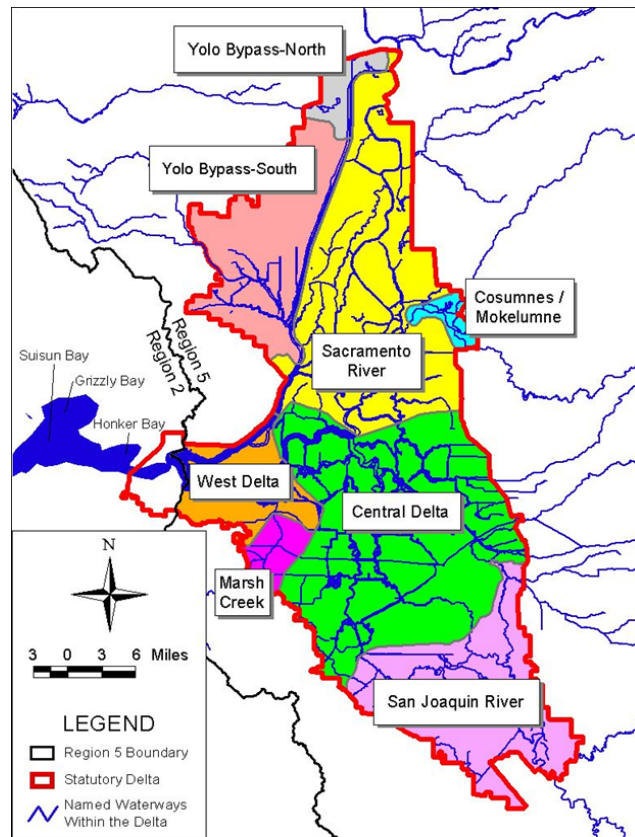


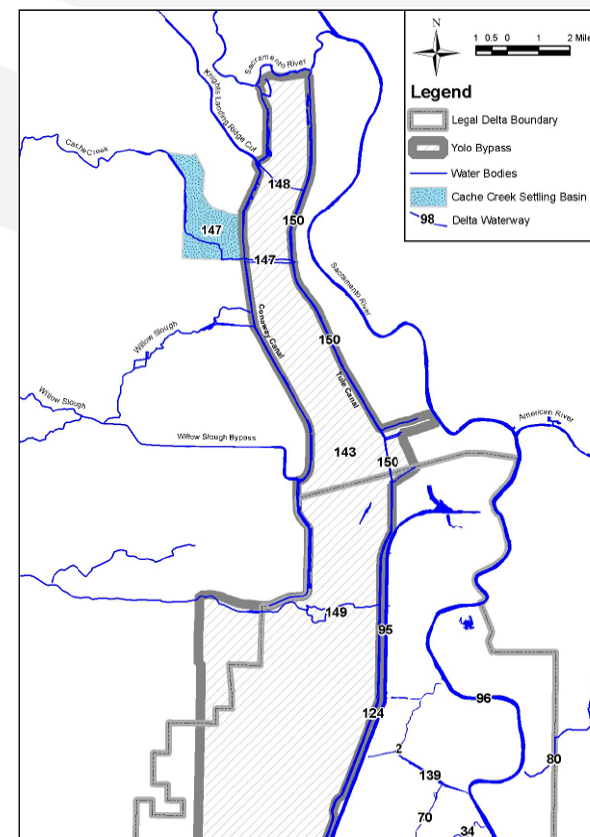
Image source: [Delta Biogeochemistry Group](#)

Project Description (continued)

Map of Sacramento – San Joaquin River Delta Estuary and Yolo Bypass

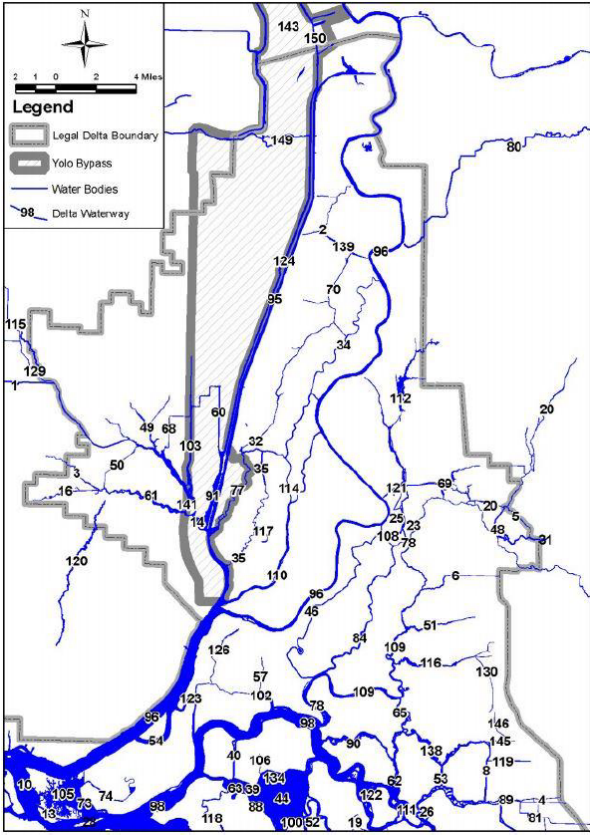


Map of North Yolo Bypass and Cache Creek Settling Basin

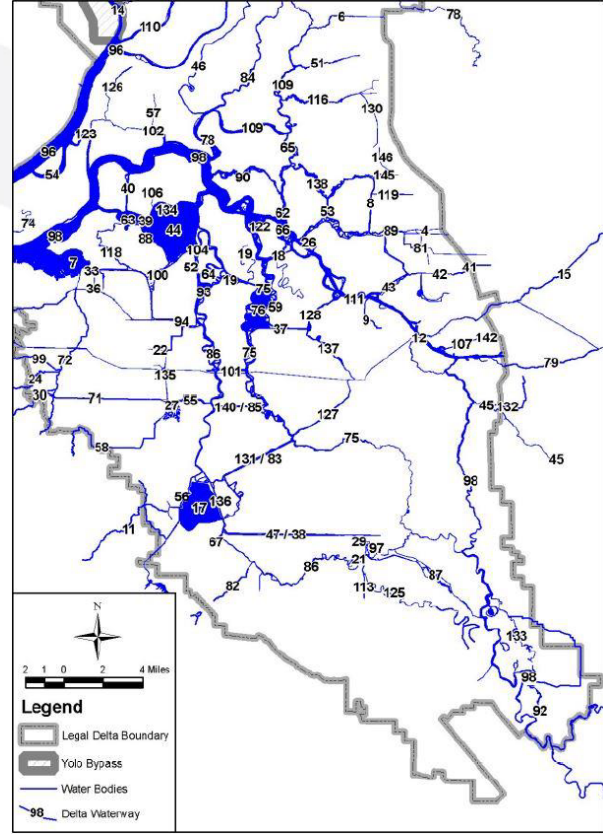


Project Description (continued)

Map of Delta Waterways (North Panel)



Map of Delta Waterways (South Panel)



Project Description (continued)

- Delta Mercury Control Program Timeline
 - April 2010 – Central Valley Water Board adopted Delta Mercury Control Program and TMDL Basin Plan Amendment
 - October 2011 – USEPA approval, Delta Mercury Control Program became effective, and Phase 1 began
 - Currently – Board staff reviewal of Phase 1 and TMDL, possible revision of DMCP
 - October 2022 - Phase 2 begins, if no revision of TMDL, current load and waste load allocations become effective with compliance date of 2030

Project Description (continued)

- Phase 1
 - Control studies and pilot projects conducted to research:
 - Management practices to control MeHg
 - MeHg source control methods
 - Feasibility of dischargers attaining load and waste load allocation
 - Provisions for:
 - Pollution minimization programs
 - Interim mass limits for inorganic THg point sources
 - Controlling sediment-bound mercury
 - Reducing total Hg loading to San Francisco Bay
 - Language for the development of:
 - Mercury exposure reduction program for human consumption
 - Future upstream Hg control programs for major tributaries
 - Mercury offset program

Project Description (continued)

- Phase 1 (continued)
 - Control Studies now complete and being reviewed
 - Ends with Central Valley Water Board:
 - Reviewing Phase 1 requirements
 - Consider
 - Revising the Program and future requirements before starting Phase 2
 - Modifying MeHg goals, objectives, allocations, and/or final compliance date
 - Adopting a mercury offset program
 - Potential public and environmental benefits and adverse impacts
 - Re-evaluate
 - Fish tissue objectives
 - Linkage analysis
 - Attainability of allocations

Project Description (continued)

- Phase 2
 - Begins after review of Phase 1 or October 2022, whichever occurs first
 - Dischargers would
 - Implement MeHg control programs to meet allocations
 - Continue inorganic mercury reduction programs
 - Conduct compliance monitoring
 - Implement upstream control programs
 - Ends in 2030 unless Board modifies implementation schedule and Final Compliance Date

Project Description (continued)

Current step: End of Phase 1

- Board staff will review and **consider**
 - Modification of:
 - Methylmercury goals
 - Site-specific water quality objectives
 - Linkage analysis
 - Potential public and environmental benefits and impacts of attaining allocations
 - Final compliance date
 - Implementation practices and schedules
 - Requirements and schedules for implementing MeHg management practices
 - Creation of a Mercury Offset Program

Project Alternatives

- Evaluation Considerations for Alternatives
 - Policies/Regulation
 - Beneficial Uses
 - Water Quality Objectives
 - Implementation/Monitoring Plans
 - Potential Economic Impacts
 - Potential Environmental Impacts (CEQA Checklist)

Project Alternatives (continued)

- CEQA Environmental Checklist – Appendix G (2020)
 - Aesthetics
 - Agriculture and Forestry Resources
 - Air Quality
 - **Biological Resources**
 - Cultural Resources
 - Energy
 - **Geology and Soils**
 - Greenhouse Gas Emissions
 - Hazards and Hazardous Materials
 - **Hydrology and Water Quality**
 - Land Use and Planning
 - Mineral Resources
 - Noise
 - Population and Housing
 - Public Services
 - Recreations
 - Transportation
 - Tribal Cultural Resources
 - Utilities and Service Systems
 - Wildfire

Project Alternatives (continued)

No Action Alternative

Phase 2 will automatically go into effect in October 2022

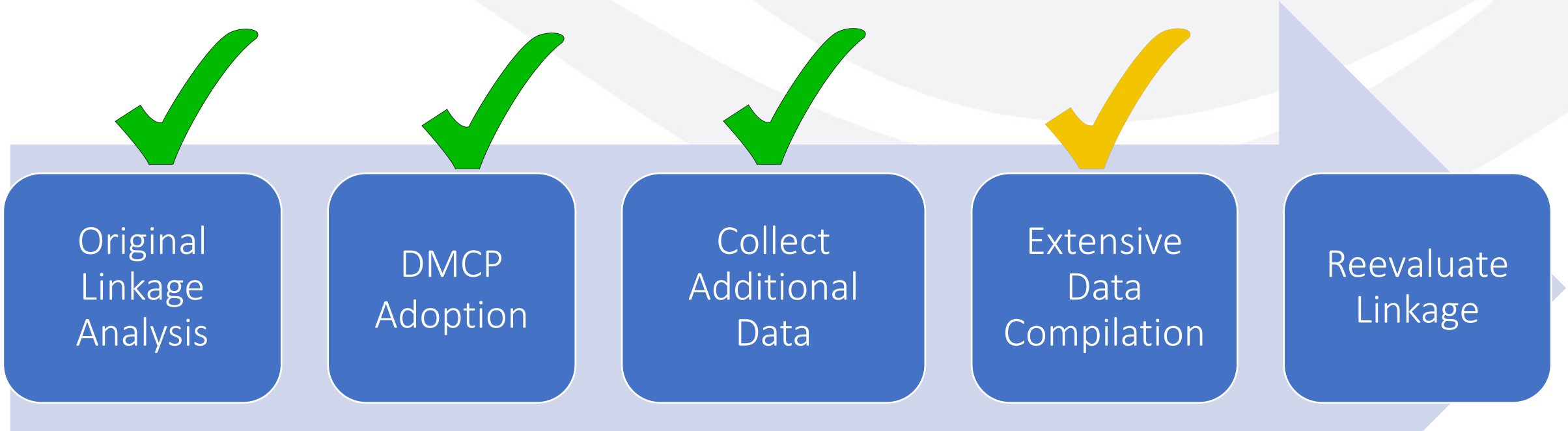
- Uses the current load and waste load allocations found in the TMDL
- Dischargers will need to:
 - Implement MeHg control programs
 - Continue inorganic total mercury reduction programs
 - Reach compliance by 2030
 - Continue compliance monitoring
 - Implement upstream control programs
- Water Boards to develop tributary mercury load reduction strategies

Project Alternatives (continued)

Action Alternatives

- Modification of:
 - MeHg goals
 - Site-specific water quality objectives
 - Linkage analysis
 - Load and wasteload allocations
 - Requirements and schedules for implementing MeHg management practices
 - Potential public and Environmental Benefits/Impacts
 - Final compliance date
- Creation of:
 - Mercury Offset Program

Project Alternatives (continued)



Linkage Reevaluation

Terminology



Hg Fish Tissue Targets

Calculated Hg fish tissue concentrations

Hg concentrations expected to be safe for consumption by humans and wildlife



Hg Water Quality Objectives

Most protective Hg Fish Tissue Targets

2010 Delta Mercury Control Program



Hg Implementation Goals

Std. 350mm Largemouth Bass (LMB) Hg Implementation Goal (0.24 mg/kg)

Aqueous MeHg Implementation Goal (0.06 ng/L)

Fish Tissue Targets

Trophic Level (TL) Group	Consumer of TL Group	Hg Fish Tissue Target (mg/kg)
TL4 Fish (150-500 mm)	Bald eagle	0.31
TL4 Fish (150-500 mm)	Human	0.24
TL4 Fish (150-350 mm)	Osprey	0.26
TL4 Fish (150-350 mm)	River otter	0.36
TL3 Fish (150-500 mm)	Bald eagle	0.11
TL3 Fish (150-500 mm)	Human	0.08
TL3 Fish (150-350 mm)	Osprey & Common merganser	0.09
TL3 Fish (150-350 mm)	Western grebe	0.08
TL3 Fish (50-150 mm)	Double-crested cormorant	0.09
TL3 Fish (50-150 mm)	Kingfisher	0.05
TL3 Fish (50-150 mm)	Mink	0.08
TL3 Fish (50-150 mm)	River otter	0.04
TL3 Fish (<50 mm)	California least tern	0.03
TL3 Fish (<50 mm)	Western snowy plover	0.10

Fish Tissue Targets & Water Quality Objectives

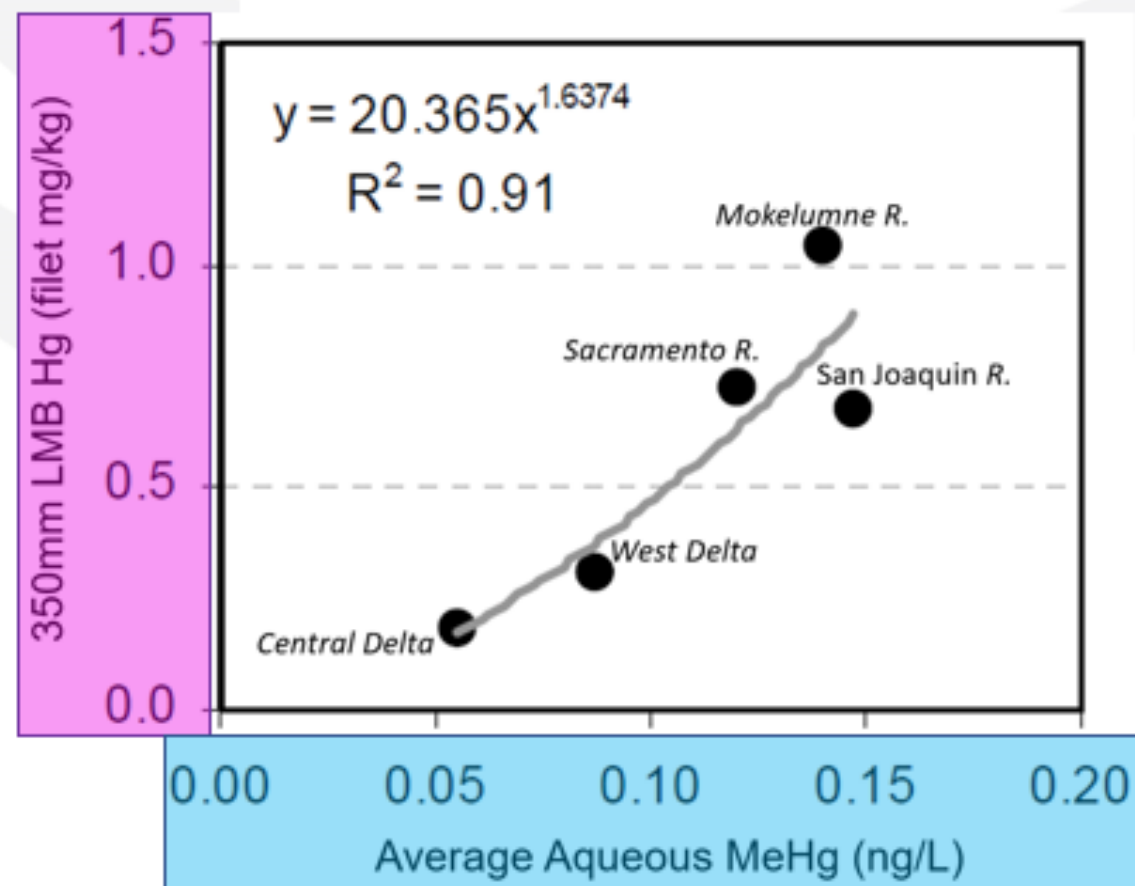
Trophic Level (TL) Group	Consumer of TL Group	Hg Fish Tissue Target (mg/kg)	Equivalent TL4 Fish 150-500mm Hg Concentration (mg/kg)
TL4 Fish (150-500 mm)	Bald eagle	0.31	0.31
TL4 Fish (150-500 mm)	Human	0.24	0.24
TL4 Fish (150-350 mm)	Osprey	0.26	0.33
TL4 Fish (150-350 mm)	River otter	0.36	0.45
TL3 Fish (150-500 mm)	Bald eagle	0.11	0.37
TL3 Fish (150-500 mm)	Human	0.08	0.24
TL3 Fish (150-350 mm)	Osprey & Common merganser	0.09	0.35
TL3 Fish (150-350 mm)	Western grebe	0.08	0.30
TL3 Fish (50-150 mm)	Double-crested cormorant	0.09	0.96
TL3 Fish (50-150 mm)	Kingfisher	0.05	0.62
TL3 Fish (50-150 mm)	Mink	0.08	0.90
TL3 Fish (50-150 mm)	River otter	0.04	0.50
TL3 Fish (<50 mm)	California least tern	0.03	0.38
TL3 Fish (<50 mm)	Western snowy plover	0.10	1.12

Fish Tissue Targets & LMB Implementation Goal

Trophic Level (TL) Group	Consumer of TL Group	Hg Fish Tissue Target (mg/kg)	Equivalent Standard 350mm LMB Hg Concentration (mg/kg)
TL4 Fish (150-500 mm)	Bald eagle	0.31	0.36
TL4 Fish (150-500 mm)	Human	0.24	0.28
TL4 Fish (150-350 mm)	Osprey	0.26	0.36
TL4 Fish (150-350 mm)	River otter	0.36	0.57
TL3 Fish (150-500 mm)	Bald eagle	0.11	0.43
TL3 Fish (150-500 mm)	Human	0.08	0.24
TL3 Fish (150-350 mm)	Osprey & Common merganser	0.09	0.38
TL3 Fish (150-350 mm)	Western grebe	0.08	0.31
TL3 Fish (50-150 mm)	Double-crested cormorant	0.09	1.15
TL3 Fish (50-150 mm)	Kingfisher	0.05	0.73
TL3 Fish (50-150 mm)	Mink	0.08	1.06
TL3 Fish (50-150 mm)	River otter	0.04	0.57
TL3 Fish (<50 mm)	California least tern	0.03	0.42
TL3 Fish (<50 mm)	Western snowy plover	0.10	1.34

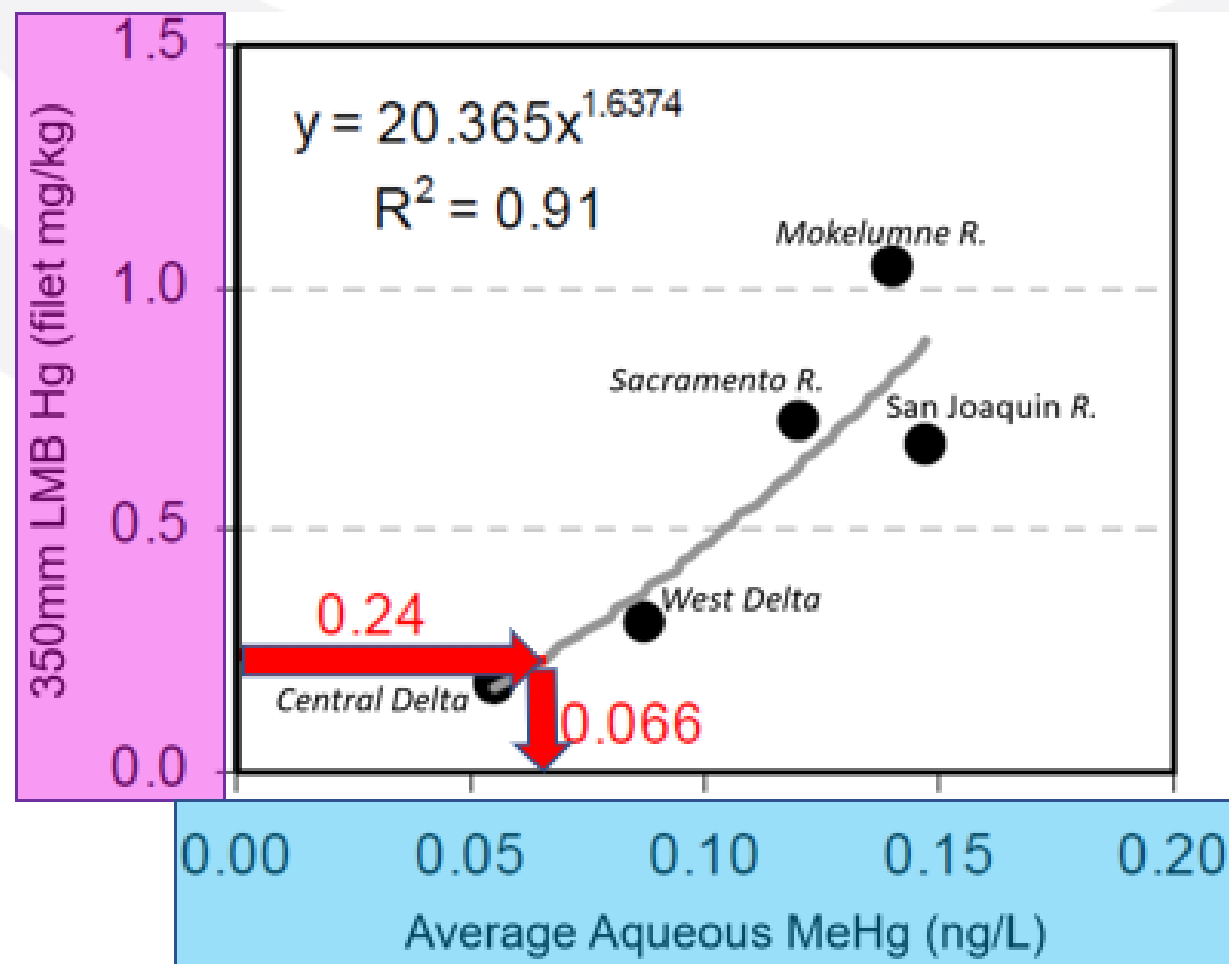
Original Linkage Analysis

- Regression model based on
 - Average aqueous MeHg concentration (x-axis)
 - Standard 350mm LMB Hg concentration (y-axis)



Original Linkage Analysis (continued)

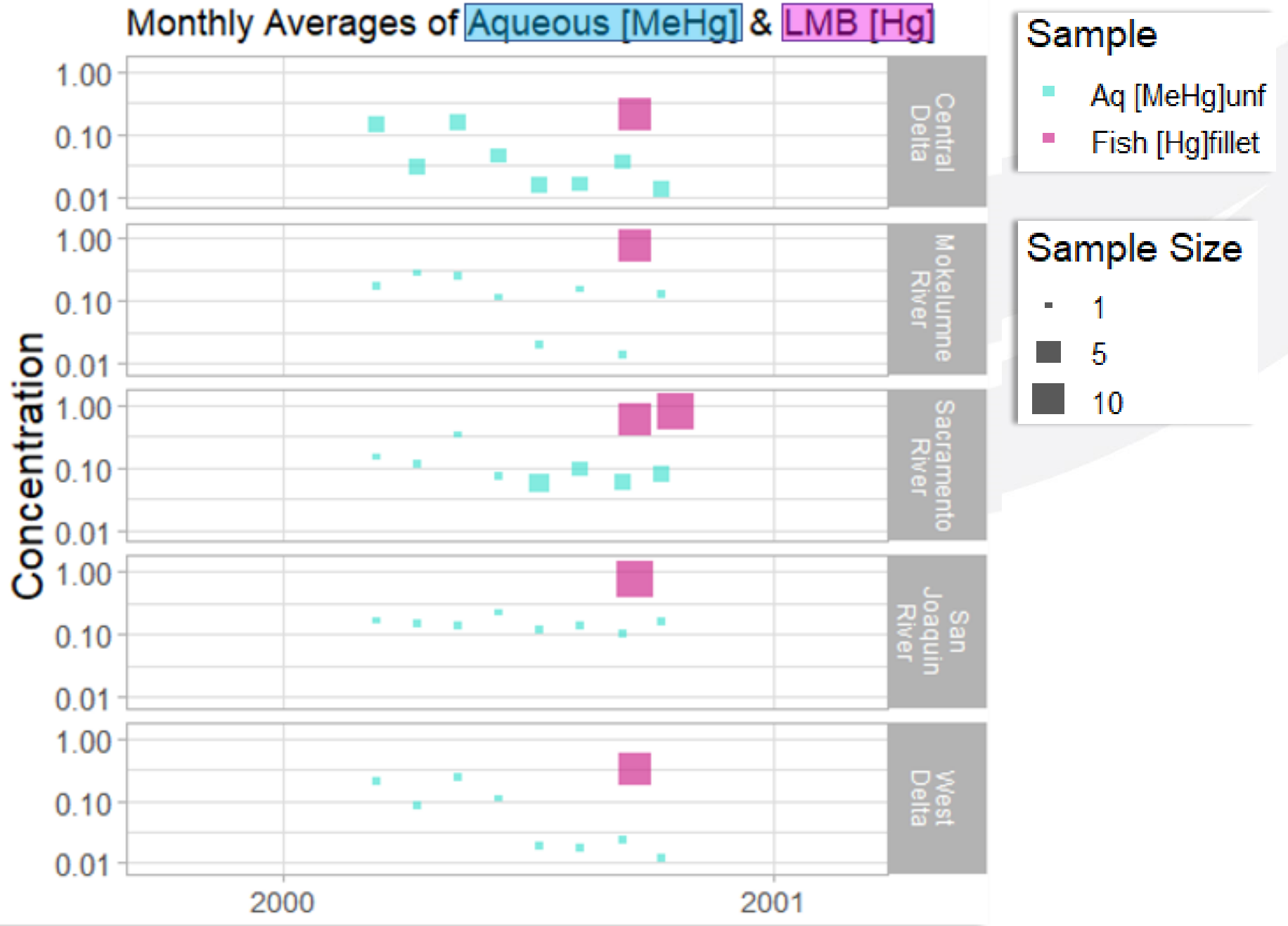
- 0.24 mg/kg LMB Implementation Goal
- Predicted 0.066 ng/L avg. aqueous safe MeHg concentration



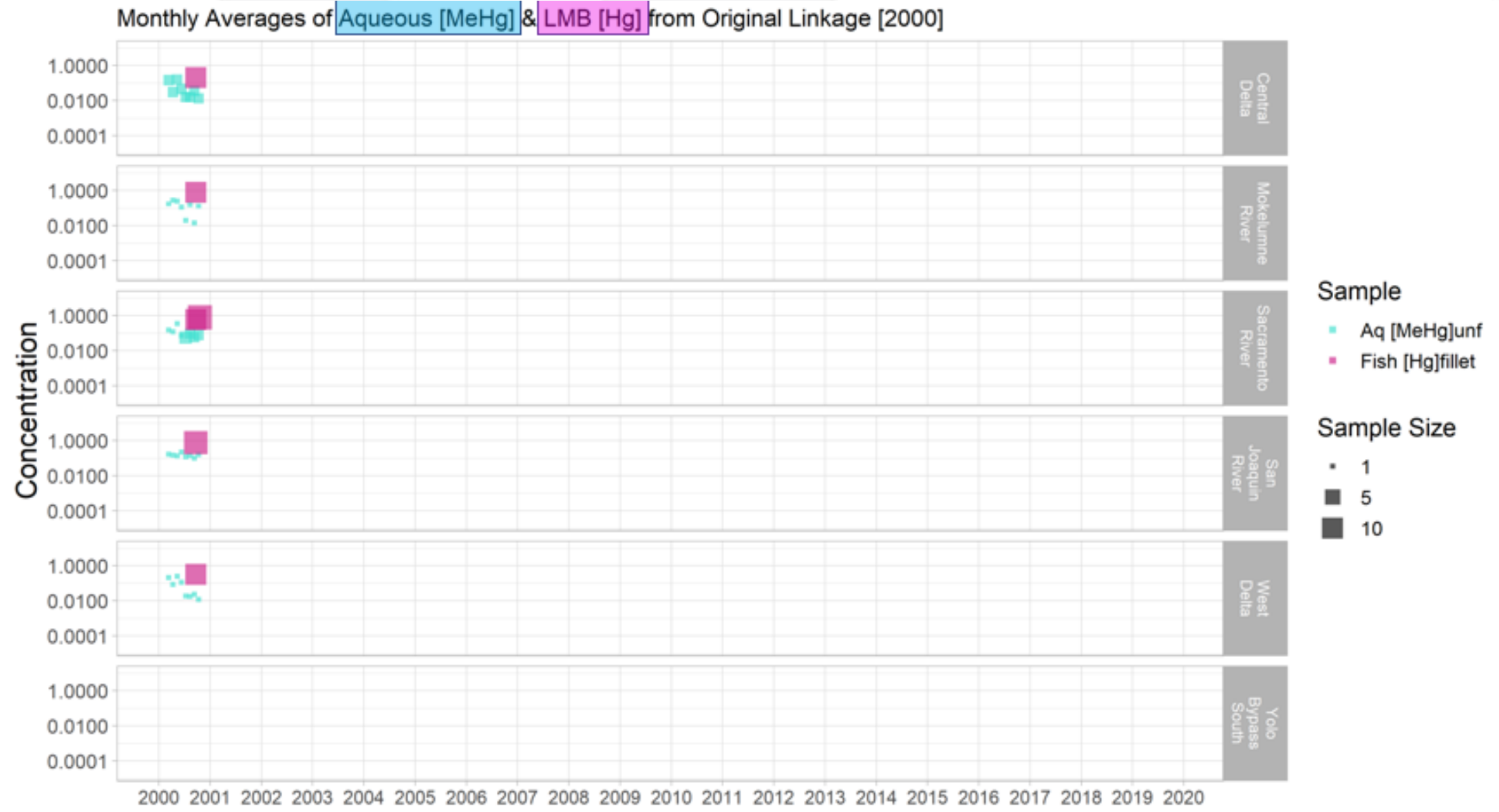
Linkage Analysis Summary

Hg Fish Tissue Targets Trophic Level (TL) Group	Hg Fish Tissue Targets Water Quality Objective (mg/kg)	Standard 350 LMB Hg Equivalent Concentrations (mg/kg)	Standard 350 LMB Hg Implementation Goal (mg/kg)	Aqueous MeHg Predicted Concentration (ng/L)	Aqueous MeHg Implementation Goal (ng/L)
TL4 150-500mm	0.24	0.28			
TL3 150-500mm	0.08	0.24	0.24	0.066	0.06
TL3 < 50mm	0.03	0.42			

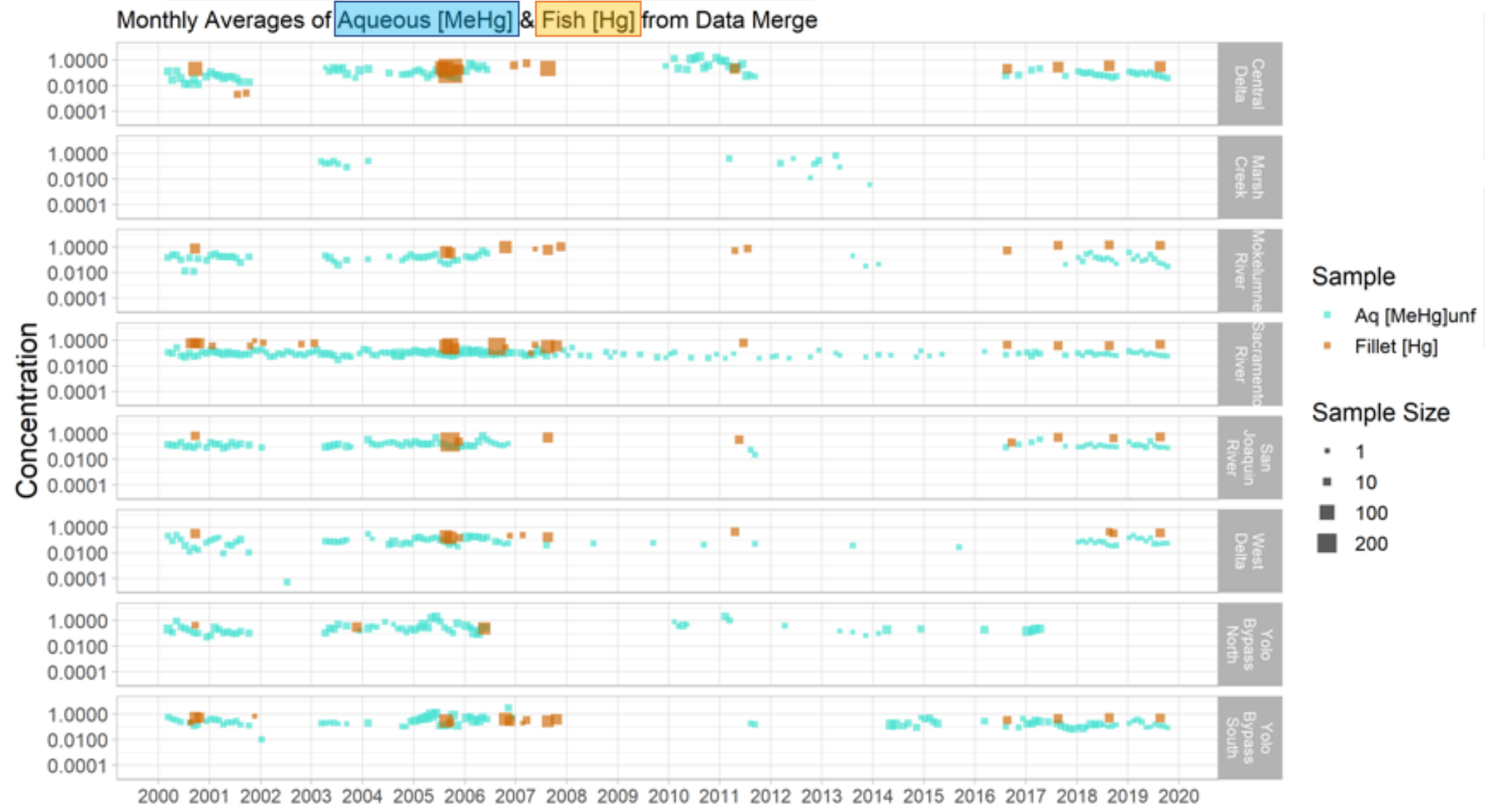
Original Linkage Data



Original Linkage Analysis Data



Available Data After Merging Data Sources



Linkage Alternatives

Original Linkage Methodology

- One data point for each subarea
- Linkage for entire Delta

Potential Modifications

- Multiple years of data for each subarea
- Linkage by Subarea or entire Delta
- Implementation Goals & Allocations
- Statistical analysis tools and methodologies

Implementation Plan Options

Potential Sources

- Municipal Separate Storm Sewer Systems (MS4s)
- National Pollutant Discharge Elimination System (NPDES) Facilities
- Dredge Material Disposal
- Agricultural
- Wetlands
- Open Channels
- Soils in Agricultural, Wetland & Other Land Use Areas with Responsible Parties
- Atmospheric Deposition
- Cache Creek Settling Basin
- Delta Tributary Point Sources
- Delta Tributary Nonpoint Sources

Implementation Plan Options



Delta Mercury Control Program Phase 1 Methylmercury Control Studies Independent Scientific Review

A report to the Delta Science Program

Prepared by:

- Dr. B. Branfireun, Professor. Dept. of Biology, University of Western Ontario, London ON.
- Dr. C. Gilmour, Senior Scientist. Smithsonian Environmental Research Center, Edgewater, MD.
- Dr. C. Knights, Research Scientist. US Environmental Protection Agency, Narragansett, RI.
- Dr. R. Mason, Professor. Dept. of Marine Sciences & Chemistry, University of Connecticut, Groton, CT.
- Dr. C. Mitchell, Assoc. Professor. Dept. of Physical & Environmental Science, Univ. of Toronto Scarborough, Toronto, ON.



Delta MERP Materials

Рекомендации по употреблению рыбы, выловленной в реке Сан-Хоакин
 Для женщин в возрасте 18-45 лет, особенно беременная или кормящая, и детей в возрасте от 1 года до 17 лет

Keu qhia noj cov ntses txhom los tom cov dej Sab Nruab Nruab Teb thiab Sab Qab Teb
 Cov dej ntses txhom los tom cov dej Sab Nruab Nruab Teb thiab Sab Qab Teb
 hauv plaub los tom cov ntses txhom los tom cov dej Sab Nruab Nruab Teb thiab Sab Qab Teb 1-17

魚肉食用指南針對Sacramento河及北部三角洲流域魚類
 包括12號公路以北三角洲的所有水域

18-45歲女性及1-17歲未成年人

<p>每週7份 每週3份 每週2份 (包括鯉魚或鯽魚) 每週1份 (包括鱒魚、白魚或白鱒)</p>	<p>每週7份 每週3份 每週2份 (包括鯉魚或鯽魚) 每週1份 (包括鱒魚、白魚或白鱒)</p>	<p>每週7份 每週3份 每週2份 (包括鯉魚或鯽魚) 每週1份 (包括鱒魚、白魚或白鱒)</p>
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1份的數量多少?
 成人量 未成年量
 每份的數量是這份1.1份的或

8 non-English language translations

需要顧忌的是什麼?
 每份美國的年食量及PCB量
 不要食用其他... 尤其是鱒魚...
 成人: 每份2份或
 未成年: 每份1份
 請勿食用

Slide 16

Implementation Plan Options

Mercury and Methylmercury Load Reductions

Point Sources

During Phase 2, dischargers shall meet final effluent limitations and implement methylmercury control programs and continue inorganic (total) mercury reduction programs

- NPDES Permitted Facilities
- NPDES Permitted Urban Runoff Discharges

Nonpoint Sources

Implement reasonable, feasible actions to reduce sediment in runoff with the goal of reducing inorganic mercury loading

Current load allocations for: agricultural drainage, atmospheric wet deposition, open water, tributaries, urban nonpoint, wetlands

Implementation Plan Options

Control Studies

Methylmercury Control Studies and key findings from Review Panels 1 & 2 will be used to evaluate effective implementation options.

Mercury Exposure Reduction Program

- Stakeholder advisory group
- Outreach and education projects
- Developing and posting signs
- Creating multilingual educational materials

Program not currently funded

Eat Fish Safely Central and Southern Delta

Eat More	Eat Less	Do NOT Eat
 <p>Women 18-45 Children 1-17</p> <p>2 servings a week</p>	 <p>Women 18-45 Children 1-17</p> <p>1 serving a week</p>	 <p>Women 18-45 Children 1-17</p>
<p>Men age 18+ Women age 46+</p> <p>5 servings a week</p>	<p>Men age 18+ Women age 46+</p> <p>2 servings a week</p>	<p>Men age 18+ Women age 46+</p> <p>Striped bass— 2 servings a week OR Sturgeon—1 serving</p>
<p>Crayfish</p> <p>Bluegill or other sunfish</p> <p>American shad</p> <p>Catfish</p> <p>Asiatic clam</p> <p>Steelhead trout</p>	<p>Bass</p> <p>Sucker</p> <p>Crappie</p> <p>Carp</p>	<p>Striped bass</p> <p>White sturgeon</p>

Some fish have high levels of mercury which can harm the brain, especially in unborn babies and children.

Learn more at www.oehha.ca.gov/fish



Tribal Beneficial Uses (TBUs)

Tribal Traditional and Culture (CUL)

Uses of water that support the cultural, spiritual, ceremonial, or traditional rights or lifeways of California Native American Tribes, including, but not limited to: navigation, ceremonies, or fishing, gathering, or consumption of natural aquatic resources, including fish, shellfish, vegetation, and materials.

Tribal Subsistence Fishing (T-SUB)

Uses of water involving the non-commercial catching or gathering of natural aquatic resources, including fish and shellfish, for consumption by individuals, households, or communities of California Native American Tribes to meet needs for sustenance.

Separate process to add definitions to Basin Plans

Separate process to consider TBU designations

Stay current on processes via [Central Valley Water Board's website and Lyris Listserv](#)

Project Alternatives (continued)

Offset Program

- Provide flexible ways of meeting regulatory requirements while also improving the environment
- Encourage earlier and larger load reductions to the Delta
- Be based on the 6 key principles outlined in the DMCP
- Alternatives to direct load credits may be developed
- Not a substitute for reasonable actions to address local impacts

Project Alternatives (continued)

Offset Program - Questions Under Consideration

- Is there a need for an Offset Program (e.g. will load and wasteload allocations be achieved)?
- Where would the offset program be applicable?
- Where can an offset project be located with respect to the proponent of the offset project?
- What forms of mercury in discharges can be used for an offset?
- How much offset credit will be generated from the completion of an offset project?
- Will there be a disparate or disproportionate pollution burden as a result of an offset project?

Potential Public and Environmental Benefits/Impacts

- Habitat restoration projects
- Flood protection
- Water supply

Attainability of Targets and Allocations

Attainability of the allocations will be re-evaluated based on the findings of Phase 1 control studies and other information.

Final Compliance Date

Methylmercury load and waste load allocations for dischargers in the Delta and Yolo Bypass shall be met as soon as possible, but no later than 2030, unless the Regional Water Board modifies the implementation schedule and Final Compliance Date.

Next Steps

- CEQA Scoping**
 - Tribal Consultation (Completed)
 - Public CEQA Scoping Meeting
 - Public CEQA Scoping Comment Period
- Control Program and TMDL staff report Development
- Scientific Peer Review (Health and Safety Code § 57004)
- Release SED
- Public Comment Period
- Regional Board Hearing and Adoption
- State Board Hearing and Approval
- Office of Administrative Law Approval
- USEPA Approval (Notice of Determination)



Comments and/or Questions

Oral Comments:

Zoom – use ‘Raise Hand’ function

Phone – *9 to raise and lower your hand

Wait for facilitator to call on you

*6 to unmute and mute after comment

Submit written comments via email by 5:00 PM on Friday, February 26, 2021 (Extended to March 5, 2021) to: RB5S-MercuryComments@waterboards.ca.gov

[Project Website and Lyris List](#)