Strategic Plan for Reducing Risk of Mercury Contamination in the Sacramento River Watershed

March 13, 2002
Presentation’s Purpose

• Describe DTMC comments (written, oral, workshop, workgroup)
• Review minutes of linkage analysis / Decision Support System workshop
• Discuss anticipated direction for Plan
• Discuss next steps.
Management Question #1

What are the existing health risks of mercury to humans and wildlife in the SRW?

Hypothesis: Humans and wildlife are (not) impacted by mercury concentrations found in fish of the SRW.
Management Question #2

How do mercury loads and ambient concentrations affect mercury concentrations in fish?

**Hypothesis:** Mercury concentrations in water are (not) directly attributable to current loads.

**Hypothesis:** Mercury concentrations in fish tissue are (not) directly related to mercury concentrations in water or sediment.

**Hypothesis:** Controlling sources reduces risk more than controlling methylation processes (or vice-versa).
Management Question #3

What level of certainty do we have in our ability to achieve targets?

Hypothesis: Existing knowledge regarding sources, fate, transport and uptake is (not) adequate to predict outcomes of control measures.
Management Question #4

What safe level of fish consumption by sensitive consumers (children and child-bearing women) is desired?

Hypothesis: Consumption rates of all fish species should (not) be unlimited.
Management Question #5

Where should pilot projects be carried out to reduce the risk of methylmercury contamination in the watershed?

Hypothesis: Reductions of specific mercury sources will (not) provide greater benefit than others.
Linkage Analysis

Objective: Document the connection between control measures and attainment of targets.

Components:
- Source loadings
- Transport and transformations
- Biouptake
- Risk reduction
Linkage Type 1: Simplified Case

1. Single Source

Closed Pipe

Fish Tissue

2
Linkage Type 2: Realistic Case

Multiple Source Types and Locations

1. Hg Load in Water

2. Transport & Transformation

3. Ambient MeHg

4. Fish Tissue

5. Risk

Biouptake
Possible Linkage Relationships

- **Linear 1:1**
  
- **Linear Other**
  
- **Non-linear**
  
- **None**
Risk Evaluation

- Fish consumption studies
- Wildlife study
- Exposure studies
Pilot Remediation Projects

- Use the DSS to identify best areas
- Identify specific project sites
- Investigate feasibility issues
  - BMP options, effectiveness
  - Technical issues (road access, monitoring)
  - Legal issues (property access, liability)
  - Funding options
Research and Monitoring

- BMP effectiveness (at pilot project sites)
- Continue trend and source monitoring
- Study individual watersheds
- Quantify source loadings (springs, groundwater, atmospheric, native soils, in-stream leaching)
- Quantify transformation processes (wetlands, reservoirs, hydrologic extremes, local atmospheric transport)
Recommendations for Outreach

- DHS consumption survey
- Support “Good Samaritan” legislation
- Web site
- Traveling exhibit
- Other tools (brochures, fact sheets, press releases)
Schedule

- Finalize peer review draft – mid April
- Incorporate peer review comments – June
- Review CALFED reports/Plan – August
- Final draft for review – September
- Final report – December