

**Regional Water Quality Control Board
Los Angeles Region**

**Surface Water Ambient
Monitoring Program**

FY 2005/06 Workplan

January 31, 2006

1. Introduction

SWAMP plans to implement a statewide monitoring program in 2007 to focus on assessing the human health risk associated with fish consumption from lakes and reservoirs throughout the state. The Los Angeles Region plans to dedicate our entire FY 05-06 allocation of \$200,000 towards assessing lakes and reservoirs in Region 4 via the same protocols employed for the statewide program. Given the manageable number of lakes in our region that support fishing and consumption, we plan to conduct monitoring in each of the approximately 30 lakes that meet these criteria (rather than relying upon a probabilistic approach that forms the basis for the statewide design). However, consultation with a statistician (Don Stevens) suggests that our sampling effort will contribute directly to the statewide design and will allow improve the precision of the statewide estimates.

During the first several years of SWAMP, Region 4 only conducted bioaccumulation sampling to evaluate human health risks in one lake (Lake Machado in the Dominguez Channel Watershed in 2002). None of our other lakes have been assessed for this beneficial use since 2000, when the Toxic Substances Monitoring Program ended.

2. Goals and Objectives/Assessment Questions

The primary goal of the proposed Region 4 lake/reservoir monitoring program will be to evaluate the status of the fishing beneficial use throughout the region with respect to bioaccumulation of toxic pollutants. This goal will be achieved by answering the following questions:

1. What are the extent and location of water bodies with sufficient evidence to indicate that the fishing beneficial use is at risk due to pollutant bioaccumulation?
2. What are the extent and location of water bodies with some evidence indicating that the fishing beneficial use is at risk due to pollutant bioaccumulation?
3. What are the extent and location of water bodies with no evidence indicating that the fishing beneficial use is at risk due to pollutant bioaccumulation?
4. What proportion of lakes and reservoirs in region 4 fall within the three categories defined in questions 1, 2 and 3?
5. How does the proportion of lakes and reservoirs in region falling within the three categorized defined in questions 1, 2 and 3 compare to other regions and to the state as a whole? (note: this is contingent upon successful implementation of the statewide monitoring program design)

A future goal of the monitoring program will be to assess trends in the impact of bioaccumulation on the fishing beneficial use throughout the region. This goal

will be achieved by answering the question: Are water bodies improving or deteriorating with respect to the impact of bioaccumulation on the fishing beneficial use? We would expect to address this question by resampling some or all of the lakes and reservoirs in our region at a future date, perhaps 5-10 years after the 2007 sampling effort.

Another future goal of the monitoring program would be to evaluate sources and pathways of bioaccumulative pollutants impacting the fishing beneficial use. We do not believe that this issue can be addressed within the current budgetary constraints of SWAMP. However, once we have assessed all of our lakes and reservoirs, it may be possible to design a more focused study to address a smaller number of lakes and reservoirs that pose a significant human health risk. The same would be true for providing monitoring information needed to evaluate the effectiveness of management actions in reducing the impact of bioaccumulation on the fishing beneficial use.

3. Monitoring Design

We plan to conduct bioaccumulation sampling in each of the 31 lakes and reservoirs within our region that support significant sportfishing and consumption of fish. These lakes and reservoirs are listed in the following table:

LAKE/RESERVOIR	WATERSHED
Lake Casitas	Ventura
Lake Piru	Santa Clara
Pyramid Lake	Santa Clara
Castaic Lake	Santa Clara
Castaic Lagoon	Santa Clara
Lake Hughes	Santa Clara
Elizabeth Lake	Santa Clara
Harbor Lake (Lake Machado)	Dominguez
Malibou Lake	Santa Monica Bay
Westlake Lake	Santa Monica Bay
Lake Sherwood	Santa Monica Bay
Hansen Lake	Los Angeles River
Sepulveda Lake	Los Angeles River
Echo Lake	Los Angeles River
El Dorado Lakes	Los Angeles River
Lincoln Park Lake	Los Angeles River
Silver Lake Reservoir	Los Angeles River
Toluca Lake	Los Angeles River
Ken Hahn Park Lake	Los Angeles River
Hollenbeck Park Lake	Los Angeles River
Belvedere Park Lake	Los Angeles River
Macarthur Park Lake	Los Angeles River
Balboa Lake	Los Angeles River
John Ford Park Lake	Los Angeles River
Peck Road Water Conservation Park	Los Angeles River
Alondra Park Lake	Los Angeles River

Legg Lake	San Gabriel River
Puddingstone Dam and Reservoir	San Gabriel River
Santa Fe Reservoir	San Gabriel River
San Gabriel Reservoir	San Gabriel River
Crystal Lake	San Gabriel River

We hope to collect at least 2 species per lake for bioaccumulation sampling and analysis. The primary target species for each lake will be largemouth bass and carp or catfish/bullheads. Secondary target species for each lake would be any species of crappie/sunfish and rainbow trout, where present. We expect to analyze one composite per species per lake – each composite would be comprised muscle fillets from a target number of at least 5 individuals (except for very large specimens, such as carp, where the minimum target number would be 3, and for smaller species, where more individuals are required to ensure that adequate tissue volumes are available for the analyses). Ideally, fish for each composite will be collected from multiple representative areas within each lake or reservoir and each individual will exceed the minimum size that sport fishermen legally can catch and retain (however, it is possible that smaller individuals will be collected and analyzed if we are unable to catch a sufficient number of legal-size individuals).

For the Statewide monitoring program, the proposed plan is to analyze the predator species composite (e.g., largemouth bass) for mercury and to analyze the lower trophic level species composite (e.g., carp or catfish) for chlorinated pesticides and PCBs. For the Region 4 samples, we propose to analyze both species composites for mercury and for chlorinated pesticides and PCBs. We are particularly interested in knowing whether largemouth bass have undesirable levels of chlorinated organics and PCBs, given the prevalence of these chemicals throughout our region.

We view this monitoring effort as a screening survey. Our primary goal is to evaluate our lakes and reservoirs and determine which lakes/reservoirs and what percentage within the region fall into high risk, moderate risk and low risk categories with respect to the threat posed to human health via consumption. The results of the screening study will allow us to focus on high, and possibly moderate risk, lakes/reservoirs for follow-up studies to perform more detailed and more costly risk assessments to determine whether fish advisories are warranted.

Tissue concentrations of these pollutants will be compared to Office of Environmental Health Hazard Assessment and/or United States Environmental Protection Agency guidelines for human health protection. If tissue concentrations exceed these guidelines, we would consider listing the lakes or reservoirs on the 303(d) list of impaired waterbodies and/or conduct follow-up work to obtain additional samples with the goal of obtaining sufficient data to perform a risk assessment according to Office of Health and Hazard Assessment

protocols. If tissue concentrations approach the guidelines (e.g., within 75%, or some other specified level, of the guideline threshold), we plan to conduct follow-up work to assess the extent of the contamination problem and determine whether a fish advisory is warranted for high risk lakes and reservoirs identified during the screening study.

4. Implementation

We anticipate that fish will be collected from each of our 31 lakes by California Department of Fish and Game (DFG) staff during spring/summer of 2007. Samples will be collected and analyzed in accordance with the QAPP developed by DFG. Since DFG has not yet established sampling and analysis costs for the statewide bioaccumulation sampling program and we do not know how many species of interest will be collected from each lake, at the present time we cannot determine the precise funding level that will be required to complete our proposed monitoring program. However, there is a good chance that we will require additional funding to complete sampling and analysis for all 31 lakes. If that is the case, we plan to leverage other studies or utilize funds from our 2006/07 funding allocation to make up the difference.

5. Data Analysis and Reporting

We plan to compare fish tissue concentrations measured for each species and each lake to OEHHA screening thresholds for human health risk or other thresholds developed for use by the Statewide monitoring program. Results will be reported as part of the final report from the Statewide monitoring program. However, we may also issue a separate report focusing on the Los Angeles Region.