



Media Release

State Water Board Stream Pollution Report Shows Trends in Chemical Contamination, Toxicity

**For Immediate Release:
Nov. 19, 2014**

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Detections and concentrations of pyrethroid pesticides are increasing in California stream sediments, according to a new report by the Stream Pollution Trends Monitoring Program of the State Water Resources Control Board.

The program is a statewide effort to measure trends in pollution levels and toxicity in major California watersheds. The latest report, "Trends in Chemical Contamination, Toxicity and Land Use in California Watersheds," summarizes results from the first five years of annual surveys assessing stream pollution concentrations and how they are affected by land use.

According to the report, which summarized data from 2008 to 2012, pyrethroid pesticides showed an increasing trend in all watersheds, but most significantly in urban watersheds.

Pyrethroids are the active ingredients in many currently used pesticides available to urban consumers in the United States, and are also widely used in agriculture. Pyrethroid-based pesticides replaced organophosphate pesticides when the use of organophosphates was dramatically reduced. They are widely used by professional residential pest control firms as well as by consumers. Many are extremely toxic to aquatic organisms, and are a known endocrine disruptor. Many may be carcinogenic, according to the U.S. EPA.

Chlorinated compounds such as DDT and PCBs declined over the five years, according to the report, as did detections and concentrations of organophosphate pesticides in sediment. However, DDT and PCBs continue to be of concern in California because of their potential to bioaccumulate. While concentrations in fish do not often exceed thresholds of concern, fish consumption advisories have been issued due to these contaminants for lakes, rivers, bays, and coastal areas. Concentrations of hydrocarbons, flame retardants and selected metals remained relatively constant.

The Stream Pollution Trends Monitoring Program (SPoT) is aimed at understanding long term trends of watershed contamination and associated toxicity. The program investigates the impacts of land use on water quality, helps prioritize water bodies in need of water quality management, and evaluates the effectiveness of management programs designed to improve stream health.



The data provides a statewide perspective on the impact of pollution on stream health and allows local and regional water quality managers to evaluate how conditions in their streams compare to those in other California watersheds.

The SPoT program measures contaminant concentrations and toxicity in sediments that accumulate in the lower reaches of large watersheds. In 2012, samples were collected from 100 of the nearly 200 major hydrologic units in California. Sediment samples are collected once per year when streams return to base flow conditions after the high flows that carry pollutants washed from watershed surfaces during storms.

Sediments are monitored because the majority of contaminants entering streams accumulate in sediments. Each sample is analyzed for industrial compounds, pesticides and metals, and is tested for toxicity to a resident aquatic crustacean, the amphipod *Hyalella azteca*. Additional toxicity test species and contaminant classes are being addressed in future surveys as SPoT monitoring proceeds. Results are compared across watersheds throughout the state, and pollutant concentrations are compared to land use and other human activities.

The pesticides and some of the other pollutants identified in the report are considered non-point pollution sources, meaning that they are not generated at a single source, such as a manufacturing plant or sewer outfall. The State Water Resources Control Board has programs in place to reduce non-point pollution sources.

For more information on the NPS program, [visit](#):

To view the SPoT report, [visit](#):

To read a summary of the findings, [visit](#):

The SPoT program is funded through the State Water Board's Surface Water Ambient Monitoring Program (SWAMP).

For more information on SWAMP, [visit](#):