STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (Jan O'Hara)
MEETING DATE: March 9, 2011

ITEM**:** **8**

SUBJECT: **Urban Creeks Pesticide Toxicity TMDL - Implementation Status Report**

CHRONOLOGY: November 2005 – Board adopted TMDL
May 2007 – U.S. EPA approved TMDL
August 2009 – Last status report to the Board

DISCUSSION: This is a status report on implementation of the Urban Creeks Diazinon and Pesticide-Related Toxicity Total Maximum Daily Load (TMDL). We summarize recent monitoring results and important actions taken by parties across all levels of government towards reducing the adverse water quality impacts of pesticides.

Although we continue to find toxicity in urban creeks related to pyrethroid pesticides, which have largely replaced urban uses of diazinon, we are finally seeing positive changes in the regulatory process. U.S. EPA is headed in a direction where aquatic impacts will be better evaluated at the time pesticides are registered for use in the United States; the California Department of Pesticide Regulation (DPR) is preparing a regulatory action to limit the use of some pyrethroid pesticides in urban areas; and municipalities continue to make progress in managing their use of pesticides. For the first time, we can envision the day when pesticides that are taken off market are not replaced by others with similar or greater toxicity to aquatic organisms.

Pesticide Uses of Concern to Urban Stream Water Quality[1]: Pyrethroids are a class of pesticides that are linked to widespread toxicity in urban creeks, and they remain the most commonly applied insecticides in California urban areas, far exceeding the combined sales of other pesticides we track for water quality impacts. The largest use of pyrethroids is application by professionals around building exteriors to control ants.

Fipronil, which is highly persistent and toxic to aquatic organisms, is used in relatively small quantities, but its use has almost doubled since 2003. We are concerned that fipronil could replace pyrethroids in the urban marketplace and become the next source of toxicity in our water bodies.

Water Quality and Impairment Listings: Toxicity related to pyrethroids is being observed in water bodies across the State. The Water Board's Surface Water Ambient Monitoring Program looked at nine years of statewide monitoring data and found that half of all creek sites showed toxicity and pyrethroids were the most common cause. DPR reviewed 10,000 samples collected in urban areas, the majority from storm drain outfalls, and found

[1] Urban pesticides use information and monitoring data can be found on the Urban Pesticides Pollution Prevention Project website at www.up3project.org/.

pyrethroids were detected in 30% of water samples and 46% of sediment samples.

In 2010, Kirker Creek in eastern Contra Costa County was added to the State's Clean Water Act Section 303(d) list of impaired water bodies due to sediment toxicity caused by pyrethroids. We anticipate more pyrethroid-related impairment listings in the next 303(d) evaluation due to the large amount of pyrethroids used in urban areas, especially the highly-toxic pyrethroid compound, bifenthrin. That said, we are hopeful that we will not have to develop TMDLs for pyrethroids if implementation of the Urban Creeks Pesticide Toxicity TMDL resolves the pyrethroid-caused impairments.

U.S. EPA Implementation: U.S. EPA continues its review of registered pesticides and its effort to align the methods used by its Office of Water and its Office of Pesticide Programs (OPP) to characterize ecological effects of pesticides, including adverse aquatic impacts. As a result of this effort, we expect U.S. EPA will better evaluate potential impacts to aquatic resources when OPP registers pesticides for use. A scientific review of the resulting methodology is expected this fall. We submitted comprehensive comments on this project and on U.S. EPA's review and reregistration of specific pesticides, including pyrethoids (bifenthrin, cyphenothrin, cyfluthrin, lambda- and gamma-cyhalothrin), esfenvalerate, copper, carbaryl, triclosan, and piperonyl butoxide (a pesticide synergist).

Our comments and comments submitted by municipalities and wastewater dischargers across California are having a positive effect. OPP had this encouraging response to comments on the bifenthrin registration review workplan: "*OPP acknowledges the costs of non-compliance with the Clean Water Act and is making every effort to ensure that it adequately identifies and mitigates ecological risks from use of bifenthrin and other pyrethroids during registration review.*" As part of its reregistration efforts, U.S. EPA has changed the label instructions for residential use of pyrethroid pesticides. There are over 2,000 products that qualify for the new label language that, among other restrictions, disallows use during rain events and spraying directly into drains.

California Department of Pesticide Regulation Implementation: DPR is about to propose regulations to protect surface water that would limit applications of some pyrethroids in urban areas. The proposed regulations provide clarifications to and expand upon the U.S. EPA label changes and include restrictions on applications near aquatic habitat and to hard-surface areas, such as driveways and sidewalks. Further restrictions on bifenthrin applications are also being considered. These regulations and future adaptations could significantly reduce the runoff of pyrethroids, have a positive impact on urban creeks, and negate the need for pyrethroid TMDLs.

DPR continues with the lengthy pyrethroid reevaluation process, which is still important because the regulations discussed above would not completely mitigate water quality impacts, and do not address agricultural uses. This effort has also opened communication channels with State and Regional Water Board

staff and other stakeholders, and we plan to explore more collaborative approaches to monitoring water quality for pesticide-related toxicity.

Municipality Implementation: Through the Bay Area Stormwater Management Agencies Association, municipalities have participated in the regulatory efforts described above, as required under the TMDL implementation strategy and the Municipal Regional Stormwater Permit. The Permit also requires municipalities to undertake other TMDL implementation actions, including:

- Adopt an integrated pest management[2] (IPM) policy or ordinance;
- Train employees to follow the IPM policy;
- Require contractors to carry out the IPM policy; and
- Conduct outreach to the public and to pest control operators.

We recently evaluated municipalities' compliance with these requirements based on their 2010 Annual Reports, and found that most municipalities have an IPM policy. However, most IPM policies need improvements, such as fully committing to IPM throughout the municipality and clarifying that pesticides with known water quality impacts should only be used as a last resort. Effective implementation of IPM by municipalities also sets a positive example for their residents and businesses. Municipalities are implementing extensive public outreach but little outreach and education related to professional applicators (pest control operators). The most toxic and widely used pesticides are applied primarily by professionals. We are working with municipalities to improve their IPM implementation and to focus more effort on outreach to professional pesticide applicators and their clients, in order to increase interest in using IPM methods.

RECOMMEN-DATION: No action is necessary at this time.

[2] Integrated Pest Management is a pest control strategy that uses an array of complementary methods: natural predators and parasites, pest-resistant plant varieties, cultural practices, biological controls, various physical techniques, and pesticides as a last resort.