

# TOXIC HOT SPOTS MONITORING IN SAN DIEGO BAY

The former California Bay Protection and Toxic Cleanup (Toxic Hot Spot) Program was implemented for 10 years and identified five San Diego Bay locations that had sediment contamination causing toxicity to marine life and benthic community impairments. This program is referenced in Appendix B of the Municipal Storm Water Permit, Order No. 2001-01 and requires the Copermittees to report annually on program activities. The Toxic Hot Spot Program goals and tasks were incorporated into the Regional Board's Pollutant Load Reduction Program for implementation incorporated into the San Diego Bay Total Maximum Daily Load (TMDL) projects. Copermittees activities that have occurred regarding this issue are organized according the Regional Board's specific TMDL project.

## 1 CHOLLAS AND PALETA TMDL PROGRAM

### ACTIVITY SUMMARY

In 1998 the sediments at the mouths of Chollas and Paleta Creeks are listed as impaired for toxicity and benthic community degradation in the Clean Water Act 303(d) list. This action requires the implementation of a Total Maximum Daily Load (TMDL) to return the waterbody segment back to water quality standards. The Regional Board initiated the TMDL in 2000 by coordinating monitoring efforts with stakeholders. A majority of the sampling and analysis work was performed by the Southern California Coastal Waters Research Project (SCCWRP) and the US Navy at the request of the Regional Board.

### PARTICIPATING JURISDICTIONS

- City of San Diego
- Port of San Diego
- US Navy
- Southern California Coastal Waters Research Project
- San Diego Water Quality Control Board, Region 9

### 1.1 WATERSHED PRIORITY POLLUTANTS OR STRESSORS ADDRESSED

- Metals
- Benthic community impacts
- Toxicity

### 1.2 HOW THIS ACTIVITY RELATES TO THE SAN DIEGO BAY WATERSHED

This TMDL activity assessed the spatial and temporal extent of the impairments at the mouths of Chollas and Paleta Creeks. *The Temporal Assessment of Chemistry, Toxicity and Benthic Communities in Sediments at the Mouths of Chollas Creek and Paleta Creek, San Diego Bay* by Southern California Coastal Waters Research Project (SCCWRP) had two objectives. The first objective was to describe the temporal variability in indicators of sediment quality at the selected reference and potentially impaired sites. The second objective was to confirm the aquatic life assessment results for the July and August 2001 sampling. SCCWRP's findings indicated contaminants

were consistently found in the sediments and there was variability between the stations and five sampling events. Based upon this study, sources of contamination need to be found and eliminated and best management practices identified that will improve the sediment quality in San Diego Bay.

In the fall of 2005, the Regional Board modified this TMDL project to be included in the Chollas-Paletta-Switzer Creek Mouths TMDL. This modified TMDL is incorporating the previous work at all three creek mouths because of their similarities. Additional meetings have been conducted and new stakeholders are attending. These activities will be reported in the next annual report due to said activities occurring beyond this reporting period.

#### **TASKS IMPLEMENTED DURING FY 2004-2005**

The following administrative tasks were conducted as part of this TMDL program during Fiscal Year 2005:

- September 17, 2004 Alternative Toxicity Study Meeting to provide comments to the US Navy regarding their draft report.
- November 15, 2004 Regional Board notice that the draft *The Temporal Assessment of Chemistry, Toxicity and Benthic Communities in Sediments at the Mouths of Chollas Creek and Paleta Creek, San Diego Bay* by Southern California Coastal Waters Research Project was available on their website.
- January 24, 2005 Regional Board solicitation for comments on the draft *The Temporal Assessment of Chemistry, Toxicity and Benthic Communities in Sediments at the Mouths of Chollas Creek and Paleta Creek, San Diego Bay* by Southern California Coastal Waters Research Project.
- February 24, 2005 submission of comments on draft *The Temporal Assessment of Chemistry, Toxicity and Benthic Communities in Sediments at the Mouths of Chollas Creek and Paleta Creek, San Diego Bay* by Southern California Coastal Waters Research Project.

## **2 CHOLLAS CREEK DIAZINON TMDL PROGRAM**

#### **ACTIVITY SUMMARY**

This total maximum daily load (TMDL) program is to help assess diazinon impacts on the beneficial uses of Chollas Creek.

#### **PARTICIPATING JURISDICTIONS**

- City of San Diego
- City of Lemon Grove
- City of La Mesa
- County of San Diego
- San Diego Unified Port District (Port of San Diego)

## **2.1 WATERSHED PRIORITY POLLUTANTS ADDRESSED**

- Pesticides (diazinon)

## **2.2 HOW THIS ACTIVITY RELATES TO THE SAN DIEGO BAY WATERSHED**

The Chollas Creek TMDL Program seeks to assess diazinon impacts on the beneficial uses of Chollas Creek through active monitoring and data collection with regards to the amount in and the sources of diazinon along the creek. Such information would directly be employed in selecting the appropriate Best Management Practices that would reduce the amount of diazinon loaded into the creek to acceptable levels.

Since Chollas Creek is a natural drainage system that traverses inner-city neighborhoods within the City of San Diego from its headwaters in La Mesa and Lemon Grove to San Diego Bay, improving the water quality of the creek would ultimately positively impact the water quality of San Diego Bay.

### **TASKS IMPLEMENTED DURING FY 2004-2005**

The following administrative tasks were conducted as part of this TMDL program during Fiscal Year 2005:

- The monitoring plan was prepared and submitted to the Regional Water Quality Control Board (RWQCB) as required in Investigation Order No. R9-2004-0277.
- The cities of La Mesa, Lemon Grove, and San Diego, together with the County of San Diego and the San Diego Unified Port District, coordinated to conduct the required activities outlined in the August 13, 2004 Monitoring Investigation Order No. R9-2004-0277.
- The first annual report for Investigation Order R9-2004-0277 was prepared and submitted to the RWQCB.
- The County of San Diego executed an agreement with the State Water Resources Control Board (SWRCB) to implement the Pesticide Research and Identification of Source and Mitigation (PRISM) Grant Program.
- The County of San Diego executed a Memorandum of Understanding with the City of San Diego to provide public education and outreach services and monitoring in the Chollas Creek Watershed.
- The City of San Diego provided consultant services to perform the Annual Residential Survey to assess the knowledge base of area residents on pesticides and other storm water issues.
- The County of San Diego coordinated activities with the University of California Extension Service (San Diego Office) regarding the preparation of pest cards, fact sheets and other educational materials.
- The City of San Diego provided consultant services to update the [www.ThinkBluesd.org](http://www.ThinkBluesd.org) website to include integrated pest management information.
- The County of San Diego provided services to update the Project Clean Water website with integrated pest management information.
- The PRISM Grant Quality Assurance Project Plan (QAPP) and the Sampling and Analysis Plan (SAP) were submitted to the Regional Board.
- The City of San Diego provided consultant services to perform water quality chemistry monitoring of the first storm event as required by

Investigation Order No. R9-2004-0277 of the 2004–2005 wet weather season.

- The City of San Diego, as a partner in the IPM PRISM Grant, provided consultant services to perform water quality chemistry monitoring of three additional storm events during the 2004–2005 wet weather season.
- The City of San Diego provided consultant services to perform focus group meetings. (Refer to the Education Activities section for a fuller description of this activity.)
- The County of San Diego coordinated activities with the University of California Extension Service (San Diego Office) for Master Gardener Program to provide nursery tip cards at City Farmers Nursery and Walter Anderson's Nursery within the watershed.
- The County of San Diego coordinated activities with the University of California Extension Service (San Diego Office) for a Master Gardener Program to provide nursery tip cards at additional retail outlets within the watershed.
- The City of San Diego, as a partner in the IPM PRISM Grant, provided consultant services to prepare for the next Annual Residential Survey.
- The City of San Diego, as a partner in the IPM PRISM Grant, provided consultant services to prepare the Water Quality Monitoring Report.
- The City of San Diego, as a partner in the IPM PRISM Grant, provided consultant services to perform sediment quality chemistry monitoring at four stations in the Chollas Creek Watershed.
- The County of San Diego coordinated activities with the University of California Extension Service (San Diego Office) to provide workshops on IPM/Water Quality issues on:
  - April 30, 2005: San Diego Rose Society, Balboa Park
  - March 5, 2005: General Public, North Park Library
  - May 10, 2005: OASIS Adult Learning Center, Mission Valley
- The County of San Diego coordinated activities with the University of California Extension Service (San Diego Office) for UCCE staff and Master Gardeners to participate in the following community events and provide information on IPM/Water Quality issues:
  - June 10, 2005: San Diego County Fair
  - June 18, 2005: Master Gardener Plant Sale, Balboa Park
- The County of San Diego coordinated activities with the University of California Extension Service (San Diego Office) so that 25 Master Gardeners completed a training class that included six workshops focused on IPM and water quality issues. A pool of Advanced Master Gardeners from this class are available to support the goals of pesticide reduction in the San Diego Bay Watershed.
- The County of San Diego coordinated activities with the University of California Extension Service (San Diego Office) for the continual availability of pest cards at the Cuyamaca Water Conservation Garden, beginning December 2004.

In addition, the following projects helped address diazinon in Chollas Creek during Fiscal Year 2005:

- Chollas Creek Water Quality Protection and Habitat Enhancement Project

- San Diego Region Integrated Pest Management Education and Outreach Project (i.e., Chollas Creek Watershed Focus Groups) → This project stems from the Integrated Pest Management (IPM) Pesticide Research and Identification of Source and Mitigation (PRISM) Program funded through a Proposition 13 Non-Point Source Pollution Control grant agreement. The City and County of San Diego initiated the program in July 2004, which includes integrated pest management alternatives for the region with an emphasis on diazinon in the Chollas Creek Watershed.

### **3 CHOLLAS CREEK DISSOLVED METALS TMDL**

#### **PROJECT SUMMARY**

On August 13, 2004, the Chollas Creek Watershed Municipal Copermittees were notified by the San Diego Regional Water Quality Control Board to incorporate dissolved metals monitoring into the Chollas Creek Diazinon TMDL Monitoring Plan (Monitoring Investigation Order No. R9-2004-0277). This regulatory requirement was implemented during the 2004–2005 wet weather season. Flow weighted composite samples were collected from three storm events as required. The first annual report is attached as an appendix to the Annual Receiving Water Monitoring Report.

#### **PARTICIPATING JURISDICTIONS**

- City of Lemon Grove
- City of La Mesa
- City of San Diego
- County of San Diego
- Port of San Diego

#### **3.1 WATERSHED PRIORITY POLLUTANTS ADDRESSED**

- Dissolved copper, lead and zinc

#### **3.2 HOW THIS ACTIVITY RELATES TO THE SAN DIEGO BAY WATERSHED**

The implementation of activities to reduce and monitor the amount of dissolved metals that cause toxicity in the creek will help comply with the California Toxics Rule and restore Chollas Creek's designated beneficial uses of WARM (Warm Freshwater Habitat) and WILD (Wildlife Habitat).

#### **ACTIVITIES CONDUCTED DURING 2004-2005**

The following activities were conducted as part of the TMDL monitoring during Fiscal Year 2005:

- Preparation and submission of Quality Assurance Project Plan and Sampling and Analysis Plan to the Regional Board.
- Approval of Quality Assurance Project Plan and Sampling and Analysis Plan by the Regional Board.
- Water chemistry and toxicity testing sampling of the first flush storm event at four stations on October 17, 2004.

- Water chemistry and toxicity testing sampling of the second flush storm event at four stations on October 27, 2004.
- Water chemistry and toxicity testing sampling of the third monitoring event at four stations on February 11, 2005.
- One time only creek bed sediment testing at four stations for diazinon, chlorpyrifos, dissolved cadmium, dissolved copper, dissolved lead and dissolved zinc.

For more information on specific activities, refer to Appendix the Annual Receiving Water Monitoring Report.

## **4 CHOLLAS CREEK WATER QUALITY PROTECTION & HABITAT ENHANCEMENT PROJECT**

### **ACTIVITY SUMMARY**

The City of San Diego (City) Metropolitan Wastewater Department Storm Water Pollution Prevention Division is managing the design and construction of a creek restoration project in Chollas Creek funded by a \$2.244 million Prop 13 grant from the State Water Resources Control Board. The project, titled "Chollas Creek Water Quality Protection & Habitat Enhancement Project," will remove approximately 5,000 square feet of concrete and other hardscape in and adjacent to Chollas Creek and restore approximately 1.7 acres of native upland and riparian habitat along a 750 foot-long segment of the Encanto Branch of Chollas Creek. The project includes an approximately \$500,000 education and outreach component to eliminate polluting practices of residents and businesses in the community. This project is part of the Chollas Creek Enhancement Program.

### **PARTICIPATING JURISDICTIONS/ORGANIZATIONS**

- City of San Diego
- Port of San Diego
- City of La Mesa
- City of Lemon Grove
- San Diego Coastkeeper
- Environmental Health Coalition

#### **4.1 WATERSHED PRIORITY POLLUTANTS ADDRESSED**

- Pesticides
- Metals
- Trash

#### **4.2 HOW THIS ACTIVITY RELATES TO THE SAN DIEGO BAY WATERSHED**

This project would implement one segment of the City of San Diego's Chollas Creek Enhancement Program, a watershed-based planning effort to restore the natural functions and beneficial uses of Chollas Creek and create a linear park for the

community. By removing concretized portions, widening the bed to reduce scour and flow velocities, and revegetating with native plants, the restoration effort will improve the biofiltration processes (i.e., filtering and removing pollutants from flows by plant uptake and natural filtration through soils) in the creek. The project will also create a linear park for the community so that the creek becomes a natural asset for the community to protect and not pollute.

#### **TASKS IMPLEMENTED DURING FY 2004-2005**

- The City initiated the design process and completed the 90% design plans for the creek restoration project, completed the environmental review process under CEQA (California Environmental Quality Act), and met four times with the community during the design process to seek community input on the project.
- The City initiated outreach programs for residents and businesses by conducting focus group surveys and establishing working groups with residents and participating businesses.

## **5 SAN DIEGO WATERSHEDS COMMON GROUND: SAN DIEGO BAY WATERSHED DEMONSTRATION PROJECT**

### **ACTIVITY SUMMARY**

The City of San Diego (City) was selected to receive Proposition 13 (Costa-Machado Act of 2000) funding for \$900,000 to implement the San Diego Bay Watershed Demonstration Project.

### **PARTICIPATING JURISDICTIONS**

- City of San Diego
- San Diego State University
- San Diego Coastkeeper

### **5.1 WATERSHED PRIORITY POLLUTANTS ADDRESSED**

- Sediment
- Pesticides
- Benthic community degradation

### **5.2 HOW THIS ACTIVITY RELATES TO THE SAN DIEGO BAY WATERSHED**

The San Diego Watershed Demonstration Project aims to enhance the capacity of the San Diego region to track and learn about conditions and trends associated with its water resources. Water quality data should be presented to the public in a manner that can easily be interpreted to facilitate decision-making and create better long-term understanding and stewardship of local water resources. The project intends to accomplish its goals of data acquisition, comprehension, and dissemination through a four-pronged approach: (1) establishment of a Regional Water Monitoring and Resource Center; (2) monitoring activities in support of Total Maximum Daily Load (TMDL) programs addressing benthic community degradation and sediment toxicity; (3)

development of a Geographic Information System (GIS) database for water resources; and (4) creation of an interactive web-based outreach, education, and decision-making tool.

The City's primary project partners are the San Diego State University Department of Geography (for GIS and cartographic expertise and server support) and the San Diego Coastkeeper (for the regional training center). The project has broad local support from the San Diego Regional Water Quality Control Board, the San Diego Association of Governments, and the San Diego Regional Municipal Storm Water Copermittees.

#### **TASKS IMPLEMENTED DURING FY 2004-2005**

The following tasks were implemented as part of the San Diego Watersheds Common Ground: San Diego Bay Watershed Demonstration Project during Fiscal Year 2005:

- Memoranda of Understanding (MOUs) with project partners were signed.
- Regional Water Monitoring and Resource Center: San Diego Coastkeeper worked on the establishment of the center and gearing up for the preparation of the Quality Assurance Project Plan to be submitted to the San Diego Regional Water Quality Control Board by the end of December 2005.
- Monitoring activities: Storm water and sediment sampling and analysis and bioassessment studies in three drainage areas (Switzer Creek, Downtown Anchorage, and B Street/Broadway Pier) were completed. The final report is expected to be completed by January 2005.
- GIS database: Compilation of hydrological information (location of streams, lakes, and known constructed channelized streams), roadways, and watershed boundaries was worked on for the database.
- Interactive web-based tool: Design of the prototype web-based GIS tool continued.