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Contact: Jim Nickles, 916/278-3016 (jnickles@usgs.gov)

Wide range of pesticides found in rivers flowing into California's Salton Sea *USGS detects more than two dozen compounds in the Alamo and New rivers*

U.S. Geological Survey researchers continue to find a wide variety of current-use and legacy pesticides in rivers flowing into the Salton Sea, California's largest lake.

As outlined in a new report prepared in cooperation with the State Water Resources Control Board, USGS scientists detected 25 pesticides in the water and 34 in sediments in the Imperial Valley's Alamo and New rivers, which account for about 80 percent of the flow into the Salton Sea.

In two earlier studies in 2001 through 2003, USGS scientists detected 18 compounds in the water and 19 in sediments in the New and Alamo rivers and in the Whitewater River, which flows into the sea from the Coachella Valley.

USGS hydrologist and co-author Jim Orlando said improved laboratory methods allowed for the analysis of a greater number of pesticides. They also gave scientists the ability to detect compounds at much lower concentrations.

"We more than doubled the number of pesticides we were looking for, and we detected a number of new compounds, including fungicides and pyrethroid insecticides," he said.

The report, "Pesticides in water and suspended sediment of the Alamo and New Rivers, Imperial Valley/Salton Sea Basin, California, 2006–2007," U.S. Geological Survey Data Series 365, is available online at <http://pubs.usgs.gov/ds/365/>. The authors are USGS scientists James Orlando, Kelly Smalling and Kathryn Kuivila.

The most frequently detected compounds in the water samples were chlorpyrifos, DCPA, EPTC, and trifluralin, which were observed in more than 75 percent of the samples. Of the 34 pesticides found in sediments, 14 were organochlorine pesticides such as DDT, the majority of which have not been used in the United States for decades.

In multiple water samples, they found concentrations of the pesticides carbofuran, chlorpyrifos, diazinon and malathion that exceeded aquatic-life "benchmarks" established by the U.S. Environmental Protection Agency (EPA).

EPA benchmarks are estimates of the concentrations above which pesticides can have adverse effects on fish, invertebrates and other aquatic life. They provide an indication of the environmental impact of measured pesticide concentrations, and they could be used to identify sites and pesticides for further investigations.

The USGS Pesticide Fate Research Group has been studying the transport and fate of pesticides in the Salton Sea watershed for more than a decade. Previous reports have documented the presence of current-use and legacy pesticides in water, suspended sediments and bed sediments in the Salton Sea and in the three major rivers that flow to the sea. Pesticide concentrations have been found to be generally greater in the Alamo River than the New and the Whitewater rivers, and greater in the rivers than in the Salton Sea itself.

For more on USGS work at the Salton Sea, go to <http://pubs.usgs.gov/fs/2007/3097/>.

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