

Pesticide legacy comes back to haunt growers

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*California Planning & Development Report
(Published February 2005)*

Half a century ago, farmers cultivating the fertile plains and valleys of Ventura County sprayed their crops with the miracle pesticide dichlorodiphenyltrichloroethane, the potent post-war product of American chemical ingenuity.

Ventura County growers weren't alone in taking advantage of DDT's characteristics. Because of its lethal and persistent effectiveness against a wide range of insects, the pesticide became popular with home gardeners, exterminators, timber producers, farmers and public mosquito-control agencies throughout the United States. In the 30 years it was in wide use, an estimated 675,000 tons of DDT were applied domestically, according to the U.S. Environmental Protection Agency. The peak year was 1959, when nearly 80 million pounds were applied in the United States.

The EPA banned DDT use domestically in 1972, following revelations that the chemical harmed wildlife and threatened human health. Yet now, more than three decades later, many California growers are about to find themselves paying a long-delayed price for the pesticide's past popularity. In just one watershed in Ventura County, the cost to growers alone could be as high as \$140 million in the first year, according to an estimate released last month.

That eye-popping figure is the product of an important but widely overlooked regulatory process slowly grinding its way into place in California, with potentially far-reaching implications. Growers may find themselves forced to give up large swaths of productive land to serve as streamside pollution buffers. Homeowners could face escalating sewer fees. Urban and rural agencies could end up squabbling fiercely over who should bear the bulk of compliance costs.

The regulations are known as total maximum daily loads, or TMDLs. They are a way of addressing water pollution from "nonpoint sources" — the diffuse runoff from agricultural fields and urban storm drains that, unlike emissions from factories and sewage treatment plants, lacks an identifiable discharge point where pollution controls can be installed and monitored with relative ease.

A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet standards established by states and tribes to protect the identified beneficial uses of that water, such as municipal supply, body-contact recreation, and support of aquatic life. A TMDL not only sets the total amount of a single pollutant that can enter the water body; it also divides the total load among all of the sources of that pollutant in the watershed and tells each discharger how much it can contribute.

Although authorized under section 303 of the Clean Water Act of 1972, TMDLs and nonpoint pollution were largely ignored by state and federal regulatory agencies until relatively recently. The EPA did not even adopt implementing regulations for them until 1985, refining those standards further in 1992. And it has only been within the past decade that enforcement has begun, largely a consequence of a barrage of lawsuits by environmental organizations seeking to force the EPA and the states to adopt TMDLs for impaired streams and lakes. To date, there have been about 40 such legal actions in 38

states, and the EPA is under court order or consent decrees in many regions to ensure that TMDLs are established, either by the state or by EPA.

One such consent decree is in place for the greater Los Angeles region, including Ventura County, where the process of developing TMDLs for the Calleguas Creek watershed — home to scores of farmers now confronting the legacy of decades-old pesticide application — is the most advanced in the state and serves as a good illustration of the program's promises and pitfalls.

The process of developing TMDLs is painfully slow and complex. It starts with what regulators refer to as the "303 (d) list," a comprehensive listing of all impaired waters within their jurisdiction that states, territories and tribes are required to submit periodically to the EPA. In California, 687 water bodies have been reported to the EPA as impaired. The largest category being streams, creeks and rivers, with 435 listed. The next largest category is coastal shoreline, with 97 areas listed.

Each listing identifies the specific pollutants for which the water fails to meet health and safety standards. In the Calleguas watershed, for example, those contaminants include salt, excess nutrients such as nitrogen, pesticides and PCBs, silt, fecal bacteria, and toxic metals such as copper, mercury and zinc.

Once the pollutants have been identified, researchers have to figure out where they are coming from, how much of each can be discharged into the watershed under varying hydrological conditions without posing a risk, and how much each discharger will be allowed to emit.

In a large watershed containing hundreds or thousands of potential sources — and with scientific data about precise health risks sketchy for many substances — this is a daunting and imprecise task. The consent decree compelling development of the Calleguas Creek TMDLs was signed in 1999, and so far only the standards for nutrients and salt have been completed. Those for historical pesticides (including discontinued ones such as DDT, which can remain in the soil for decades and wash into streams with every big storm) and PCBs are expected to be completed this year. Bacteria and metals TMDLs are being developed.

Twenty percent of the impaired watersheds in the Los Angeles region (which includes Los Angeles and Ventura counties, along with small portions of Kern and Santa Barbara counties) have TMDL plans in place or in process, said Sam Unger, who monitors TMDL programs for the Los Angeles Regional Water Quality Control Board. That may not seem like much, but it puts the area well ahead of the statewide curve. Only 1 to 5 percent of the impaired watersheds in other regions in California have done the same, according to Cindy Lin, who oversees the TMDL program for the EPA's Southern California field office. Under the 1999 consent decree, regulators in the Los Angeles region have until 2011 to complete the process. Absent a court order, the EPA has not set a deadline for other areas.

Strategies for controlling contaminated runoff vary. Farmers might change irrigation practices, or turn land near streams and other drainages into naturally vegetated buffers. Cities can install wetlands or other biological filters to treat storm flows or sewage plant discharges. In many watersheds, nearly every person and activity stands to be affected.

"There's no bad guys out there," said Richard Hajas, general manager of the Camrosa Water District in Ventura County and vice chair of the group developing the Calleguas watershed plan. "In this particular case, we're all the culprit."