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Crackdown on copper: threat to wildlife, water

Push is on across California to reduce pollution from the toxic metal

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Sunday, June 13, 2010 at 12:04 a.m.



Nelvin C. Cepeda / Union-Tribune

A motor-sweeper operator for the city of San Diego works along Market Street, using a device that helps pick up the copper dust that settles on the ground when drivers apply their brakes.



Photo by Nelvin C. Cepeda - Union-Tribune

Street-sweeper operator Todd Ethridge makes his way down Broadway in Golden Hill. Picking up copper dust is important to avoid having it wash down storm drains and eventually into creeks and bays.

Drivers and boaters unwittingly threaten endangered fish — and potentially affect drinking-water deliveries in the long term — every time they hit the brakes or brush paint on boat hulls.

The culprit is copper, which even in microscopic amounts can throw off the navigation system that steers migratory fish home to spawn. The metal also interferes with the sense of smell that important species such as salmon use to avoid predators and find food. In Southern California, copper can harm many kinds of fish, shell fish and other species in the food chain.

Regulators, legislators and port managers across California are trying to tackle copper pollution with more environmentally friendly products, proposed laws and cleanup orders, including some being tested in San Diego County. The changes could end up costing residents more every time they buy brakes or repaint their vessels, but momentum is building to move ahead.

“Copper is toxic. It destroys marine life — plants and animals,” said state Sen. Christine Kehoe, D-San Diego. “We must take steps to clean it up.”

Kehoe has drafted legislation, Senate Bill 346, that would replace most of the copper in vehicle brake pads.

Automakers and brake manufacturers say Kehoe’s proposal goes too far, too fast because cost-effective alternatives aren’t readily available. The legislation will get its first test before an Assembly committee

Tuesday. Gov. Arnold Schwarzenegger hasn't taken a stand on the issue.

Washington was the first state to enact legislation to reduce copper in brakes, spurred by the desire to safeguard its salmon fishery. Similar bills are up for consideration in Rhode Island and New York. In Alaska, activists are fighting a mine that they fear will taint the prized wild-salmon waterways of Bristol Bay.

"Fish live in a chemical soup, so it's crucial to their survival that they interpret the chemicals accurately," said Carol Ann Woody, who has researched the issue in Alaska. "For fish, their sense of smell is like our vision."

It isn't just fish that are affected.

San Diego County and other parts of the state have endured major cuts to their water supply so more could be diverted to help populations of salmon and smelt rebound. If copper-cutting efforts don't succeed, fishery regulators could demand even more water to boost fish runs.

Copper protects brakes from overheating and controls shuddering when the pedal is applied. Copper dust becomes airborne when drivers use their brakes, and it settles on streets and sidewalks. When rain falls, the particles wash down storm drains and eventually into creeks and bays.

Under Kehoe's measure, vehicle brakes sold in California couldn't have more than 0.5 percent copper by 2025. Brakes in passenger cars generally contain 3 percent to 25 percent copper.

Automakers and brake manufacturers prefer the state of Washington's model, which sets a 5 percent cap by 2021. They want to make sure that the replacement compounds won't create problems for human and environmental health.

"We don't want to come up with an alternative that is worse," said Charles Territo, a spokesman for a coalition of automakers tracking the legislation.

The brake industry is wary of being boxed into adopting replacements that might not be as effective in meeting federal safety standards for how long it takes to stop a car and control vibrations, said Anne Wilson, a spokeswoman for another industry group, the Motor and Equipment Manufacturers Association.

"We have to have safe products, and that is going to take money and that is going to take time," Wilson said.

Kehoe said Californians have proved that they will pay a little more to protect the environment, and she doubts the law will inflate prices or pose an insurmountable obstacle for the industry.

In San Diego County, storm-water officials welcome Kehoe's bill because they are under orders by pollution regulators to reduce the amount of dissolved copper in the Chollas Creek watershed by more than 62 percent during the next eight years and by even larger amounts over two decades.

State and federal regulators can impose steep fines if they don't see enough progress toward fulfilling provisions of the U.S. Clean Water Act.

Chollas Creek is one of the most polluted waterways in the region; about 50 percent of the copper in its flow comes from brake dust, according to the San Diego Storm Water Department.

The city's officials and environmentalists agree that it would be cheaper to limit copper in brakes and other products than building water-treatment plants or cleaning up compounds after they have entered storm-water pipes or settled into a riverbed.

“It has been proven time and again that the least expensive way to keep copper out of waterways like Chollas Creek is to stop contamination at the source,” said Stacey Sullivan, policy director of the nonprofit group Sustainable Conservation, which is lobbying for Kehoe’s bill.

Two other copper-reduction initiatives are taking shape in San Diego Bay, which has become a laboratory to study ways to reduce copper contamination.

A main source of contamination along marine shores is copper-based hull paint, which kills algae and other organisms when they attach themselves to boats. Boaters use copper-laced paint because even thin layers of algae growth can slow the vessel and boost its fuel consumption.

As the paint sloughs off, copper particles foul the water and the sediment.

The San Diego Regional Water Quality Control Board has set 2022 as the deadline to reduce levels of dissolved copper by 76 percent at Shelter Island Yacht Basin in northern San Diego Bay. It’s a tall order because the roughly 2,300 boats docked at Shelter Island marinas are continuously leaching copper. Similar problems have been reported at America’s Cup Harbor, Coronado Cays, Glorietta Bay, the Chula Vista Marina and elsewhere.

Officials at the Unified Port of San Diego are studying Shelter Island in the hope of figuring out how many boats have copper-based paint and developing eco-friendly alternatives. They also are seeking a \$600,000 state grant to apply noncopper paint to more vessels.

“There are a lot of people looking at us to see how we are going to get the boaters to transition away from copper-based paint,” said Karen Holman, a senior environmental specialist for the port district.

Hornblower Cruises & Events doesn’t dock vessels at Shelter Island, but it’s voluntarily leading efforts to find copper-free paints for its seven tour boats in San Diego Bay. The initiative involves an unusual test on the hull of the Newport Hornblower: multicolored stripes of nine copper-free paints.

Jim Unger, vice president for Hornblower in San Diego, said it’s imperative to test alternatives now. A big concern is cost, which could run 50 percent higher for noncopper paint.

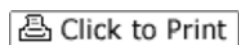
“We could become a good customer if paint companies can move on from their old technology,” Unger said.

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