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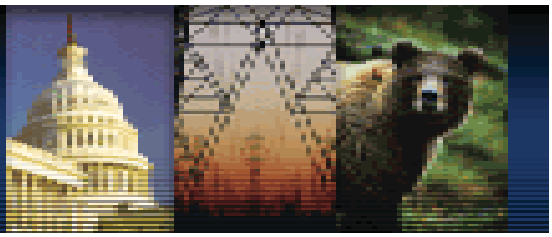

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SCIENCE: Existing laws can ease ocean acidification 'hot spots,' researchers say

Lauren Morello, E&E reporter

Well-worn tactics to stop coastal erosion and prevent polluted rainwater from reaching streams and bays may also fight ocean acidification.

That's the conclusion of a group of scientists who say that cities and states may have more tools than they realize to counteract the local effects of the ongoing shift in the chemistry of world's oceans.

Carbon dioxide emissions produced by burning fossil fuels are driving acidification on a global scale, acknowledge the researchers in a policy essay published yesterday in the journal Science.

But they argue that local problems like erosion, polluted runoff from cities and agricultural areas, other types of air pollution and poor land-use planning can make a bad situation worse, turning some coastal regions into acidification "hot spots."

"It looks like up to half of the stressors that are driving local hot spots can be locally derived," said lead author Ryan Kelly, an analyst at Stanford University's Center for Ocean Solutions. "CO2 is a global problem, but it only may be half of the story."

That could be the case in the Chesapeake Bay, according to recent research by one of Kelly's co-authors, Oregon State University professor George Waldbusser.

He found that parts of the bay are now more acidic than the surrounding ocean, a development scientists believe is driven in part by nutrient runoff that encourages blooms of phytoplankton. When those plankton die, they release CO2 in the bay.

The good news, said Kelly, is that such research suggests that existing environmental laws provide potent mechanisms for reducing acidification at local hot spots.

"We think of there being a pH budget," he said. "There are lots of ways to overspend that pH budget, and CO2 is just one of them."

The study's authors, who also include researchers at the National Oceanic and Atmospheric Administration and U.S. EPA, suggest four different approaches local governments can use to combat acidification.

They include complying with sections of the Clean Water Act that require states to prevent polluted runoff from reaching streams, bays and oceans and combating soil erosion to prevent fertilizer that can increase acidification from leaching into waterways.

Other tactics include changing land-use policies to prevent sprawl and runoff and enforcing Clean Air Act limits on air pollutants like nitrogen oxide and sulfur oxide, the scientists say.