Acidity in Alaskan Waters Poses Risk to Crab, Fisheries

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JUNEAU, Alaska (AP) — The release of carbon dioxide into the air from factory smokestacks to the tailpipe on your car could pose a risk to red king crab and other lucrative fisheries in Alaska, a new report says.

Ocean water becomes more acidic when it absorbs carbon dioxide released by human sources, such as the burning of fossil fuels. Increased ocean acidification could harm important Alaska commercial and subsistence fisheries and communities that rely heavily on them, according to the new research aimed at spurring discussion on how to address the changes.

The research, led by the National Oceanic and Atmospheric Administration, was to be published Tuesday in the online journal Progress in Oceanography.

Researchers said changes in ocean chemistry could make it harder for mollusks and other small creatures to build and keep their skeletons or shells. Previous studies have shown red king crab and tanner crab grow more slowly in more acidic water and that red king crab died in highly acidified conditions.

Communities in southeast and southwest Alaska face the highest risk from ocean acidification because of their reliance on fishing, relatively lower income levels and fewer job alternatives than other parts of Alaska, the report states. For communities with high food and energy costs, ocean acidification could be another hit, the research says.

According to the NOAA, Alaska's high-latitude coastal waters are more vulnerable to acidification because cold water can absorb more carbon dioxide. Circulation patterns also bring more acidic deep-ocean water to the surface, the agency said.

Co-lead author of the study, NOAA oceanographer Jeremy Mathis, said the goal was to try to quantify the potential risk and impacts from ocean acidification, a question that's come up in meetings with fishermen, villages and communities but one he's never had a good answer for.

While direct, harmful impacts aren't showing up yet, the ocean is changing quickly, he said. Oceans are about 30 percent more acidic today than they were at the start of the Industrial Revolution, he said. If fossil fuels continue to be burned at the current rate, pH levels could drop significantly by the end of the century, said Mathis, who is also director of an ocean acidification research center at the University of Alaska Fairbanks.

"We could have a 300 percent greater change between now and the end of the

century than we have in the past 250 years combined," he said. "So the rate of change is what's accelerating."

Mathis said lab studies have shown a low level of tolerance for acidification in crab, but those impacts haven't been seen in the wild yet. As the oceans change, there are some who believe species will adapt or new organisms will emerge, and that could happen, he said. But acidification also could change population dynamics, he said.

"In a place like the Bering Sea, where a billion-dollar industry has been built around a few species of crabs, then that's where we really start to worry. It's something we're going to have to pay very close attention to," Mathis said.

As an area of further study, Mathis said he would like to be able to quantify the potential financial impacts of the changes.

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