

Some sunscreens may kill corals. Should they be banned?

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Environmentalists and Democratic lawmakers increasingly are working to bar the sale of sunscreens that may damage coral reefs, but the bans are dividing a surprising group: coral scientists.

Hawaii last year became the first state to ban sales of sunscreens with oxybenzone and octinoxate, chemicals that are found in as much as three-quarters of sunscreens on the U.S. market. Key West, Fla., followed suit last month, making it the first city to ban sales of such sunscreens. Florida and California are considering similar bans.

The bans are a response to a decline in coral health. Corals around the world have been stressed to the point of turning white, or "bleaching," which happens when they expel the energy-supplying algae that live within them.

Scientists often cite warming oceans because of [climate change](#) as the main culprit, but initial research shows sun-blocking chemicals oxybenzone and octinoxate also might be damaging corals, spurring bleaching.

Scientists disagree, though, over whether the evidence merits banning sales of [sunscreens](#) with the substances. Last month, many scientists and professors who specialize in corals, toxicology and chemistry flooded the Coral-List, a Listserv run by the National Oceanic and Atmospheric Administration (NOAA), with comments for and against such bans.

Even among a group of people with a strong interest in protecting coral health, the discussion was divisive, with some accusing the sunscreen industry of ignoring the dangers of its products.

Others mused that they were facing a situation similar to the early days of climate change awareness, in which scientists risk being too passive, cautious of advocating action on a growing problem until there is broad evidence.

Scientists agree that the major culprit in coral degradation is climate change. C. Mark Eakin, an oceanographer and the coordinator for

NOAA's Coral Reef Watch program, described sunscreen damage to corals as death by a thousand cuts. "Climate change," he added, "has been like a nuclear blast."

"If we don't deal with climate change," he said by email, "it won't matter what we do about sunscreens."

Some scientists say it's too early to know how damaging sunscreen is to corals because the studies are limited. About half a dozen studies examine the effects of oxybenzone on corals, and some researchers have questioned the methods behind the studies.

But other scientists—often those favoring a ban—say those studies are a small part of a growing body of research that documents the negative impact of oxybenzone and octinoxate on corals and other species with an endocrine system, including humans and animals.

Meanwhile, some dermatologists and sunscreen makers oppose the bans, saying they will lead to fewer people protecting themselves from sun exposure and increase the risk of skin cancer.

To be sure, prohibiting certain sunscreens is a small action in the larger fight against global warming, but local officials are calling it a start.

"If it's something we can do to minimize damage to reefs," said Key West Mayor Teri Johnston, "it's one small step we're going to take."

As in Hawaii, sales of sunscreen with oxybenzone and octinoxate will be prohibited in Key West starting in 2021.

Those laws were spurred in part by a 2015 study from Craig Downs, a forensic ecotoxicologist and the executive director of the Virginia-based nonprofit Haereticus Environmental Laboratory, which researches how

to conserve and restore habitat.

His study, published in the Archives of Environmental Contamination and Toxicology, was one of the first to find oxybenzone can harm corals.

Downs told Stateline oxybenzone is an "ecologically threatening chemical" that, when compounded by other local problems like sewage pollution and erosion of dirt into the ocean, can damage corals beyond repair, ending a cycle in which corals are able to bounce back from a bleaching event over the course of five to 10 years.

Supporters of Hawaii's ban cited a 2017 letter to legislators from Cheryl Woodley, a NOAA coral scientist, that said existing research was enough to spark action.

"While additional research may incrementally add to our understanding of its impacts to additional coral reef species," the letter said, "additional research on the impacts of oxybenzone should not be a prerequisite to management action."

Many Key West residents supported the ban—people wearing coral-colored shirts that read "oxybenzone free" filled city hall during debate on the measure.

Nicole Crane, a coral reef biologist and professor at Cabrillo College in California, said corals are dying off due to multiple stressors—warming ocean temperatures, pollution and chemicals. Still, she joined the Coral-List conversation in recent weeks to support banning sunscreens with oxybenzone and octinoxate.

"There are so many things about [coral reefs](#) that are a problem, and not many of them are easily tackled, whereas the sunscreen is easily tackled," Crane told Stateline. "I think we should be grabbing at anything

we can in getting the public involved in trying to protect these habitats."

Douglas Fenner, a coral scientist in American Samoa and a consultant for Conservation International and NOAA, said he's normally sympathetic to the idea of taking a precautionary approach to chemicals and conservation efforts, but in an email to the Coral-List he called banning oxybenzone and octinoxate a "feel good" exercise and a waste of time.

A number of studies show the chemicals can be dangerous, Fenner told Stateline, but they are still very low on the list of threats to corals, while skin cancer remains a high risk to human health. Melanoma rates in the United States have nearly doubled since 1999, according to the Centers for Disease Control and Prevention.

Some dermatologists and sunscreen companies likewise say they're concerned about skin cancer rates if people switch to a sunscreen that doesn't offer as broad a protection, or even skip sunscreen entirely.

Kurt Reynertson, a biologist with Johnson & Johnson, which produces many skin care products using oxybenzone and octinoxate, said audience members hissed at him when he testified against the ban in Key West.

Reynertson heads the company's product stewardship division, analyzing how certain chemicals impact human and environmental health. Normally the job involves telling the company not to use certain chemicals, he said, but he doesn't think there is enough data to support banning oxybenzone and octinoxate.

"What I know is that climate change is killing [corals], and that I don't have enough evidence to ban oxybenzone," he said. "Taking something out of the arsenal of what you could truly call a life-saving drug is a big decision. You don't base global public health decisions on a couple

studies."

The Skin Cancer Foundation, an education and research nonprofit supported in part by skin-care and cosmetics companies, said in a statement last year that the Hawaii ban was "cause for concern."

"By removing access to a significant number of products, this ban will give people another excuse to skip sun protection, putting them at greater risk for skin cancer," the foundation said in its statement. The American Academy of Dermatology declined to take a position on the sunscreen bans.

The bans in Hawaii and Key West don't stop visitors from bringing any sunscreen they choose, but locals will need a prescription before buying those with oxybenzone or octinoxate. Otherwise, shoppers will be limited to mineral sunscreens that rely on components like zinc oxide to block the sun or a smaller selection of sunscreens without the offending chemicals.

Reynertson said the public often perceives mineral sunscreens, which Johnson & Johnson also makes, as being better for the environment, but he's concerned that if they become widely used, the high dosage of substances may be just as damaging to corals.

But Downs said the mineral particles are too big to be absorbed by wildlife.

Sunscreen manufacturers and some environmentalists have been lobbying the U.S. Food and Drug Administration to expand its list of approved ingredients for sunscreen, which hasn't been modified since the late 1990s.

They point to Europe, which has a longer list, hopeful that a diversity of

ingredients would help reduce the impact of any one substance. The Skin Care Foundation supports expanding the list.

The FDA recently announced it would ask sunscreen makers to turn over more data about the active ingredients in their products, including oxybenzone and octinoxate.

California Assemblywoman Laura Friedman, a Democrat who sponsored legislation to ban sales in her state, said sunscreen producers have told her they could create less toxic products. "But with what they have approved now," she said, "they don't have an alternative that works as well that's not toxic."

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