

BAN CORAL-HARMING SUNSCREEN

RECOMMENDATIONS

Passing a bill that would ban the use of oxybenzone-containing sunscreen in Marine Protected areas

Creating a campaign to educate the general public on the dangers of various sunscreens and the coral-safe alternatives (biodegradable and water-resistant brands, UV-protecting clothes etc.)

Passing a bill that would require oxybenzone-sunscreens to display a warning label describing the threat it poses to corals

Banning the use of sunscreens containing 4-methylbenzylidene camphor (known to cause coral bleaching, and already banned in the USA and Japan).



We've entered the age of a **global coral-bleaching crisis**. To restore these vital ecosystems, we need to act now. Rising sea temperatures and ocean acidity are often held accountable for these bleaching events, but new research shows long-term damage in reefs is caused locally by ingredients in our sunscreens. The chemical **oxybenzone** is one of the most notable threats to reefs and one of the most common components of sunscreen. Not only can it cause coral bleaching, it can also stunt coral larvae growth and damage other marine life such as algae, sea urchins, fish and mammals. To stop this threat, regulations should be imposed to ban the use of oxybenzone-containing sunscreen, and campaigns to promote the use of alternative UV blocking methods.

What's the problem with sunscreen?

Every time a person applies sunscreen and dives, snorkels or swims around a reef ecosystem, they release oxybenzone into the environment. This chemical has damaging effects on a wide range of life -the most fragile being corals. From exposure to this chemical, corals suffer viral infections, DNA damage and growth stunts by causing the larvae to inadvertently encase themselves in a stony skeleton.

Furthermore, oxybenzone reduces a coral's ability to resist climate change by decreasing the temperature at which they bleach.

To get an idea of what these corals are up against, about 6000-14000 tons of sunscreen enters the reef environment via snorkelers, swimmers and divers each year.

Oxybenzone is particularly pervasive because it can be easily absorbed through skin and into the urinary system. So on top of washing off swimmers, this chemical can also enter the ocean through sewers, after toilet flushing and post-sun exposure showers.

Did you know?

Negative effects of oxybenzone can occur at a

concentration of 62 ppt.

Beaches in Hawaii have concentrations

higher than 700 ppt



What can be done?

Countries like Mexico, USA, and Japan have learned from cases like the Caribbean corals by creating laws and public campaigns to stop the effects of damaging sunscreens. **Now, it's time for Canada to get on board.** Mexico has put a federal regulation in place at two of their MPAs (Xcaret and Xel-Há), stating that any person submersing themselves in the water around the reefs must use non-oxybenzone containing sunscreen. In the US, the National Park Service has started a campaign called "Protect yourself, protect the reef" in which they educate the public about the risks of oxybenzone, and recommend a variety of safer alternatives.

Our government should work to implement both these strategies, as coral reefs make up an important part of our coastal ecosystems on all three of our coasts, and deserve to be protected.

Policy implications

Implementing a policy to ban coral-harming sunscreen (at least in marine protected areas), could prevent viral-induced coral bleaching and increase the animal's resilience towards the effects of climate change. This ban would also benefit life outside of the reef, as oxybenzone has been shown to cause damage in many other organisms. In turn, this would help to protect the industries important to our national economy that rely on healthy coral reefs for food and tourist attraction.



If you were to stand on a popular beach in the Caribbean islands after the day's tourists had gone home, it would be easy to see a gleaming slick on the water's surface. Research of this area has determined the slick is caused by chemicals in commercial sunscreens, and are believed to have contributed majorly to the 80% loss of coral reefs in the Caribbean.

Photo: McCoshum et al., 2016



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