# Growing concerns over sunscreen's impact on marine ecosystems



As the summer season approaches, many individuals are preparing for beach outings, reaching for sun lotion to protect their skin from harmful ultraviolet (UV) rays. However, a growing body of research is raising alarms about the environmental implications of sunscreen, specifically the chemicals within these products that may potentially permeate the food chain.

Marine scientists are increasingly concerned about "sunscreen-derived chemicals" and their toxicity, highlighting a troubling trend of chemical pollution impacting marine ecosystems. This issue has become more pressing as consumers begin to purchase sun protection products for warmer months, with recent studies indicating significant gaps in understanding how these chemicals affect marine life.

Anneliese Hodge, a PhD researcher at Plymouth Marine Laboratory and the University of Plymouth, emphasised the limited research available on this topic. Speaking to the Plymouth Herald, she stated, "This review indicates that current research has only scratched the surface of understanding how these chemicals can affect marine life. What's particularly concerning is that these compounds are considered 'pseudo-persistent pollutants' due to their continuous introduction into marine environments as well as an overall lack of understanding of how these chemicals then interact with others in the sea."

The entry points of these UV filters into marine environments are manifold. Direct introductions occur through recreational activities such as swimming, while indirect contributions come from washing towels that have contacted sunscreen-coated skin. It is estimated that at least 25% of sunscreen applied by beachgoers washes off during water activities, which could lead to a single beach accommodating 1,000 visitors generating over 35kg of sunscreen residue in just one day. Additionally, showering to rinse off sun lotion is contributing to the pollution.

Dr Frances Hopkins, a marine biogeochemist and PhD supervisor at the same institution, pointed out the extensive array of sunscreen-derived chemicals that may be released into coastal marine settings. "This review highlights the mindboggling range of sunscreen-derived chemicals that we know are released into coastal marine environments and demonstrates that our understanding of the effects of these toxic compounds on marine organisms is surprisingly limited", she explained.

These chemicals are not exclusive to sunscreens; they can also be found in various personal care products such as shampoos, moisturisers, and lipsticks, as well as in commercial items like plastics, rubber, paint, and cement to enhance light resistance and prevent degradation.

With coastal urbanisation and tourism anticipated to increase, understanding the cumulative effects of these compounds on marine ecosystems has become vital for the development of effective environmental protection strategies. Both Hodge and Hopkins advocate for more rigorous research on how these chemicals affect marine life across different geographical regions, from temperate to tropical waters, to assess their potential for bioaccumulation within the food chain.

The pressing environmental issue raised by these studies underscores the complexities of human interaction with marine ecosystems and the need for further investigation into how common consumer products may be shaping marine health.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.ehn.org/sunscreen-chemicals-may-harm-marine-life-scientists-warn-2671181814.html> - This article discusses how sunscreen chemicals contribute to marine pollution, affecting coral reefs and marine biodiversity, and highlights the need for urgent research on their ecological impacts. It also notes the continuous accumulation of these pollutants in marine environments.
* <https://www.downtoearth.org.in/science-technology/scientists-warn-of-growing-threat-from-sunscreen-to-marine-life-call-for-urgent-investigation> - This piece emphasizes the impact of sunscreen chemicals on marine ecosystems, including coral bleaching and disruptions to fish reproduction. It highlights the accumulation of these chemicals in marine environments and their potential for bioaccumulation.
* <https://phys.org/news/2025-02-sunscreen-potential-impact-marine-life.html> - The article highlights the pervasive presence of sunscreen chemicals in the ocean and the lack of comprehensive understanding of their effects on marine life. It underscores the need for research on their bioaccumulation potential and ecological risks.
* <https://www.noahwire.com> - Although not specific to sunscreen, this source was mentioned as part of the original article context, suggesting it as a potential news outlet covering these environmental issues.
* <https://www.justice.gov/archives/sco/file/1373816/dl?inline=> - This URL does not directly relate to sunscreen and marine life. However, it was listed among search results and may be irrelevant to the current topic.
* <https://pmc.ncbi.nlm.nih.gov/articles/PMC10311201/> - This URL also does not specifically address sunscreen and marine life. It pertains to digital evidence in criminal investigations and is thus unrelated to the current environmental topic.