

Significant Changes in Wave Conditions Due to Climate Change



Research finds that a warming planet will also alter ocean waves along with more than 50% of the world's coastlines. This study, published in [Nature Climate Change](#), reports significant implications for coastal flooding and erosion. As part of the [Coordinated Ocean Wave Climate Project](#), ten research organisations, including the British National Oceanography Centre ([NOC](#)), combined to look at a range of different global wave models in a variety of future climate scenarios, to determine how waves might change in the future.

"We are proud to be involved in this worldwide collaboration in wave science: this paper helps us to understand and quantify the future changes in global wind-wave climate", NOC scientist Dr Lucy Bricheno, who contributed to this study, said. While they identified some

differences between different models, they found if the 2°C Paris agreement target is kept, changes in wave patterns are likely to stay inside natural climate variability.

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However, in a business-as-usual climate, where warming continues in line with current trends, the models agreed the planet is likely to see significant changes in wave conditions along 50% of the world's coasts, although these changes varied by region.

For example, if the climate warms by more than 2°C beyond pre-industrial levels, southern Australia is likely to see longer, more southerly waves that could alter the stability of the coastline. For the UK coast, the mean wave height is projected to decrease by about 10% by the end of the century under the most extreme global warming scenario. Some areas will see the height of waves remain the same, but their wavelength or frequency will change. This can result in changes in the force exerted on the coast and any infrastructure there, and in some cases lead to increased wave-driven flooding.

Read the full study at [nature.com](#). Photo by [Sebastian Voortman](#) from [Pexels](#).