Rising sea levels spell danger for shorebirds such as the oystercatcher

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Relationship between the elevation of shorebird habitat and flooding risk under SLR. a, Map of study islands Terschelling (T), Ameland (A) and Schiermonnikoog (S) in the western Wadden Sea. b, The relationship between the elevation of the breeding habitat on the tidal marsh and the probability that it will flood at least once during the breeding season (black line) and how this compares to the distribution of nest elevations (gray shaded bars). c, Projected changes over time in median elevation and the probability that breeding habitat...
Research by James Cook University in Australia involving Radboud University scientists shows that rising sea levels will drastically reduce the number of shorebirds in Europe. The number of oystercatchers on three Waddeneilanden will decline an additional 56% to 79% over the next 100 years due to sea level rise.

The study is published in *Nature Climate Change*.

Even in a low greenhouse emission scenario that limits global warming below 2°, it was projected all three studied oystercatcher populations would be reduced by more than half. This is because the sites where the oystercatchers nest are already flooding due to sea level rise.

Lead researcher Martijn van de Pol of James Cook University stated, "Oystercatchers typically nest on the lower parts of the saltmarsh: These are overgrown areas of land directly bordering the sea. Historically, these nests would rarely get flooded, but now they do on a regular basis. As a result, there are fewer offspring being born and population numbers are dropping."

The oystercatchers' ability to adapt is not sufficient to cope with this rate of sea level rise.

The researchers analyzed four decades of field data and saw that the quality of habitat for shorebirds is declining due to increased nest flooding. Ecologist Eelke Jongejans of Radboud University, who was involved in the study, said, "Thus far, scientists have typically assumed coastal wildlife will mainly be affected by sea level rise due to habitat..."
loss, but our study shows that strong impacts already occur. Even before their habitat is drastically reduced."

Flooding washes away nests more often and in a few years oystercatchers will have even less room to build their nests.

The research also shows that gas extraction under the Waddenzee can worsen the consequences of sea level rise for birds. Jongejans said, "We saw in our models that the greatest impact of gas extraction only takes place after the extraction has stopped. So, for oystercatchers, among others, it is important that no more gas is extracted from the Waddenzee."

**More information:** Martijn van de Pol et al, Sea-level rise causes shorebird population collapse before habitats drown, *Nature Climate Change* (2024). [DOI: 10.1038/s41558-024-02051-w]

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