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REGIONAL VULNERABILITY OF SALTMARSHES IN GREAT BRITAIN TO SEA LEVEL RISE AND DROWNING OVER THE NEXT 200 YEARS

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Saltmarshes are valuable ecosystems but face an increasing risk of drowning if they cannot accumulate sufficient sediment to keep pace with relative sea level rise (RSLR). This study provides the first regional estimates of potential saltmarsh loss across Great Britain (GB) over the next ~200 years using a well-established modelling approach with high-resolution tidal gauge and suspended sediment datasets. Despite previous concerns over widespread loss, our results suggest that only ~8% of GB's saltmarshes are vulnerable to drowning under most RSLR scenarios. In England and most of Wales, which contain ~88% of GB's marshes, only ~17% of saltmarshes were vulnerable to drowning even under the highest rates of RSLR.

In contrast, Scotland's saltmarshes, previously considered relatively resilient due to lower RSLR may face severe losses, with up to ~58% at risk of drowning within 100 years and most regions predicted to lose all existing saltmarsh over this period. The study also highlights significant regional differences in vulnerability. Saltmarshes along England's south coast were found to be particularly vulnerable to drowning, aligning with historical and recent observations of marsh decline. These regional variations have important consequences for habitat creation as well as the management of flood and erosion risk.