

Hastings Sea Temperature

75 years of local records, 1950–2025

A short report on the Hastings Weather Volunteers' sea temperature record
Hastings Kelp Project • revised October 2026

In brief

- Hastings' sea has warmed by about **0.29 °C per decade** since 1951, roughly **1.7 °C** in total.
- The warmest year on record was **2022**; 2023, 2024 and 2025 are all in the top five.
- Extreme summer highs (19.8 °C or more) went from **none** in the 1950s and 1960s to **12 of the last 16 years**.
- The hottest reading in the record was **22.1 °C in August 2025**.
- Spring has warmed the most, which matters for young kelp growing at that time of year.

Overview

The Hastings Weather Volunteers have recorded sea temperatures on the Hastings seafront since 1950. Their monthly record of mean, maximum and minimum sea temperature covers 912 months, of which only 14 are missing, mostly in short gaps (the first seven months of 1950, mid-1965, early 1973, and single months in 1992 and 2020).

This report summarises what 75 years of that record show. It was produced by the Hastings Kelp Project, with the data and the volunteers' kind permission, because sea temperature is one of the main pressures on kelp along our coast.

Headline finding: a clear warming trend

Across the 71 years with a complete twelve months of records, the annual mean sea temperature has risen by about **0.29 °C per decade**. The trend is statistically very strong ($p < 0.001$) and accounts for about half of the year-to-year variation; the rest is natural ups and downs such as cold winters and hot summers.

The first ten complete years averaged about **11.2 °C**. The most recent ten (2016–2025) averaged about **12.9 °C**, a rise of roughly **1.7 °C**.

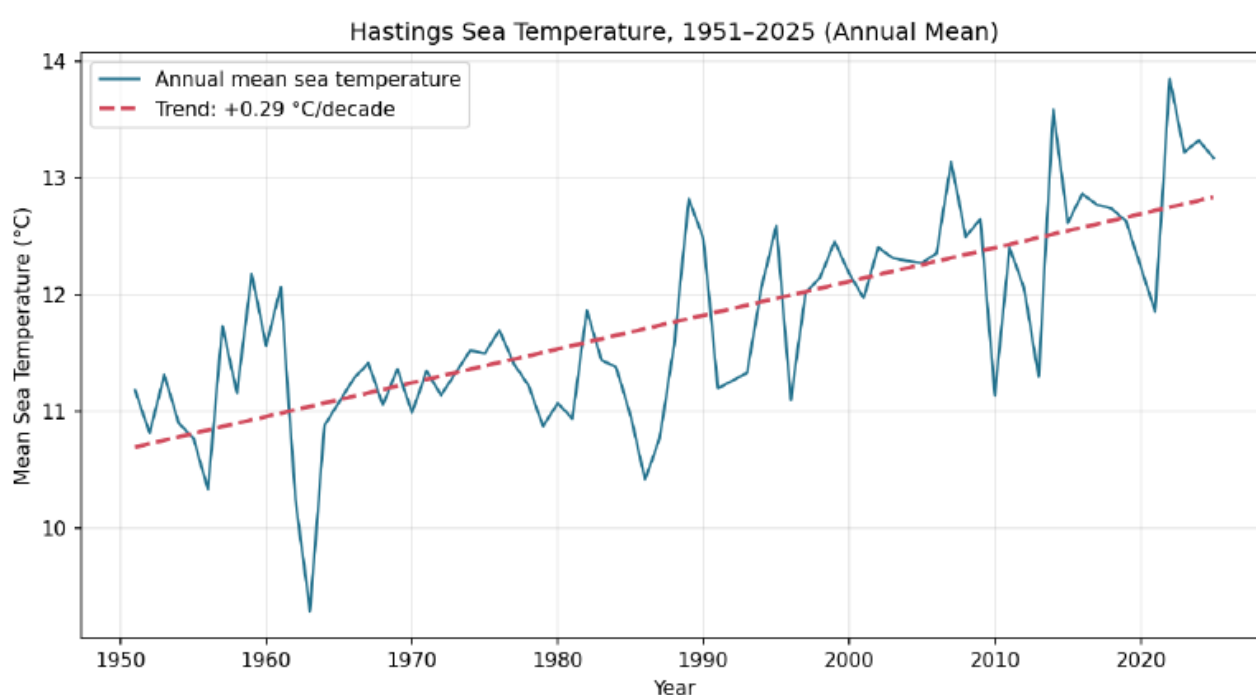


Figure 1. Annual mean sea temperature at Hastings, 1951–2025, with linear trend.

Warming has not been steady. Temperatures were broadly flat from the 1960s to the 1980s, then rose consistently from the 1990s onwards.

Decade	1950s	1960s	1970s	1980s	1990s	2000s	2010s	2020s
Mean (°C)	11.2	11.0	11.3	11.3	11.9	12.4	12.4	13.1

Table 1. Average annual mean sea temperature by decade. The 2020s cover 2021–2025 only (2020 is incomplete).

Which months have warmed the most

Comparing the earlier half of the record (1950–1987) with the later half (1988–2025), every month has warmed, but not equally. **April, May and August** warmed the most, each by around **1.45–1.47 °C**. The autumn and early winter months warmed least: **November +0.89 °C**, **October +0.77 °C** and **December +0.69 °C**.

The spring warming is particularly relevant to kelp. Sugar kelp grows fastest in late winter and spring, so warmer water at that time of year affects it during its most important growing season.

Record extremes

Record	Value	When
Warmest monthly maximum	22.1 °C	August 2025
Coldest monthly minimum	−1.8 °C	January 1963
Warmest year (annual mean)	13.85 °C	2022
Coldest year (annual mean)	9.3 °C	1963

2023, 2024 and 2025 also rank among the five warmest years on record.

A closer look at extreme highs

To see how hot summers have changed, we took the highest monthly maximum reading in each year and set an ‘extreme’ threshold at the 95th percentile of all those readings: **19.8 °C**.

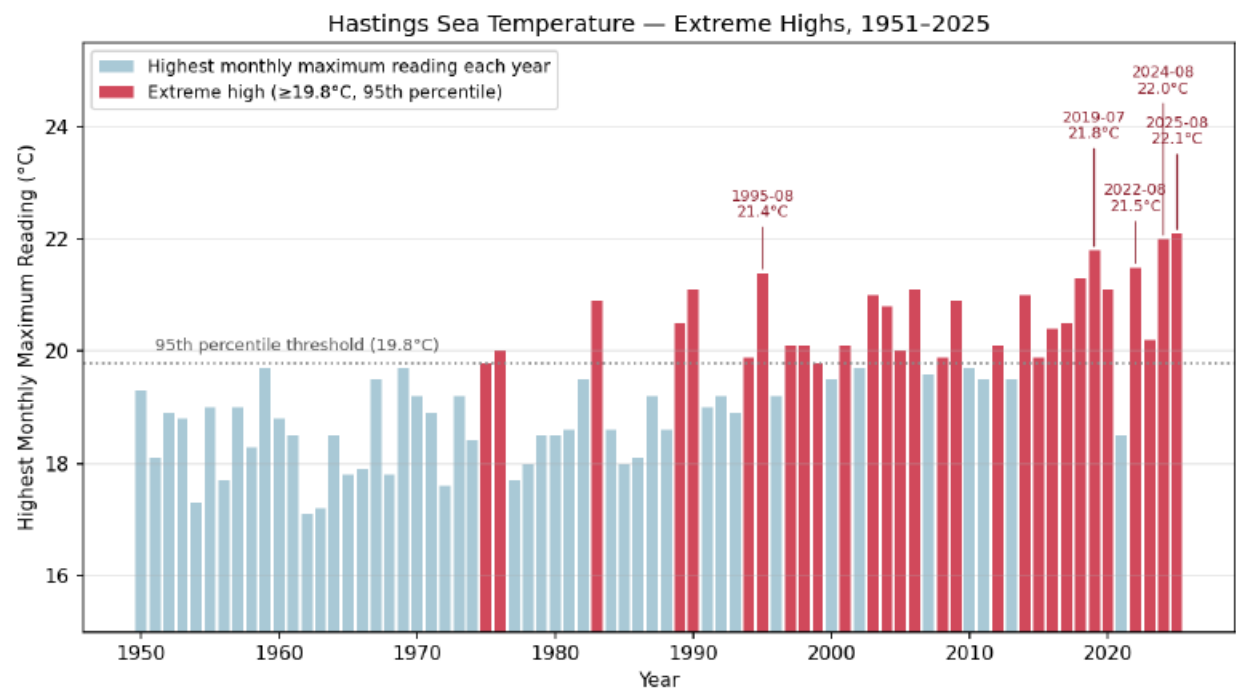


Figure 2. Highest monthly maximum reading each year, 1951–2025, with extreme years (19.8 °C or above, the 95th percentile) highlighted in red.

The number of extreme years per decade has climbed steadily:

Period	1950s	1960s	1970s	1980s	1990s	2000s	2010–2025
Extreme years	0	0	2	2	6	7	12 of 16

Readings that were once unusually hot are now a normal summer peak.

What this suggests

Hastings' sea is measurably warmer than it was in the 1950s, and the warming has sped up since the 1990s. Summer peaks now regularly exceed 20 °C, the temperature above which sugar kelp becomes stressed, and spring is warming fastest of all.

These results describe conditions at Hastings specifically, but the pattern is broadly consistent with warming seen across UK and North Atlantic coastal waters. For the Hastings Kelp Project, they make temperature one of the key pressures to test in our lab, alongside light, sediment and nutrients.

About the data: please read

This is a **volunteer, observational record**, not a calibrated scientific dataset, and the Hastings Weather Volunteers have asked that it be used with caution.

- Readings were taken when possible, usually two or three times a week.
- They were taken mostly from Hastings Pier, and from Rock-a-Nore or elsewhere when the pier was unavailable.
- Measurement depth varied with the tide, from under a fathom to just over two.
- In recent years readings used an uncalibrated thermometer, advertised as accurate to ± 2 °C.

Individual readings may therefore be a degree or two out. The record's value lies in its **length and consistency**: averaged over months, years and decades, random errors largely cancel out, and the long-term trend stands out clearly. Small differences between individual years should not be over-interpreted.

Partial years (1950, 1965, 1973, 1992 and 2020) are excluded from the annual trend.

Acknowledgements

With grateful thanks to **Bill Butler, Mark Hammond, Jonathan Lindars and all the Hastings Weather Volunteers** for decades of patient recording, for sharing their data, and for checking this report. Thanks also to Hastings Borough Council. The warming trend graph is displayed in the volunteers' seafront weather kiosk.

Data: Hastings Weather Volunteers, monthly sea temperature records 1950–2025.

Analysis and report: Hastings Kelp Project CIC (company no. 15808105).

Revised: October 2026 (corrected extreme-year counts per decade; added data limitations).