

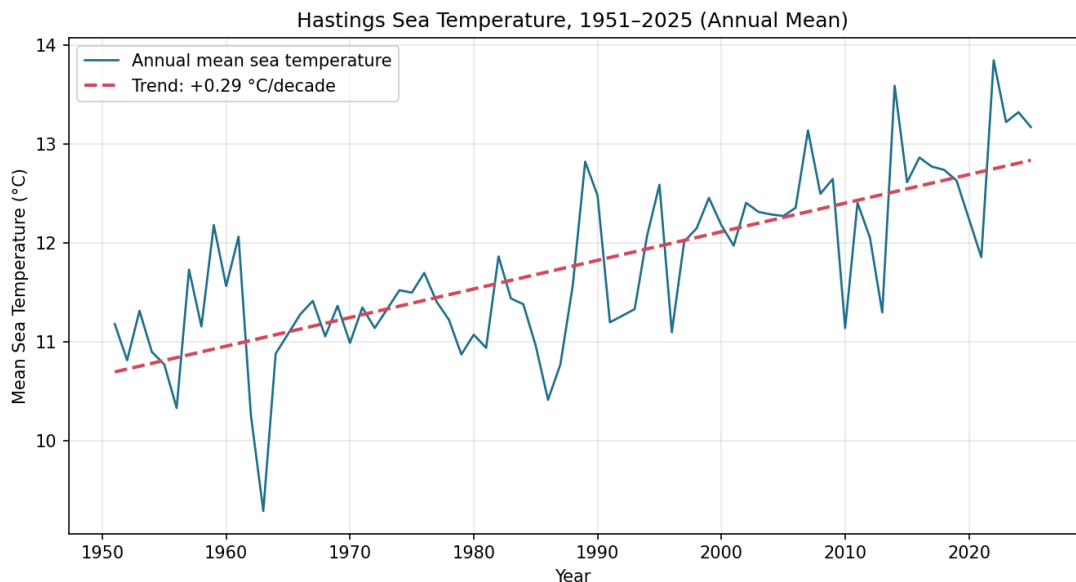
Hastings Sea Temperature: 75 Years of Local Records

A short report on the Hastings Weather Volunteers' sea temperature database, 1950–2025

Overview

The database contains monthly mean, maximum, and minimum sea temperature readings for Hastings spanning **1950 to 2025** — 912 monthly records in total. Coverage is close to complete: only 14 months are missing, concentrated in a handful of short gaps (the first seven months of 1950, mid-1965, early 1973, and single months in 1992 and 2020). For a volunteer-run record stretching three quarters of a century, this is a remarkably clean dataset.

Headline finding: a clear warming trend



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

Looking at the 71 years with complete 12-month coverage, annual mean sea temperature at Hastings has risen by approximately **0.29°C per decade** since 1951. That trend is statistically strong ($p < 0.001$) and explains about half of the year-to-year variation in the data — the rest being natural fluctuation.

Comparing the first ten complete years of the record (1951–1961 average: **11.2°C**) with the most recent ten (2016–2025 average: **12.9°C**) shows a rise of roughly **1.7°C** over that period.

Looking by decade, the warming has not been perfectly steady — there was a plateau through the 1960s–80s before temperatures began climbing more consistently from the 1990s onward:

Decade	Avg. Annual Mean (°C)
1950s	11.2
1960s	11.0
1970s	11.3
1980s	11.3
1990s	11.9
2000s	12.4

2010s	12.4
2020s	13.1

Which months have warmed the most

Splitting the record into an early half (1950–1987) and a later half (1988–2025) and comparing month-by-month averages shows the warming isn't uniform across the year. Spring and summer months show the largest increases, while autumn and December have warmed comparatively little:

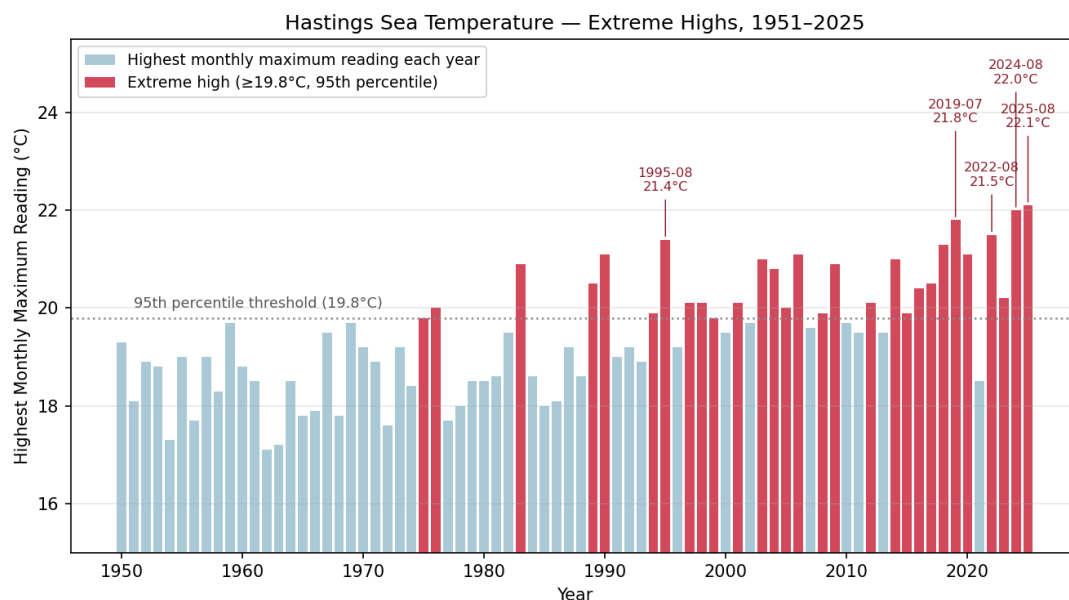
- **Largest increases:** April, May, and August (all up roughly 1.45–1.47°C)
- **Smallest increases:** December (+0.69°C), October (+0.77°C), and November (+0.89°C)

Record extremes

- **Warmest month on record (by maximum reading):** August 2025, reaching 22.1°C
- **Coldest month on record (by minimum reading):** January 1963, dropping to -1.8°C — consistent with the severe UK winter of 1962–63
- **Coldest year on record:** 1963 (annual mean 9.3°C)
- **Warmest years on record:** 2022, 2024, 2023, and 2025 all rank among the top five, with 2022 the outright warmest (13.85°C)

Notably, four of the five warmest years in the 75-year record have occurred since 2022 — a striking cluster at the very end of the dataset.

A closer look at extreme highs



Highest monthly maximum reading each year, 1951–2025, with extreme years (≥ 95 th percentile) highlighted.

To see how *extreme* heat events have changed, the chart above tracks the single hottest monthly reading recorded each year, with years reaching or exceeding the **95th percentile threshold (19.8°C)** highlighted in red.

The pattern is striking:

- In the **1950s and 1960s**, **not a single year** crossed the extreme-high threshold.

- The **1970s and 1980s** saw just 3 extreme years each.
- The **1990s and 2000s** each saw 9 extreme years — roughly one year in every three.
- Since **2010, 12 of the 16 years so far (75%)** have crossed the threshold, and every year from 2014 onward except one (2021) has qualified as extreme.
- The **five hottest readings ever recorded** all fall within the last 30 years, and four of them are from 2019 or later: August 2025 (22.1°C), August 2024 (22.0°C), July 2019 (21.8°C), August 2022 (21.5°C), and August 1995 (21.4°C).

In short, what counted as an unusually hot reading in the 1990s is now close to a typical summer peak — extreme highs have gone from rare to routine over the life of this record.

What this suggests

This is a genuinely valuable long-run local record — few coastal towns have volunteer-maintained sea temperature series running this far back. The overall pattern (gradual warming, accelerating in recent decades, concentrated in spring/summer) is broadly consistent with wider trends seen around UK and North Atlantic coastal waters, though this dataset speaks specifically to conditions at Hastings rather than the wider region.

Analysis based on HKP_Master_Sea_Temperature_Database.xlsx, Monthly Data sheet, as supplied by Hastings Weather Volunteers.