

Future Trend: River Temperatures

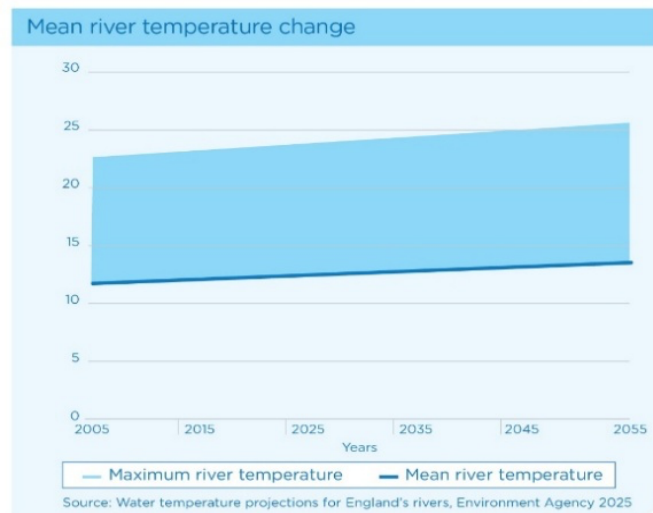
Trend definition and relevance to DWMP

Climate change is expected to increase air temperatures all-year round, leading to milder winters and hotter summers. These changes will also increase river temperatures, although the local impacts will vary depending on factors such as river hydromorphology, groundwater interactions and inflows, including from rainfall runoff.

River temperature is both an important indicator of ecological status and a key parameter in the water quality models we use to forecast future conditions and identify investment needs. Warmer water accelerates biological processes and contains less oxygen, reducing a river's ability to sustain healthy ecosystems. As river temperatures rise, maintaining or achieving Good Ecological Status may become increasingly challenging.

Within the DWMP, responding to this trend is likely to require increased investment in wastewater treatment, alongside continued reductions in storm overflow spills to reduce the risk of local ecological harm. The impact of rising river temperatures is closely linked to, and intensified by, the trend towards lower river flows, as warmer, lower-flowing rivers have less capacity to maintain the ecological conditions needed to achieve Good Ecological Status.

Trend description, uncertainty and potential impact on our region



- As shown in the figure, between the 1981-2005 mean baseline and 2055, mean river temperatures in large rivers across England are projected to increase by around 0.35°C per decade¹. This warming trend is expected to continue and accelerate through the second half of the century.
- Maximum monthly river temperatures in large rivers are projected to increase from an average of around 23°C during 2010 - 2019 to nearly 25°C during the 2050 - 2059 decade, representing a significant increase relative to the 1981 - 2005 mean baseline¹. Higher peak summer temperatures are expected to become more frequent, increasing thermal stress on aquatic ecosystems and reducing the capacity of rivers to support healthy ecological conditions.

Stage of DWMP used	
Risk assessment	✓
Plan development	✓
Impact/Importance	
Short term (2035)	Low
Medium term (2045)	Medium
Long term (2055)	High
Example PIs affected by this trend	
	Storm overflow performance
	Good ecological and/or chemical status: Public sewerage
	Treatment works compliance (numeric)



References

- 1 Water temperature projections for England's rivers. Environment Agency (2025). Available at: [Water temperature projections for England's rivers](#) (Accessed: July 2026).

