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Stream and river temperatures – a cinderella of water quality studies?

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This paper reviews the current status of streams and river temperature studies and aims to identify important directions for future work. Five areas, in particular, will be discussed. 1. Progress in understanding heat energy budgets as a fundamental driver of thermal regime in streams and rivers. 2. Variation in temperature behaviour at different spatial scales. 3. Long-term trends in stream and river temperatures and the influence of hydro-climatic controls. 4. The role of human impacts in modifying thermal regime. 5. Stream and river temperatures of the future. The paper will be illustrated, in particular, by long-term studies of stream and river temperatures in South-West England and Austria.