

# Subtropical Cornwall climate could mean exotic new crops

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The subtropical weather in Cornwall means new exotic crops such as quinoa and Japanese persimmon are now more likely to succeed, according to a new technique developed by University of Exeter experts to monitor the climate.

Parts of Cornwall have become subtropical since 2000 and this could create opportunities to grow new, unusual plants. Sunflowers, maize, grapevines and tea are already grown in the Duchy.

Researchers from the Environment and Sustainability Institute in Penryn, Cornwall, have developed new techniques for modelling local microclimates. The models capture the effects of terrain, [sea temperatures](#), altitude and soil properties to predict local temperatures, which can differ greatly from those measured at weather stations.

Using these models, they have been able to identify particularly mild parts of the landscape that would be most suitable for growing unusual crops associated with warmer climates. Sheltered coastal valleys are often buffered from the coldest temperatures by the more stable sea temperatures, and south-facing slopes are often up to 15 degrees warmer than the surrounding landscape.

The model shows that the amount by which temperatures have increased over the last 40 years has varied across the county, as Cornwall has become sunnier as well as warmer, but some locations have benefited from this more than others.

Dr Ilya Maclean, a Senior Lecturer in Natural Environment who lead the research, said: "While sub-tropical conditions may create opportunities to grow exotic crops, the lower frequency of frosts is also making Cornwall more susceptible to invasive species. As the temperatures continue to warm, we need to ensure we manage the risks carefully as well as capitalising on the opportunities. This will require scientists to continue to work hand-in-hand with the horticultural sector."

The techniques build on those first developed by geographer Glenn Thomas Trewartha, of Cornish-American descent, who in 1966 developed the world famous classification system for grouping climates into polar, boreal, temperate, subtropical and tropical.

Using this system, regions in which temperatures are 10°C or greater for 4-7 months of the year are considered temperate, and those with temperatures of 10°C or greater for more than 7 months of the year are considered subtropical. At that time the system was developed Cornwall lay firmly in the temperate zone.

Climate change impacts and adaptive strategies: lessons from the grapevine is published in the journal *Global Change Biology*.

**More information:** Jonathan R. Mosedale et al, Climate change impacts and adaptive strategies: lessons from the grapevine, *Global Change Biology* (2016). [DOI: 10.1111/gcb.13406](https://doi.org/10.1111/gcb.13406)

Provided by University of Exeter

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