


Climate Change and Socioecological Dynamics in Eastern Spain



Valencia

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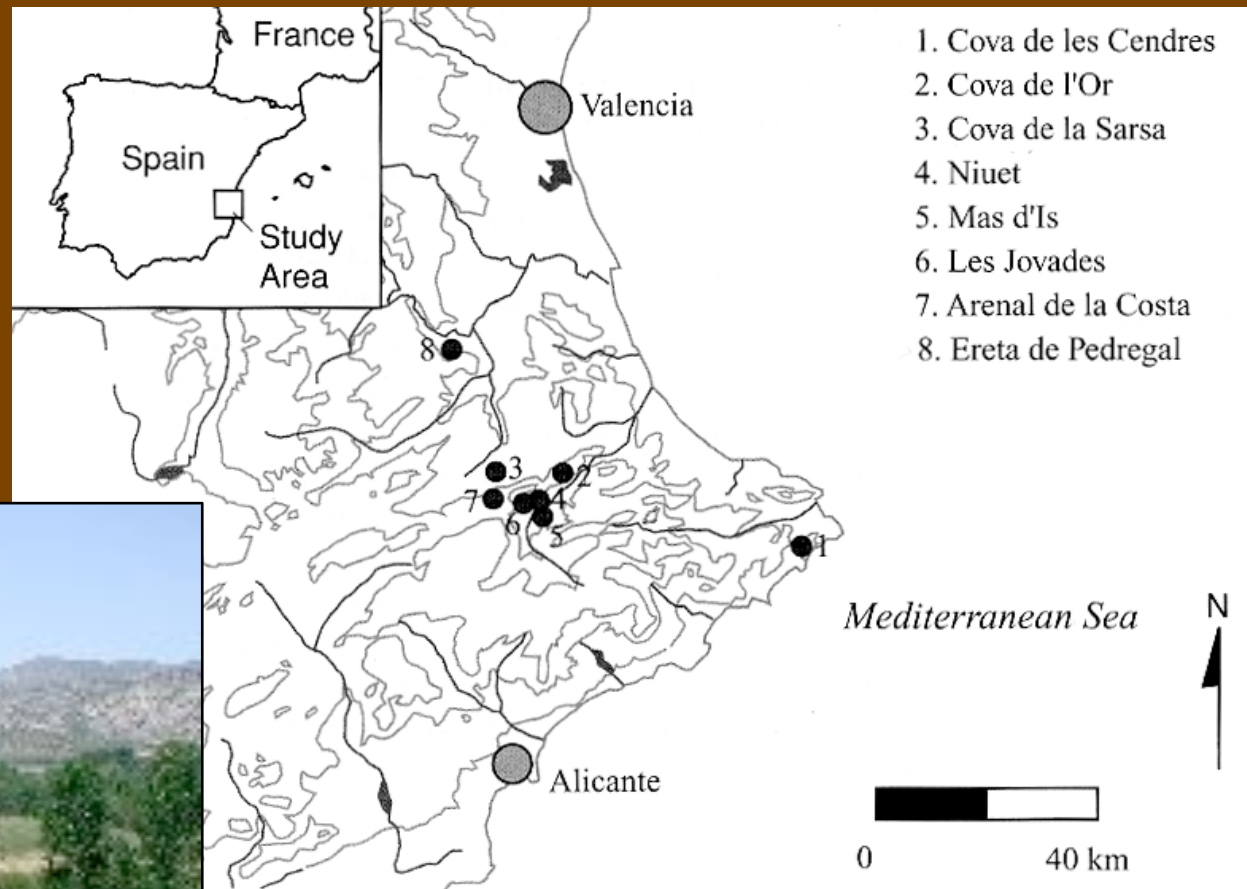
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Mediterranean Spain



Rio Serpis Valley



(Adapted from McClure et al. 2006)



Hypothesis

Climate change was an indirect cause of change in agricultural practices and social complexity

Expectations

Changes in behavior coincided or immediately postdated changes in climate



The Terminal Pleistocene

HUNTING
AND
GATHERING



AGRICULTURE



Eastern Spain in the Neolithic

Archaeological Period	Time Period	Behavior Change
Neolithic I	7600 – 6500 BP	Beginning of Agriculture
Neolithic II	6500 – 4400 BP	Aggregated Settlement
Final Neolithic II	4400 – 3800 BP	Increase in Storage



Storage Pits from Les Jovades



Agriculture in Mediterranean Spain

Neolithic I

Settlement in fertile valley bottoms

Intensive hoe-based
agriculture

Primarily sheep and
goat husbandry

Intercropping of
domestic plants

Neolithic II

Aggregated villages in remnant valley bottoms and valley margins

Extensive plough-based
agriculture

Increased cattle and pig
husbandry

No intercropping (?)

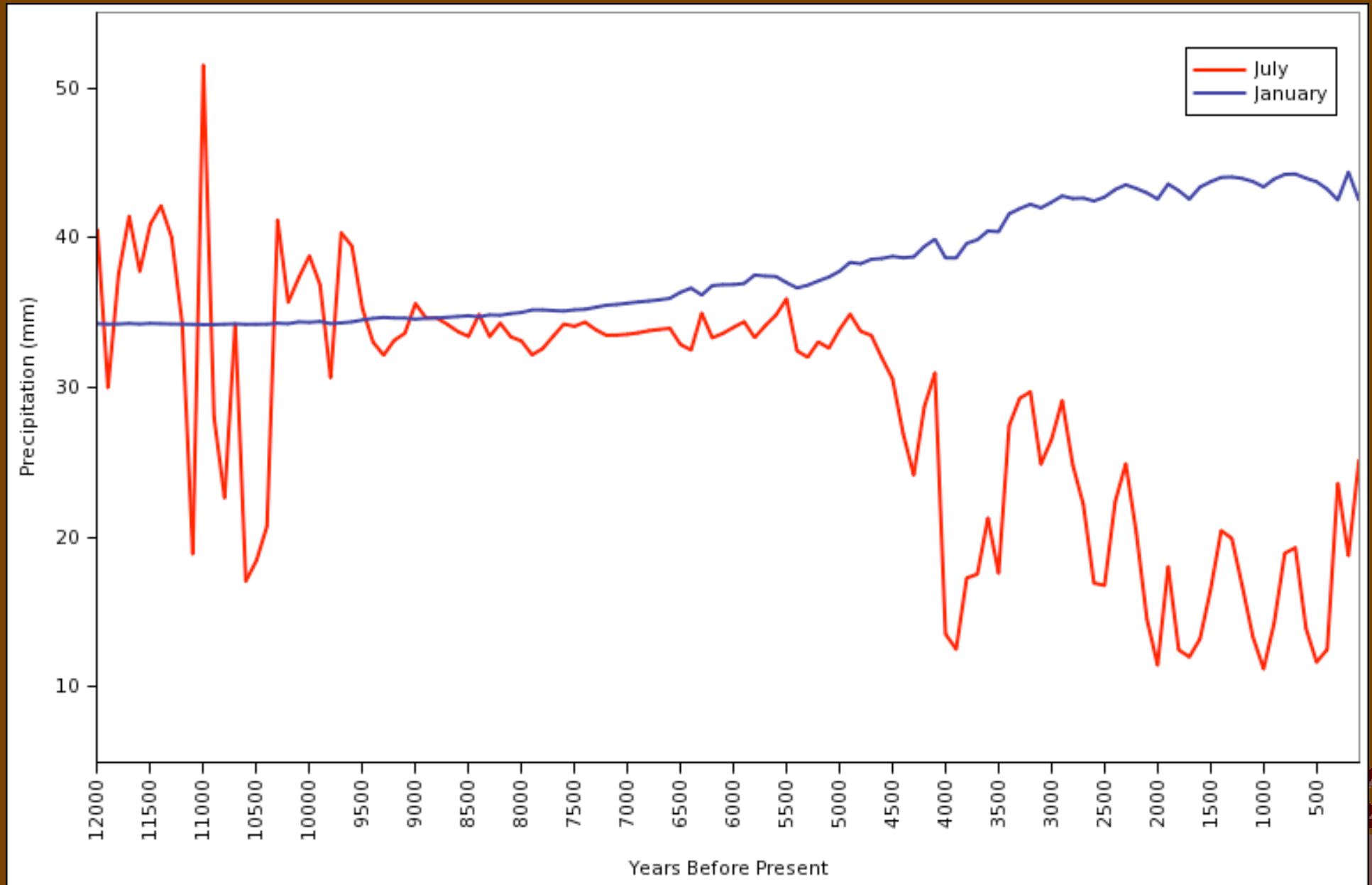
Corral construction

Terrace (?) construction

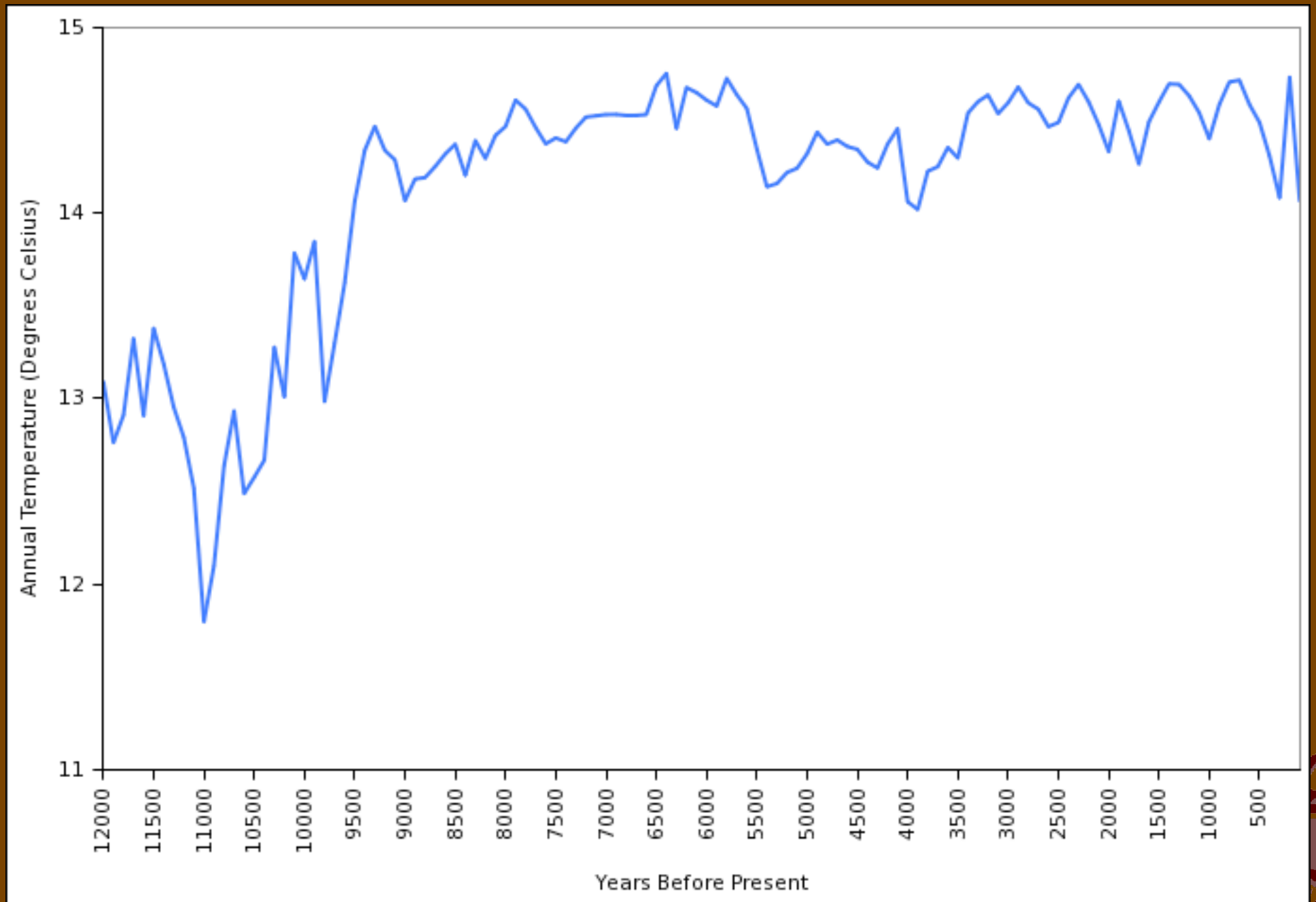
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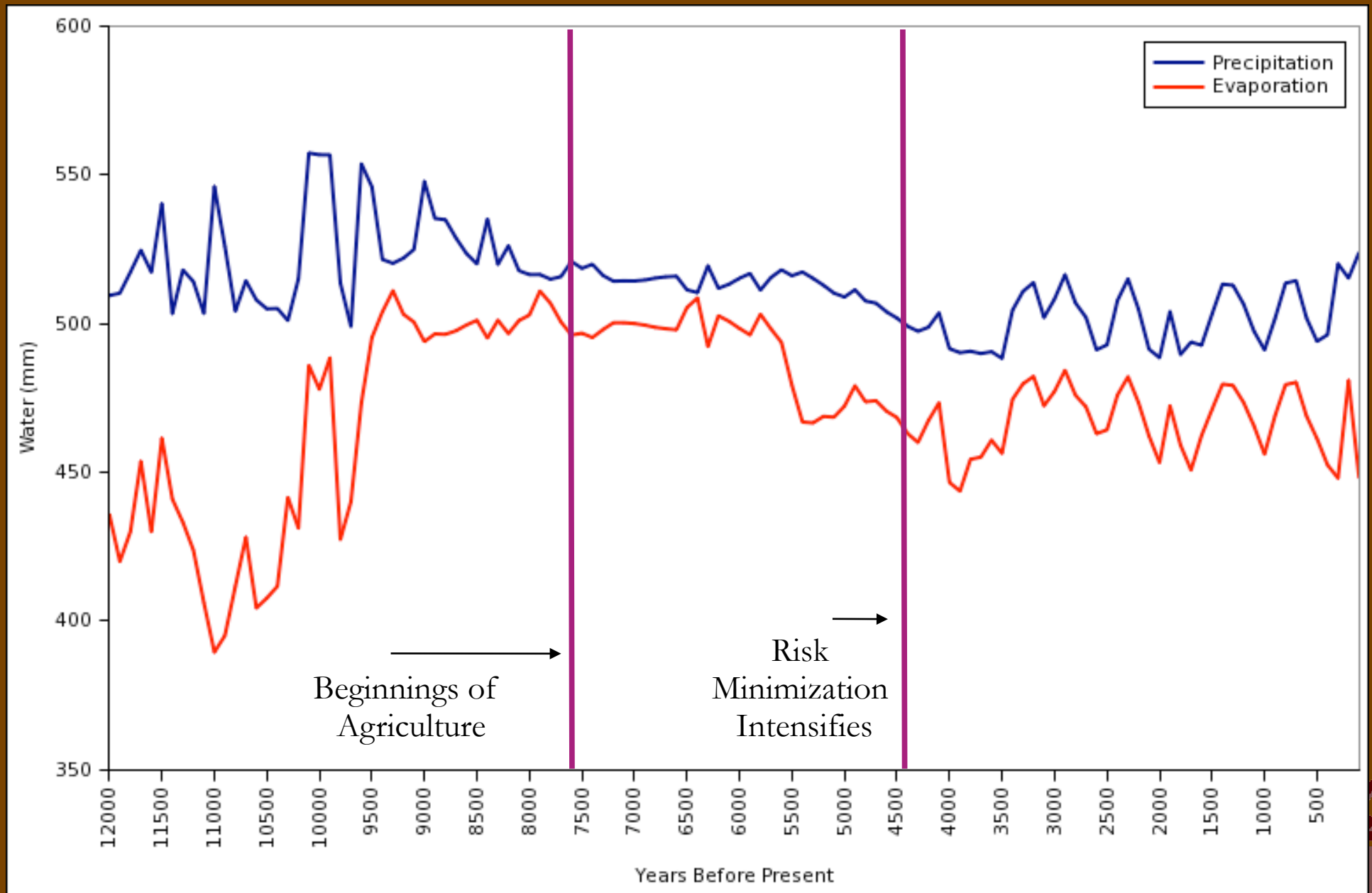
Precipitation Modeling



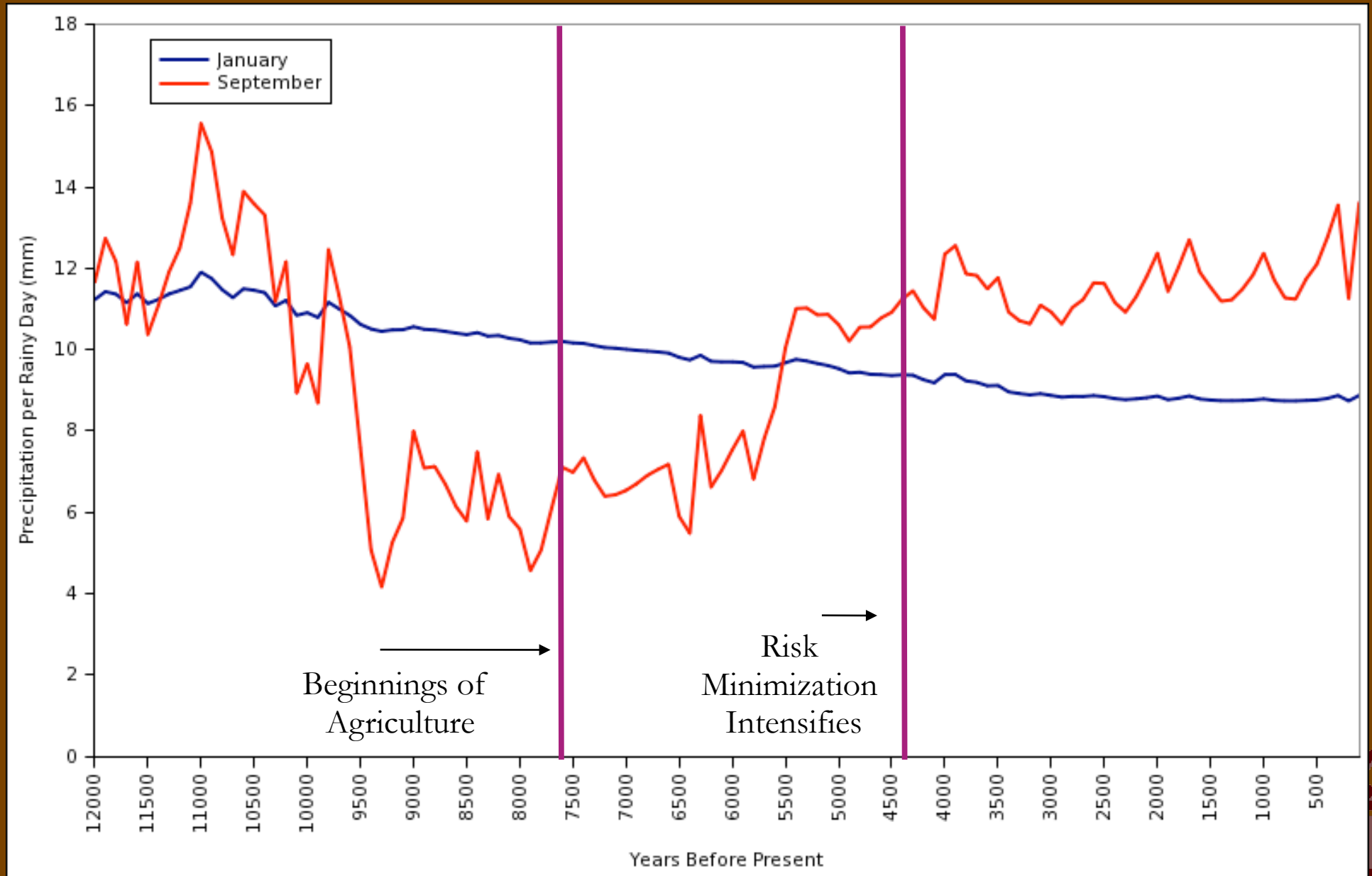
Temperature Modeling

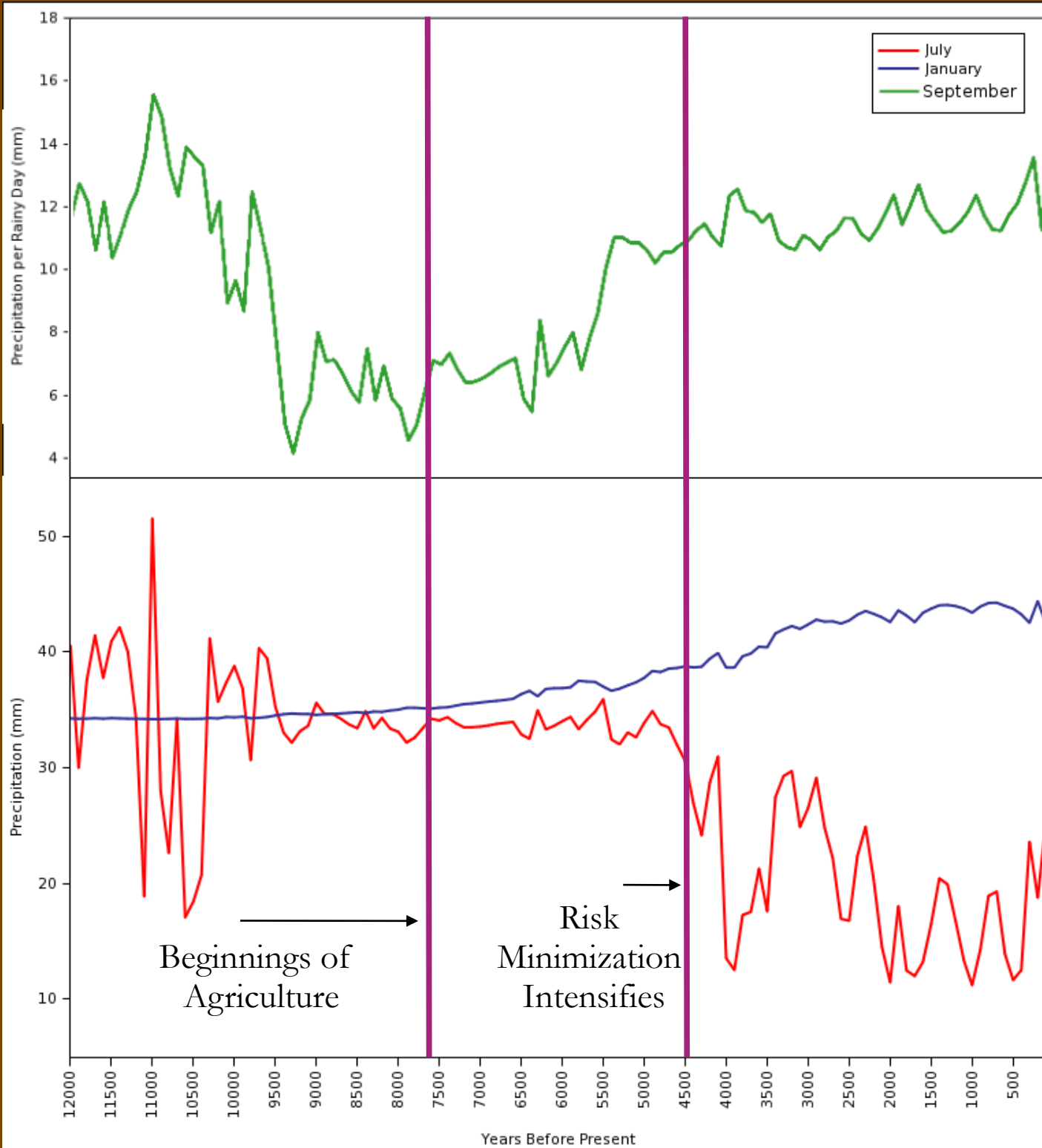


Evaporation Modeling



Rain Event Intensity Modeling





Summary

The beginning of agriculture and its rapid spread coincides with the establishment of environmental stability. While these conditions may have also benefited hunter-gatherers, it appears to have allowed agriculturalists to outcompete them.

Agricultural practices, beginning with Neolithic I, worked well for a long period of time; this led to more dependency on agriculture and vulnerability to environmental changes. As a result, when the climate did change, the effect was magnified.

The proliferation of risk minimization strategies (such as storage) and intensification of land and animal management coincide with the return of climatic instability and the onset of the Mediterranean regime in place today.



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