



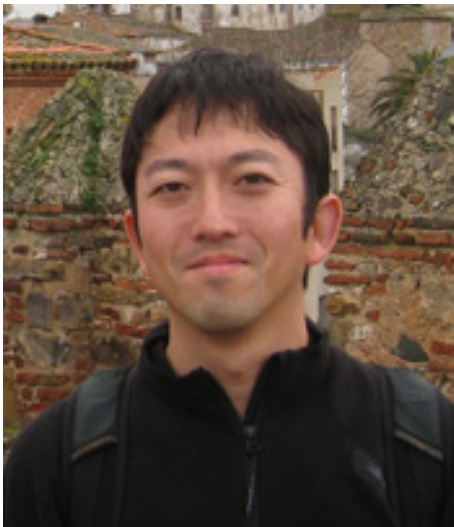
Australian
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Spatial, temporal and phylogenetic responses of British plants to climate change.

Thursday 10 May 2012 1pm

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Gould Seminar Room (Room 235) Gould building, 116 Daley Road, ANU



We have seen species shift their spatial distributions and/or phenological timing in response to climate change, and understand this phenomena to be the result of climatic niche conservatism, the retention of species' climatic niche over time. In fact, this idea is a critical assumption in most species distribution models.

That said, responses to climate change can vary greatly between species and the generality of climatic niche conservatism has rarely been looked at. In particular, the interacting dynamics of spatial and temporal niches have remained mostly unexplored.

Using historical records on phenology and the spatial distribution of British plant species, we investigated whether phenological responses to temperature determine the strength of species' climatic niche conservatism in time and space. Our findings included that there are wide variations in the degree of phenological advances and range shifts among species; that species with stronger phenological responses to temperature showed greater advances in phenology; that species with less advanced phenology

showed greater northward range shifts; and the strength of phenological responses to temperature is not randomly distributed across phylogenies.

These results point to the importance of linking phylogeny, species traits and niche dynamics in space and time for the effective understanding of species-specific responses to climate change.

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