

**Scenario**  
DOCTORAL TRAINING PARTNERSHIP

**NERC**  
SCIENCE OF THE ENVIRONMENT

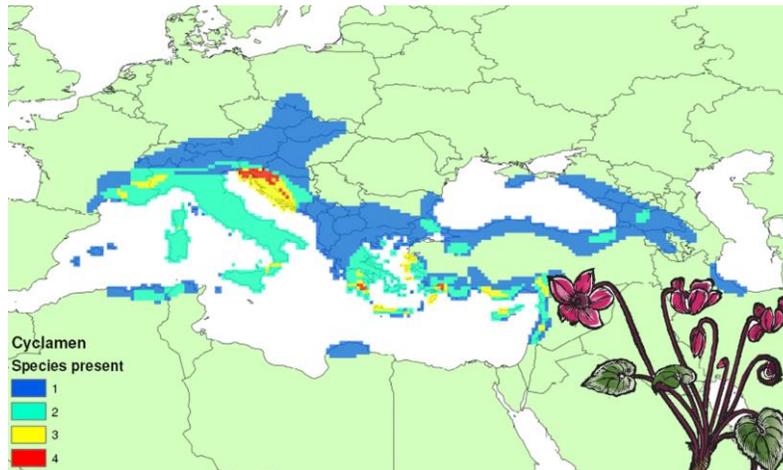
## **British garden plants: a threat to the natural environment due to climate change?**

**Lead Supervisor: Alastair Culham, University of Reading, School of Biological Sciences**

Email: [a.culham@reading.ac.uk](mailto:a.culham@reading.ac.uk)

**Co-supervisors: Brian Pickles, University of Reading, and Eleanor Webster, Royal Horticultural Society**

Britain's gardens contain many more species than are found wild in the UK. Around half of Britain's naturally surviving flora comprises non-native species. Under current climate change scenarios it is possible that garden plant species may further displace native species through escape into natural and semi-natural environments. This project aims to evaluate and contrast winners and losers under climate change. Which current garden species appear to be growing more successfully and reproducing outside the garden? Which species are becoming more difficult to grow? The research will integrate models of climate, soils and pathogen spread to gain a better understanding of which species present a risk to that natural environment in the UK. Such knowledge is fundamental to UK conservation planning on the one hand and to the horticultural industry on the other. A countryside dominated by invasive non-native plants escaped from gardens would be the Horticultural industry's equivalent of the Chernobyl nuclear disaster to the energy industry. This studentship brings together expertise in wild and garden plants, in climate, and in symbiotic ecology, offering the candidate the opportunity to develop a new field of climate change risk assessment that could ultimately lead to tools used by horticulturists and conservationists as well as influencing government legislation on the sale or introduction of new species. The project uses large public data sets, computational modelling and citizen science to develop and evaluate possible scenarios of vegetation change in the UK.



*Figure 1: optimal niche models for Cyclamen species in nature*

### **Training opportunities:**

The project offers a CASE placement with the RHS, to gain an insight into the UK garden flora and fauna and to experience scientific research in practice. This placement will offer many exciting public engagement opportunities, particularly through attendance at flower shows (such as the renowned Chelsea Flower Show) over the summer. At the University the Reading Researcher Development Programme (RRDP) within the graduate school offers a range of training opportunities. The successful student will also benefit from the large community of PhD students working within the field of plant diversity and climate change.

### **Student profile:**

We seek a student who is comfortable with computer programming in an ecological discipline. The candidate should be willing to communicate with the general public as part of the citizen science component of this project. The person should have an interest in climate change and science with societal benefit.

### **Funding particulars:**

CASE studentship with the Royal Horticultural Society

<http://www.reading.ac.uk/nercdtp>