Science and Technology Facilities Council

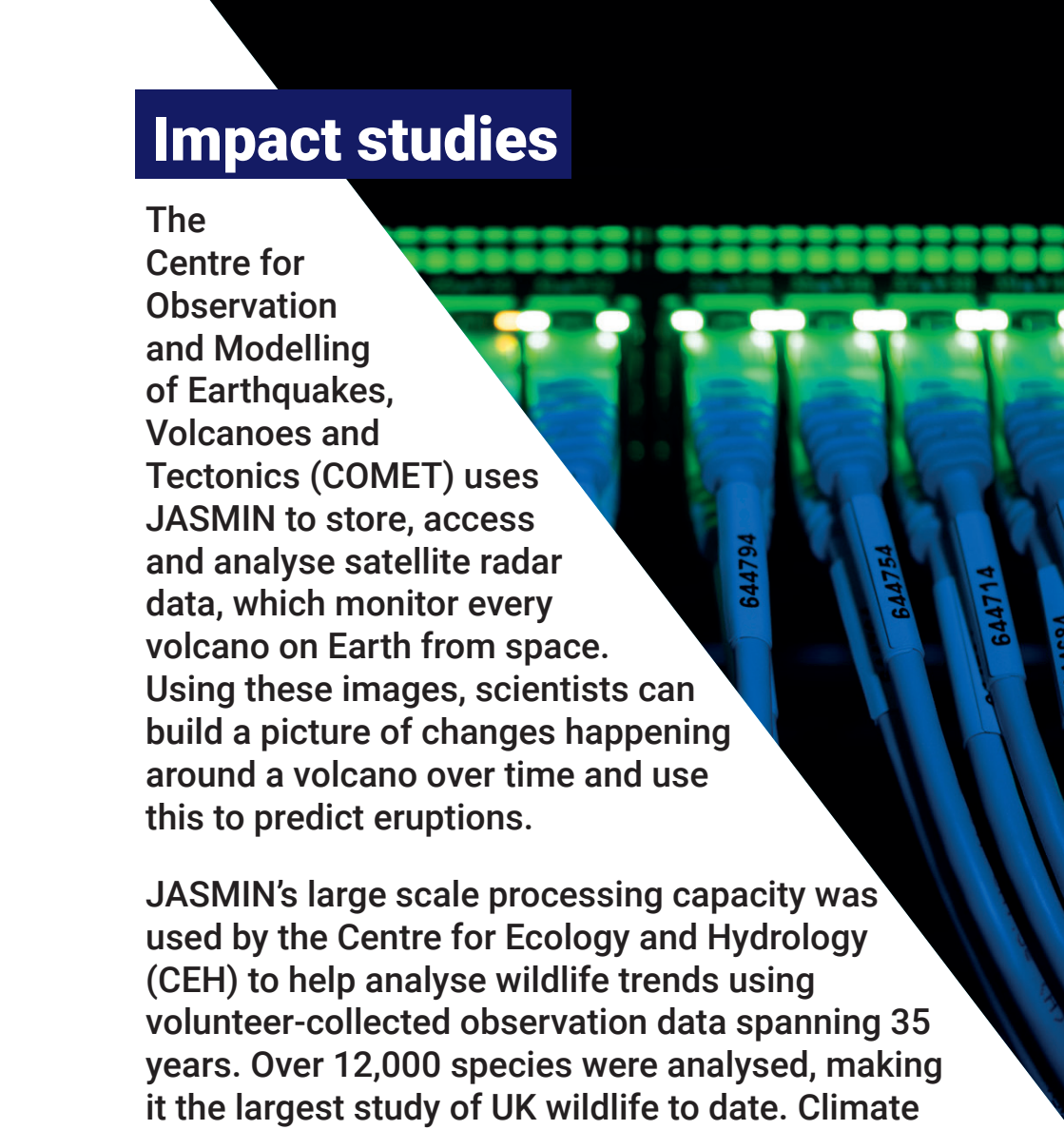
# JASMIN

***Facilitating analysis of environmental data in a globally unique computational environment.***

# About JASMIN

JASMIN is a globally unique petascale analysis facility for data-intensive environmental science. Over 160 science projects are currently supported, covering topics ranging from climate science and oceanography to air pollution, earthquake deformation and analysis of wildlife populations. Compute and storage are linked by a high bandwidth network to provide users with a mix of batch, community cloud, interactive computing and flexible data analysis. The JASMIN infrastructure was custom-built by STFC's Scientific Computing Department, in collaboration with the Centre for Environmental Data Analysis (CEDA) for the user-facing services.

# Impact studies




The Centre for Observation and Modelling of Earthquakes, Volcanoes and Tectonics (COMET) uses JASMIN to store, access and analyse satellite radar data, which monitor every volcano on Earth from space. Using these images, scientists can build a picture of changes happening around a volcano over time and use this to predict eruptions.

JASMIN's large scale processing capacity was used by the Centre for Ecology and Hydrology (CEH) to help analyse wildlife trends using volunteer-collected observation data spanning 35 years. Over 12,000 species were analysed, making it the largest study of UK wildlife to date. Climate data from the CEDA Archive (stored on JASMIN) also fed into the analyses. Researchers and policymakers will use the resulting report, which warns of the decline of most of the UK's wildlife, to inform conservation work and policy.

**11,500**
*cores*

*more than*
**700**
*virtual machines*

**450GB/s**
*IO capacity*

**45PB**
*file/object storage*

*used by over*
**2000**
*researchers worldwide*

Natural Environment Research Council

Centre for Environmental Data Analysis
SCIENCE AND TECHNOLOGY FACILITIES COUNCIL
NATURAL ENVIRONMENT RESEARCH COUNCIL

JASMIN is managed jointly by STFC's Scientific Computing Department and CEDA (Centre for Environmental Data Analysis), part of RAL Space. It is funded by the Natural Environment Research Council (NERC).