

Sectoral Information System (SIS)

Tools for climate-sensitive industry sectors



The Copernicus Climate Change Service for Global Biodiversity

Climate change puts pressure on biodiversity as well as ecosystem services that are crucial for human well-being. The C3S SIS to support Global Biodiversity provides operational climate indicators for proper assessment and management of biodiversity loss.

1 Tailored climate information for the biodiversity sector

Mitigating the threat that biodiversity faces from climate change requires proper management of ecosystems, for instance through ecosystem restoration or species dispersal measures. Yet this is often hindered by a lack of appropriate and easily available information about the future climate. Within the SIS for Global Biodiversity, we are developing tailored climate-biodiversity indicators to assess the impact of temperature, rainfall, and other atmospheric, terrestrial or oceanic variables on:

- habitat suitability
- species distribution
- species fitness and reproduction
- ecosystem services

End users in the biodiversity community can apply relevant indicators to their own activities.



Trees in Central Africa will have to adapt to climatic change.



Climate change will put the golden-headed lion tamarin's habitat under stress.

2 Service development with user input and a wealth of climate data

We combine data from the C3S Climate Data Store (CDS) with user-defined information from the biodiversity community. We exploit the full range of climate information available in the CDS including:

- historical climate data
- future climate projections
- seasonal weather forecasts up to six months in advance

We gather user requirements via meetings with experts from the biodiversity community to ensure that the service supports their needs. As such, the indicators provide operational support to decision-making challenges faced by the biodiversity and ecosystem services communities.

3 A diverse and universal service

The climate-biodiversity indicators developed within the SIS for Global Biodiversity will serve a variety of end users, including nature conservation agencies, policy makers, scientists and private companies.

The indicators are suitable for cases involving fauna and flora, the terrestrial and marine biosphere, biodiversity and ecosystem service assessments, and for different climate zones across the globe. The new service will be a flexible platform containing universal data and tools to serve a wide range of user profiles.

4 Worldwide use cases demonstrate the service

The SIS for Global Biodiversity is being developed, tested and demonstrated through six varied and concrete use cases:

- Climate change impact on the habitats of golden-headed lion tamarins in Brazil.
- Seasonal forecasts of fish distribution in the North Atlantic Ocean.



Climate change may affect the ecosystem services of grasslands and field margins, for example attraction of pollinators and provision of a buffer against soil erosion.



Changing ice conditions will affect the Baltic ringed seal.

- Climate change impact on grassland management in northern Europe.
- Seal reproduction and habitat use with changing ice conditions in the Baltic Sea.
- Climate resilience of buffer zones at field edges in China and Canada.
- Climate impact on tropical forest biodiversity in Central Africa.



Climate information helps to forecast pelagic fish distribution in the North Atlantic Ocean.



Climate Change Service

The aim of the C3S Sectoral Information System (SIS) is to provide data, tools and information to support public and private sectors in their climate-sensitive decisions and to encourage businesses to develop downstream applications to address specific needs.

C3S and the SIS are implemented by the European Centre for Medium-Range Weather Forecasts (ECMWF) on behalf of the European Union.

Find out more

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