

RECOMMENDATIONS OF THE WORKING GROUP ON
BIODIVERSITY AND CLIMATE CHANGE
EUROPEAN PLATFORM FOR BIODIVERSITY RESEARCH STRATEGY

Meeting under the Greek Presidency of the EU
Lesvos, Greece, 23rd – 26th May 2002

“We didn't lose the game; we just ran out of time.” - Vince Lombardi

To gain the knowledge necessary to halt biodiversity loss by 2010, high priority is placed on research to:

1. Improve understanding of the impacts of climate change for biodiversity and its relationships with ecosystem structure, functions, and services, in particular through:
 - Understanding past responses of ecosystems to environmental changes by collecting, analysing and comparing long-term ecological monitoring data and molecular, paleoclimatological and fossil data.
 - Developing field and laboratory experiments to obtain data on biodiversity and ecosystem responses to climate change, both in natural and planted or managed ecosystems.
 - Developing, testing and improving models that predict changes in biodiversity in response to climate change. In particular, to identify potential areas in Europe where biodiversity would change most.
2. Improve understanding of the feed-back effects resulting from impacts of ecosystem changes on biogeochemical cycles, on atmospheric composition, and on the climate.
3. Assess the significance of ecotones and climatic transition zones, in the response of their rich biodiversity to climate change.
4. Enhance understanding of past, current and future dispersal and migration of species under climate change in fragmented landscapes.
5. Develop science-based plans for the adaptation and development of networks of protected areas taking account of potential changes in climate;
6. Identify, improve the understanding, and develop methods to conserve ecosystems that potentially buffer against climatic change, such as old-growth forests and wetlands.

To develop high quality and policy relevant research on these priority areas, the EPBRs recognises the crucial importance of:

- Truly interdisciplinary research that effectively integrates natural and social sciences;
- Identification of potential synergies and further development of co-operation between the biodiversity and climate change research communities;

- Further development of the ecosystem approach, taking climate change into consideration, as this approach provides a framework for adaptive management of habitat and ecosystems;
- Criteria and rationales to help prioritise policy reforms that result in benefits for biodiversity conservation and climate change mitigation and adaptation;
- The development of effective interfaces between science and policy;
- The development of interfaces between science and stakeholders, for instance to provide guidance to organisations and individuals responsible for the planning and management of protected areas.

The above research priorities stemmed in particular from the following considerations:

- Climate change leads to changes in key elements for life, including water availability, salinity and temperature, evapo-transpiration rates, and the timing and intensity of frost.
- There is a substantial scientific literature on the interactions of species and ecosystems with climate change, indicating that there is potential for significant disruption of ecosystems under climate change, with profound effects for both marine and terrestrial biodiversity.
- Efforts to mitigate or adapt to climate change could have both beneficial and adverse impacts on biodiversity.
- Reciprocally, efforts to conserve biodiversity and make sustainable use of ecosystems may affect the rate and magnitude of climate change.
- Hence, there are opportunities for synergies – and a probable need for trade-offs – between the conservation and sustainable use objectives of the United Nations Convention on Biological Diversity (UNCBD)¹ and climate change adaptation and mitigation activities under the United Nations Framework Convention on Climate Change (UNFCCC).²
- The anticipated rate of anthropogenic climate change is unprecedented, to the point that coupled with current and predicted intensive and extensive land use changes, and with high human population densities, species and ecosystems will not have sufficient time to adapt to the new prevailing climate or to migrate.³
- Habitats and species at the limit of their adaptation to the prevailing climate may disappear as a result.
- Species in fragmented habitats are particularly vulnerable to climate change because of their restricted options for dispersion to, migration towards, or propagation in, more favourable climatic zones.
- Ecotones, which typically exhibit high species and genetic diversity, may shift radically or disappear.
- Climate change may also alter the capacity for certain species to become invasive or reduce the ability of native ecosystems to resist invasion.
- In Europe, the biodiversity of Mediterranean, Macaronesian, arctic and alpine ecosystems is likely to be particularly sensitive to climate change.
- Protected areas designated or managed to conserve particular species or habitats may become unsuited to this purpose under changed climatic conditions.

¹ UNCBD has requested SBSTTA to prepare scientific advice to facilitate the integration of biodiversity considerations in the implementation of the UNFCCC and its Kyoto Protocol.

² The Conference of the Parties of both Conventions seek closer collaboration on the interaction of climate change and biological diversity, including forest, coral reefs and the integration of biodiversity considerations in the implementation of the UNFCCC and its Kyoto Protocol.

³ The UNFCCC recognises the need to mitigate climate change through stabilisation of atmospheric greenhouse gas concentrations within a time-frame sufficient to allow time for ecosystems to adapt naturally.