



Convention on the Conservation
of European Wildlife and Natural Habitats

Standing Committee

Recommendation No. 143 (2009) of the Standing Committee, adopted on 26 November 2009, on further guidance for Parties on biodiversity and climate change

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under the terms of Article 14 of the Convention;

Having regard to the aims of the Convention to conserve wild flora and fauna and its natural habitats;

Recognising that wild flora and fauna constitute a natural heritage of aesthetic, scientific, cultural, recreational, economic and intrinsic value that needs to be preserved and handed on to future generations;

Recalling that Article 2 of the Convention requires Parties to take requisite measures to maintain the populations of wild flora and fauna at a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic requirements;

Recalling that Article 3 of the Convention requires Parties to undertake to have regard to the conservation of wild fauna and flora in their planning and development policies, and in their measures against pollution;

Recalling that Article 4 of the Convention requires Parties to take appropriate measures to ensure the conservation of the habitats of wild flora and fauna species as well as of endangered natural habitats; and give particular attention to the protection of areas of importance for migratory species;

Recognising also that climate change affects biological diversity in the territory covered by the Convention, including species, habitats and the Areas of Special Conservation Interest of the Emerald Network;

Recognising the need to adapt conservation work to the challenges of climate change so as to minimise its impacts on the species and natural habitats protected under the Convention;

Bearing in mind that climate change mitigation has a key role in reducing the impacts of climate change on biodiversity and the need for further adaptation measures;

Bearing in mind that uncertainties surrounding the precise nature of future climate change and its impacts on biodiversity should not delay practical conservation action;

Recalling the European Strategy for Plant Conservation (2008-2014); and the 2006 European Strategy for the Conservation of Invertebrates;

Having regard to other relevant Council of Europe's legal and policy frameworks such as the European Landscape Convention, the European Conference of Ministers responsible for regional planning (CEMAT), and the EUR-OPA Major Hazards Agreement;

Having regard also to Recommendation 1883 (2009) of the Council of Europe's Parliamentary Assembly on "The challenges posed by climate change" and to Recommendation 271 (2009) of the Congress of Local and Regional Authorities of the Council of Europe on "The global challenges of climate change: Local responses";

Recalling also CBD COP Decision IX/16, which urges Parties to enhance the integration of climate change considerations related to biodiversity in their implementation of the Convention;

Recalling further CBD COP Decision IX/18 on the role that protected areas and their connectivity play in addressing climate change;

Recalling the "Main messages" from the CBD Ad Hoc Technical Expert Group on Biodiversity and Climate Change, of June 2009, related to the vital role that biodiversity has to play in adaptations to the adverse impacts of climate change, and including the important contribution of adaptation activities that make use of biodiversity and associated ecosystem services;

Recognising the need to co-operate with the UN Framework Convention on Climate Change (UNFCCC) and to take account of the five-year Nairobi work programme (2005-2010) on impacts, vulnerability and adaptation to climate change;

Recognising the need to co-operate with the Convention on Biological Diversity, the Convention on Migratory Species and its related agreements (Resolution 9.7 on 'The impacts of climate change on migratory species'), and the Ramsar Convention on Wetlands (Resolution X.24 on 'Climate change and wetlands');

Recognising the ongoing work on vulnerability and impacts of climate change on the biodiversity of the Mediterranean sea, carried out under the Barcelona Convention;

Recalling the "*Carta di Siracusa*" on biodiversity, agreed by the G-8 Environment Ministers in April 2009, which includes seven actions on biodiversity and climate, such as to put in place measures "for climate change adaptation of natural and managed ecosystems since spontaneous adaptation is not expected to be sufficient to reduce the impacts on biodiversity at all levels, or on vulnerable ecosystems, or for long-term human well-being".

Recalling the EC White Paper "*Adapting to climate change: Towards a European framework for action*", of April 2009, which includes actions to address biodiversity loss and climate change in an integrated manner to fully exploit co-benefits, as well as the preparation of guidelines to deal with the impacts of climate change on the management of Natura 2000 sites;

Recalling the "*Message from Athens*" issued at the European Commission conference on 27-28 April 2009, with the main issues raised by stakeholders and a number of priorities for future EU action, including the recognition that climate policy needs to be fully complementary with biodiversity policy and these two policy areas must be developed in an integrated manner;

Recognising the work of the EU Ad Hoc Expert Working Group on Biodiversity and Climate Change, and recalling the Discussion Paper "Towards a Strategy on Climate Change, Ecosystem Services and Biodiversity";

Recognising the importance of the work of the European Environment Agency on biodiversity and climate change indicators, and the launch of the European Ecosystem Assessment (EURECA);

Recognising the importance of improved governance and increased synergies among global and regional conventions and organisations dealing with biodiversity and climate change in Europe;

Recalling Recommendation No. 122 (2006) of the Standing Committee, on the conservation of biological diversity in the context of climate change, adopted on 30 November 2006;

Recalling Recommendation No. 135 (2008) of the Standing Committee, on addressing the impacts of climate change on biodiversity, adopted on 27 November 2008;

Welcoming and bearing in mind the following expert reports “*Impacts of climate change on European invertebrates*”, by R. Wilson [doc.T-PVS/Inf (2009) 8 rev]; “*The impacts of climate change on plant species in Europe*” by V. Heywood [doc.T-PVS/Inf (2009) 9 rev]; and “*Protected areas and climate change in Europe*” by M. B. Araújo [doc.T-PVS/Inf (2009) 10 rev].

Recommends Contracting Parties to the Convention and invites Observer States to:

1. Increase efforts to improve understanding of the linkages between biodiversity and climate change (according to Recommendation 135 (2008)).
2. Make full use of the large potential for synergies and co-benefits between biodiversity conservation and climate change mitigation and adaptation, including ecosystem-based approaches¹.
3. Ensure that biodiversity considerations, including potential negative impacts, are taken fully into account in climate change adaptation and mitigation policies and measures.
4. Develop climate change adaptation activities for biodiversity, taking due account of the proposed guidance set out in the Appendix to the present Recommendation; and
5. Continue to engage in the development and application of further guidance to implement the Convention.

¹ Ecosystem-based adaptation uses biodiversity and ecosystem services in an overall adaptation strategy. It includes the sustainable management, conservation and restoration of ecosystems to provide services that help people adapt to the adverse effects of climate change. This is different from the ecosystem approach, which includes twelve steps for the integrated management of land, water and living resources to promote conservation and sustainable use in an equitable way. Source: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change «Connecting Biodiversity and Climate Change Mitigation and Adaptation» (CBD Technical Series No. 41, published in 2009).

APPENDIX

Guidance

This guidance draws on the expert reports commissioned by the Council of Europe and discussed by the Group of Experts on Biodiversity and Climate Change at its meeting in 2009. The conclusions and recommended actions provided below stem from three separate expert reports and the discussions in the Group of Experts. This guidance complements the suggested actions endorsed by the Standing Committee in 2008 (Recommendation No. 135), which in turn should be further completed and updated in the future, including a potential revision of the proposed recommendations.

Measures that may be considered as appropriate for addressing the impacts of climate change on biodiversity, for the purposes of the application of the Convention, are listed for consideration by Contracting Parties. These measures are offered as examples of action that may be taken by authorities at all levels of governance to address this issue. Other complementary measures may be identified by governments as equally appropriate to their particular circumstances and concerns. Notwithstanding these adaptation measures, there is an urgent need for climate change mitigation actions at local, regional, country and global levels. Effective mitigation is crucial to contain climate change to levels within which we may have a reasonable chance of achieving effective adaptation. However, addressing mitigation lies outside the scope of these recommendations.

The effects of climate change on ecosystems and their biological communities are complex. The impacts of a changing climate on the species and habitats protected by the Bern Convention may differ widely, depending on the species and the interactions with other species and/or their habitats, as well as according to location. The effects that climate change mitigation and adaptation measures, taken in other sectors, can have on species and habitats should also be considered in order to avoid negative impacts.

I. Invertebrates and climate change

Changes to the life history, population dynamics, distributions and diversity of invertebrates have been observed in response to recent climate change. To minimise losses in invertebrate biodiversity resulting from these changes, there is a need for conservation policy and practice to increase the adaptive capacity of natural and managed systems.

Narrow range endemics are particularly vulnerable to climate change and may have little opportunity to shift their distributions naturally to track suitable climate space. Documenting and conserving the current distributions and habitats for these species is vital if they are to have any chance of surviving climate change. Regions which support populations of many narrow range endemic species and species which are unlikely to be able to shift their distributions naturally in response to climate change include Atlantic and Mediterranean islands, and southern and central European mountain ranges.

PROPOSED ACTIONS²:

Conserve, and where possible expand, heterogeneity

- I.1. Maintain and, where possible and ecologically appropriate, add large areas and networks of heterogeneous habitat, in order to: (i) protect large invertebrate populations with low risk of local extinction; (ii) be prepared for changes to the habitat associations of species in a

² These recommended actions are based on the report by R. Wilson "Impacts of climate change on European invertebrates, document T-PVS/Inf (2009) 8.

changing climate; and (iii) provide buffering capacity against the impacts of extreme climatic or climate-related events (e.g. fire).

Conserve existing populations

I.2 Conserve existing populations of threatened invertebrate species in a range of habitats and locations across their geographic ranges. Focus efforts to conserve existing populations of species within existing high biodiversity areas and protected area networks, such as Emerald and Natura 2000 sites across Europe.

I.2 bis Develop understanding and practical application of the management of micro-habitat and micro-climate conditions for the conservation of invertebrates at current locations, in order to increase resilience against climate change.

Minimise threats to invertebrate biodiversity

I.3. Minimise threats which interact with climate change to threaten invertebrate biodiversity, including land-use intensification, abandonment of traditional farming and forestry, wetland drainage, urbanisation, pollution, and the spread of alien invasive species. As a priority, minimise these threats in systems which support the most vulnerable invertebrates, including:

- Mountains, natural and semi-natural grasslands, old growth forests, the Mediterranean biome, wetlands (including peatlands, freshwater lakes, ponds and rivers) and marine benthic systems.
- Atlantic and Mediterranean Islands, and southern and central European mountain ranges.

Facilitate range shifts

I.4. Establish or maintain landscape-scale networks of natural and semi-natural habitat in order to increase the chances that species can shift their distributions naturally, because many invertebrates will need to expand their distributions to higher latitudes or elevations in order to survive climate change.

I.5. Achieve landscape-scale ecological networks through measures including protection and active management of existing habitats, restoration of degraded habitats, and sustainable management of areas separating existing protected areas.

I.6. Consider assisted colonisation by planned conservation interventions for the conservation of species whose current distributions are unlikely to support them in the long term, and which are unlikely to reach identifiably suitable habitat and climatic conditions outside their current ranges, taking due account of potential impacts of translocation activities on species and habitats in the target area.

Monitor and research

I.7. Undertake increased monitoring and research into the responses of invertebrates and ecological systems to climate change, which is crucial to provide an evidence base for making decisions about policy and management, and include the following key areas:

- Document species distributions, habitat requirements, and climate associations for poorly known invertebrate species and regions as baseline data to predict likely responses to climate change and other environmental drivers, and to permit recommendations to be made regarding their conservation.
- Test the independent and interacting roles of climate change and other threats in driving observed changes to the population dynamics and distributions of invertebrate species,

which will help to identify underlying causes, project future ecological responses, and prioritise systems and approaches for adaptive management.

- Monitor responses of invertebrates to climate change in order to detect changes to the relative vulnerability of different species, and to ensure that resources are focused towards priority species and systems.

II. Plants and climate change

All available evidence points to the high probability that plant diversity in Europe, both at the landscape and ecosystem level, and at the species and population level will be severely impacted by climate change over the course of this century, interacting with other forms of global change such as population growth and movement and changes in disturbance regimes.

The impacts will not be uniform. Some regions will experience moderate changes and turnover of species, while others may expect serious disruption of existing ecosystems and their replacement with novel assemblages of species and the loss of considerable numbers of currently rare and endangered species in specialised habitats, such as high mountains.

Many species that are not currently threatened or on national Red Lists may be put at risk by climate change or threatened with extinction through lack of suitable niches into which to migrate. While we have developed increasingly sophisticated tools and modelling procedures, very considerable uncertainty remains about species migrations and habitat change at the local scale. It is very likely that there will be a substantial rise in the number of invasive species with serious effects on particular habitats.

While recognising that the Bern Convention, the Habitats Directive and individual countries have made major progress in determining which species require priority action through habitat conservation and the creation of ecological networks, implementation is not yet complete, especially in terms of area management and species-level conservation.

Given that baseline data are still far from complete, it is difficult to determine appropriate targets for action. There is a need for a major expansion of monitoring systems to keep the effectiveness of the Emerald and Natura 2000 networks, and the threat status of listed species, under constant observation and review. The European Strategy for Plant Conservation (ESPC), as a comprehensive tool for plant conservation, constitutes a relevant framework to address the issue of plant conservation in the face of climate change.

PROPOSED ACTIONS³:

In situ species conservation

- II.1. Undertake an urgent review of the *in situ* conservation needs of all threatened European species, not just those listed in the Bern Convention/ Habitats Directive.
- II.1 bis Incorporate the likely impacts of climate change into the assessment of threatened status of species in national Red Books or Lists.
- II.2. Prepare a conservation statement for all threatened species and take steps to accelerate the preparation and implementation of species action, management or recovery plans, as appropriate.

³ These recommended actions are based on the report by V. Heywood “The impacts of climate change on plant species in Europe”, document T-PVS/Inf (2009) 9.

- II.3. Review the state of country recovery planning for listed species and formulate management or recovery plans for those that are not so far covered.
- II. 3 bis Put in place a supra-national monitoring scheme in order to follow the evolution of species chorology across borders.
- II.4. Consider management interventions to facilitate species dispersal into suitable areas e.g. for species restricted to specific microhabitats such as cliff and rupicolous plants.
- II.5. Assess the need, within the global context of conservation strategies, for population reinforcement, *inter situs* and human assisted translocation of species that are threatened with extinction and not likely to survive in their current distribution in the face of climate change, and prepare a list of candidate species after careful weighing of potential risks and benefits.
- II.6. Assess the effectiveness and sustainability of Plant Micro-reserves (PMR) over the medium to long term.
- II.7. Explore conservation outside protected areas, notably in important areas for plant conservation as defined in the GSPC, and consider a significant expansion of off-site arrangements such as easements, set-aside, incentive-based schemes, local conservation strategies and public and private collaboration for conservation.

Ex situ species conservation

- II.8. Assess the coverage and quality of existing seed banks and botanic garden collections so as to fit conservation purposes, take steps to strengthen and improve their networks, and ensure sufficient genetic diversity within available seed and plant collections.
- II.9. Take urgent action to collect and store propagules of the majority of Bern Convention and most threatened European species that are not at present covered by such collections, either as living collections or as seed, and enhance the quality of sampling of those that already exist.

Predicting the impacts of climate change

- II.10. Apply bioclimatic modelling at least to all Bern Convention listed species and countries, and consolidate the information obtained from published modelling studies so that the results can be easily searched on a species by species basis.
- II.11. Supplement bioclimatic modelling by the application of other criteria for identifying taxa vulnerable to climate change

Invasive species

- II.12. Make important efforts to prevent the introduction and establishment of new invasives, through understanding vectors and pathways responsible for invasive species establishment, risk assessment, risk analysis, horizon scanning for potential new invasives, early warning systems, codes of conduct and control strategies.
- II.13 Encourage the wide adoption of the 2008 Bern Convention *Code of Conduct on Horticulture and Invasive Alien Species*, given that horticulture is identified as the main pathway for invasion.

III. Protected areas and climate change

European protected areas and European-wide networks of conservation areas are severely threatened by climate change. Up to 52%±12.1 of European vertebrates and plants are forecasted to lose suitable climate within existing protected areas by 2080.

Conventional views on protected-areas planning assume that successful conservation is achieved by safeguarding protected areas from the processes that threaten their existence. However, it is evident that conservation strategies, in order to be effective, need to mitigate impacts of climate change in addition to providing sustainable management of habitats and ecosystems.

Classification of Emerald and Natura 2000 networks is based on the presence of species and habitats of European concern. With climate change, species may move away from these areas but more fundamentally, changes in species priorities are expected. Both changes in the distribution of species and the changes in the identities of the species of European concern, require iterative, evidence-based and integrated approaches.

PROPOSED ACTIONS⁴:

- III.1. Ensure that existing protected areas are adequately managed and monitored so that they are in as healthy a state as possible before climatic and other change intensifies.
- III.2. Implement protected areas management to increase their resilience to climate change. This may include both on-site actions and management of the wider landscape to maintain ecosystem processes and functions.
- III.3. Take a long-term view in protected-areas management plans, and include actions for climate change adaptation (for periods up to 20 to 50 years, depending on the speed with which ecosystem changes are expected). Use adaptive management strategies and prevent the maintenance of ill-adapted habitats.
- III.4. Ensure the development of a sufficiently representative and connected network of protected areas so as to allow for species dispersal and settlement in new suitable sites as a consequence of climate change. In a context of great uncertainty, such a network would constitute an insurance policy to provide protection for most endangered species and habitats.

Improve protected area networks on the basis of further continuous research and monitoring to take account of climate-related changes in species distribution and habitat quality and consequential changes in community composition.
- III.5. Connect protected areas into functional ecological networks to allow the movement of species between them. Techniques include, as appropriate, buffer zones, stepping stones, corridors, and measures to reduce habitat fragmentation.
- III.6. Carry out integrated management of the wider countryside to alleviate the overall pressure on biodiversity and facilitate movement of species between conservation areas, as species dispersal is likely to be the most important mechanism of species adaptation to climate change-
- III.7. Consider the following possible mechanisms for implementation of off-protected-areas management:
 - regulatory prohibitions and requirements,

⁴ These recommended actions are based on the report by M. Araújo “Protected areas and climate change in Europe”, document T-PVS/Inf (2009) 10, and on the report by V. Heywood “The impacts of climate change on plant species in Europe”, document T-PVS/Inf (2009) 9.

- direct incentives for conservation on private land,
- market creation and improvement, and
- information and education instruments.

III.8 Develop and implement effective monitoring of climate change impacts on protected areas, at both site and network levels. Research and monitoring should also be implemented to develop and assess effective adaptation action for the biological interest of protected areas and networks.

III.9. Follow closely the experience of countries, within and outside Europe, where specific adaptation measures for biodiversity are being taken.

