

S06.14

Risks for ecosystems - key findings from the Fourth Assessment Report of IPCC

Andreas Fischlin(1), GF Midgley(2)

(1) IPCC - ETH Zurich, Systems Ecology, Department of Environmental Sciences, Zurich, Switzerland

*(2) IPCC - Climate Change Group, South African National Biodiversity Institute, Cape Town, South Africa
Coordinating Lead Authors of chapter 'Ecosystems, their properties, goods and services' from the
Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel of
Climate Change (IPCC) 'Climate Change 2007'*

Our worldwide understanding of how climate change impacts ecosystems around the globe has progressed since the Third Assessment Report of IPCC 'Climate Change 2001' in several crucial aspects, as assessed and summarized in the IPCC's Fourth Assessment Report (AR4). This has allowed our author team to synthesize that knowledge into new state-of-the-art assessments, including quantitative assessments, of climate change impacts on ecosystem properties and all categories of services (IPCC, 2007a,b; Fischlin et al., 2007). In a risk management context major concerns for the resilience of the Earth's ecosystems emerge, increasing rapidly with projected trends of greenhouse gas emissions and other global changes such as land-use change, pollution, and resource utilization. We identified significant risks for many supporting and regulating services, including irreversible biodiversity losses and biological feedbacks that are very likely to accelerate climate change. These findings are summarized and discussed in the context of ecosystem resilience, with its decisive relation to Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC) and specific climate policies such as the 2°C target of the EU.

References

- Fischlin, A., Midgley, G.F., Price, J.T., Leemans, R., Gopal, B., Turley, C., Rounsevell, M.D.A., Dube, O.P., Tarazona, J. & Velichko, A.A., 2007. Ecosystems, their properties, goods and services. In: Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J. & Hanson, C.E. (eds.), *Climate change 2007: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel of Climate Change (IPCC)*. Cambridge University Press, Cambridge, UK, pp. 211-272. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter4.pdf>
- IPCC, 2007a. Summary for policymakers. In: Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J. & Hanson, C.E. (eds.), *Climate change 2007: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel of Climate Change (IPCC)*. Cambridge University Press, Cambridge, UK, pp. 7-22. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-spm.pdf>
- IPCC, 2007b. Technical summary. In: Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J. & Hanson, C.E. (eds.), *Climate change 2007: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel of Climate Change (IPCC)*. Cambridge University Press, Cambridge, UK, pp. 23-78. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-ts.pdf>