



Informing climate change adaptation in forestry management

Adapting to climate change is essential to the sustainable management of forestry but it needs to be grounded in current scientific knowledge. A recent US study has brought together scientific experts and forestry managers to ascertain some general adaptation strategies for the future.

Climate change has a negative impact on forests through shifting temperatures and weather patterns, diebacks of trees, storms and fires. The European Commission's green paper¹ on forest protection has suggested preparing forests for climate change by mainstreaming adaptation into national and European policies. With the exception of existing EU legislation related to forests, biodiversity and energy, forest policies are the responsibility of Member States, and to ensure their effectiveness they should be based on the best scientific evidence. The study employed a focus group process between US climate change scientists and forest managers for two national forests to review existing climate change information and elicit recommendations for adaptation options. Not only is the dialogue process transferable to an EU context but the adaptation strategies generated from the workshop are informative.

The climate change scientists in the workshop provided research-based information on the anticipated effects of climatic change on natural resources in the two forests such as wildfire and insect outbreaks, stress due to drought, decreased water quality and loss of biodiversity. The resource managers raised issues about climate change and adaptation strategies in the existing policy context, for example the difficulty in incorporating regional climate change information into smaller scale environmental impact assessments. Bringing these two voices together generated informative discussion around evidence-based strategies to promote adaptation.

The general adaptation strategies developed in the focus groups were as follows:

1. Manage dynamically and include feedback from resource monitoring to the decision-making process. For example, management plans aiming to protect critical species should be based on moving habitats rather than static habitats.
2. Manage to enhance ecological processes rather than establish a fixed composition of species. For example, novel mixes of tree species and spacing can be planted following a fire in order to reflect the natural dynamic processes of adaptation.
3. Manage for realistic outcomes. Current conservation and biodiversity projects may have a higher failure rate in a warmer climate and it may be necessary to re-assess their viability. For example, climate change may cause rare species, such as the American spotted owl, to become even more threatened, thus challenging any programmes for successful protection.
4. Consider trade-offs and conflicts. The impacts of climate change can result in potential trade-offs and conflicts for conservation species and management plans need to account for these. For example, it is possible that some types of vegetation rapidly become dominant following the destruction of trees during a fire. This should be prevented and the natural regeneration of the forest through seeding and planting should be encouraged.

Other adaptation options suggested by the focus group include: increasing landscape diversity and biodiversity, implementing early detection of invasive species, initiatives to confer resilience at a large (or ecosystem) scale, promoting education and awareness among forestry staff and the public. The research illustrated the value of strategic dialogue between scientists and forestry managers to generate climate change adaptation strategies.

1. See: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0066:EN:NOT>

Source: Littell, J.S, Peterson, D.L., Millar, C.I., & Kathy A. O'Halloran, K.A. (2012) U.S. National Forests adapt to climate change through Science-Management partnerships. *Climatic Change* 110:269-296. DOI 10.1007/s10584-011-0066-0

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Theme(s): Forests, Climate change and energy

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To cite this article/service: "Science for Environment Policy": European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol.