Silvicultural Strategies for Adapting Forests to Climate Change; Experience in the European Atlantic Region

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The Atlantic region of western Europe stretches from southern Spain to northern Britain and covers more than 20 degrees of latitude. The countries of this region contain extensive and productive plantation forests created through afforestation and restoration policies in the last century (e.g. plantations of *Eucalyptus globulus* in Portugal, of *Pinus radiata* in NW Spain, of *Pinus pinaster* in SW France, and of *Picea sitchensis* in the British Isles). These forests are generally managed using a patch clear felling silvicultural system. However, in most countries there is a policy requirement to increase the structural and species diversity of these forests to meet the demands of multipurpose forest management. In the United Kingdom, there is consequently greater use of silvicultural approaches based on continuous cover forestry which avoids clearfelling and fosters mixed species stands, which will result in trees being grown to larger sizes and greater ages. However, our understanding of climate change suggests that these forests may also be at increasing risk from biotic and abiotic disturbances: an example of the latter is the 40 million m³ of wind damage caused in SW France by the storm ‘Klaus’ in January 2009. This paper will examine current management practices in some forest types in the region and consider how silviculture can best be used both to increase the resilience of the forests to climate change and meet the needs of multipurpose forestry.