

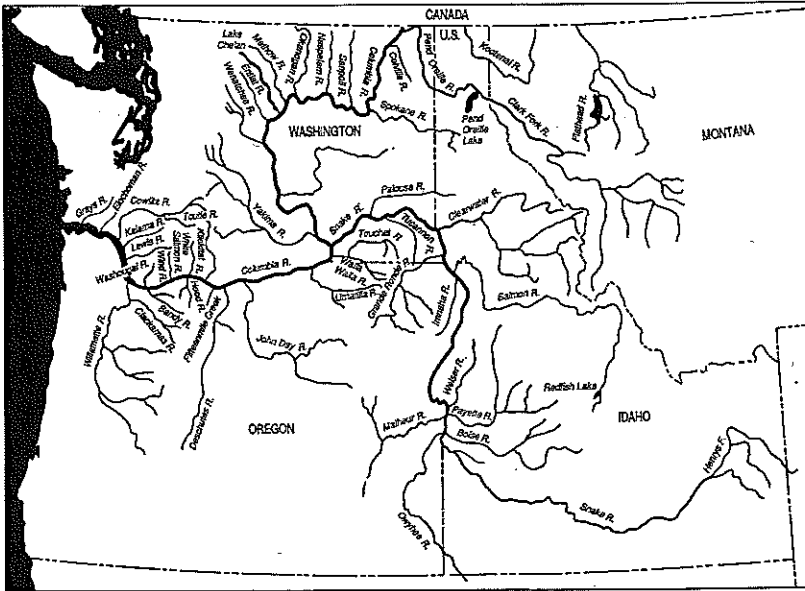
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C. Leovy and E. S. Sarachik

Determining the nature and extent of greenhouse warming is a difficult problem because the global climate system is complex and influenced by many factors. The authors show that climate warming is a certainty, but that much uncertainty surrounds predicting *how much* and *when*. They present the theoretical basis of the global

The Effect of Climate Change on Forest Ecosystems in British Columbia

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The province of British Columbia (B.C.) has been divided into forest ecosystems based on vegetation and site information. The climate stations in British Columbia have been classified with respect to these ecosystems. A summary of the 30-year climate normals for these stations grouping them by ecosystem units has been produced (Meidinger and Pojar 1991). The complete data set is on file and will provide baseline data for studies of potential effects of climate change on forest ecosystems in British Columbia.

A pilot study is under way to assess the effect of climate change on the vegetation of Vancouver Island, B.C. The above-mentioned data are being used to determine the environmental limits of the main tree species on the island. Two transects of selected climate variables across Vancouver Island have been created. Various climate change scenarios will be applied and potential changes in vegetation distribution will be assessed. A preliminary analysis has indicated that a 1° C increase in mean temperature could result in an upward movement of vegetation boundaries by 200 m in elevation.

An assessment is being made of the hazard for spruce weevil infestations in the northern interior of British Columbia. The analysis suggests that a 2° C increase in mean temperature would quadruple the area of forest susceptible to attack.

Reference

Meidinger, D. V., and J. Pojar, editors. 1991. *Ecosystems of British Columbia*. B.C. Min. For., Victoria, Canada, Special Report Series #6.

The Response of Tree Growth to Global Climate Change: Subalpine Forests of the North Cascade Mountains

David W. Peterson and David L. Peterson, National Park Service, Cooperative Park Studies Unit, College of Forest Resources (AR-10), University of Washington, Seattle, Washington 98195

The subalpine zone is an ideal place to look for a response to climate change, because it is an area where climatic conditions (especially temperature and snowpack) are limiting to tree growth. This study is examining the past and present growth of four common subalpine tree species to climate. Subalpine larch (*Larix lyallii*), whitebark pine (*Pinus albicaulis*), subalpine fir (*Abies lasiocarpa*), and