

FINSKEN: Global change scenarios for Finland in the 21st century

The fact that the global environment is changing should come as little surprise to those who know something about the history of the Earth. As any geologist will attest, the Earth's climate has alternated sharply in the past between cold glacial and warm interglacial epochs. The land surface is also highly dynamic — where there are now mountains there may once have been oceans, and *vice versa*. So what is it that distinguishes global environmental change in the 21st century from changes during the millions of years that came before? The answer, of course, is the influence of *human beings*.

While changes in the geological past can largely be explained as natural fluctuations, a human footprint is beginning to appear in the recent environmental record. The success of the human race (at least, judged in terms of its numbers) and its ability to exploit the Earth's natural resources, have together conspired to place great demands on the global "commons". The air we breathe, the soil we cultivate, the water we drink — these are some of the basic necessities of life. However, overuse, misuse and abuse of the commons has meant that they have begun to degrade to an extent that the trends are increasingly difficult to reverse. Furthermore, the effects of air pollution, land degradation, stratospheric ozone depletion and climate change are felt by everyone, regardless of their culpability. They are truly *global changes*.

Global change is occurring in Finland too, and there is much interest and concern about what this means for the future of the Finnish natural environment, economy and way of life. The FINSKEN project was initiated in 2000 as part of the Finnish Global Change Research Programme (FIGARE), to try to make sense of recent environmental trends and to attempt to construct "scenarios" of the future. The project has developed scenarios up to 2100 of four key environmental attributes:

- climate,
- sea level,
- surface ozone,
- sulphur and nitrogen deposition.

In addition, a fifth set of scenarios has been constructed to characterise future socio-economic developments in Finland, as these can be important in determining the adaptive capacity of society to meet the challenges of global change.

This special issue of Boreal Environment Research reports the full results of the FINSKEN project. It comprises an introductory paper describing the aims and methods of FINSKEN and outlining its main results, and five papers detailing each of the sets of scenarios developed in the project. The final scenarios were presented at an international seminar held in Helsinki on 27–28 November 2002, and the papers have benefitted enormously from the feedback received there from international experts and representatives of different potential end-user groups, and from the comments received subsequently from anonymous reviewers.

I would like to take this opportunity to thank all of my colleagues in FINSKEN for their unstinting efforts and the main funding agencies — the Academy of Finland and the Ministry of Transport and Communications — for their generous support.

Timothy R. Carter
FINSKEN Project Leader
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