Sverdrup, H. Sternquist, I. (ed.): **Developing Principles and Models for Sustainable Forestry in Sweden**. – Kluwer Academic Publishers, Dordrecht – Boston – London 2002 . ISBN 1-4020-0999-2. 480 pp., € 150.00, USD 147.00, GBP 96.00.

To the end of the past millennium, the concept of "sustainable development", shortly "sustainability", has appeared as a universal paradigm applicable in numerous human activities and suitable in the methodology of many sciences. Sponsored by international organisations, such as UNDP, UNESCO, and FAO, this concept may endure for many years to come, and will become a complex expression of "desirable" features in the both natural and human-induced systems. With regard to the woodlands and forest management, a strategically important environmental research called "Sustainable Forestry in Southern Sweden" (SUFOR) is being planned and performed in the period 1997–2005.

A product of typically problem-oriented programme, the book starts with general treatment of dimensions and theoretical aspects of sustainability, its general principles and modelling the forest biomes. Indeed, the respective Chapters 3 and 4 will be useful for scientists and managers who try to materialize the national programs of sustainable development in particular countries and in particular fields of agenda, as recommended by UNO and UNDP. Natural scientists will appreciate that the foundations of nature are consequently considered as the basic prerequisites for the social sustainability and economic sustainability. Temporal and spatial dimensions in forest research may differ from those in other fields of ecology and biology, however, the macro-scale inherent within the forest biome is very instructive: at the landscape level the spatio-temporal pattern should always reach far beyond the limits of individual human´s age and private "backyard".

Written by prominent Swedish specialists, the book contains comprehensive chapters on biogeochemical processes, forest vitality and stress implications, risk of windthrow and frost, principles of biodiversity preservation, forest acidification, and effects of wildlife on forestry. Many details discussed in the text and relevant figures will suit the researchers working in other regions of Europe. Especially the Chapter 12 dealing with sustainability in spruce and mixed-species stands is relevant to much of the Central European forestry which is affected by the past "Saxonian School" of silviculture and traditional landscape ecology. Norway spruce monocultures, depleting soil nutrient pool and suffering by overpopulated pests, are a nightmare of foresters, landscape ecologists, and conservationists. The Swedish scientists describe important experiments comparing single-dominant spruce plantations with mixed-species stands composed of Norway spruce and oak. With regard to the fertility of soil, sustainable growth of monocultures required addition of nutrients; in terms of economic performance the mixed stands eventually prove to be better.

Chapter 9 contains a remarkable analysis of forest management with regard to human impact on biodiversity; a variety of recommendations for biodiversity restoration is included. Obviously, the timing and intensity of human impact in forests of Southern Sweden differ from conditions encountered in Central and Western Europe in the past; however, some factors like the air pollution, soil acidification and overpopulation of insects cause similar critical features for biodiversity preservation in the ground vegetation and insects. Virgin forests are non-existent. A number of species are associated with old deciduous trees and coarse woody debris in late stages of decomposition. The authors thus stress the importance of sufficient amounts of burnt trees, old trees (>150 years), and large dead trees (diameter > 40 cm) left in the landscape after various disturbances, and, possibly, even after rational human exploitation.

Chapters 13 and 14 refer to the Asa Forest Research Park, 12 km^2 in size, a field station of the Swedish Agricultural University and a focus area of the SUFOR programme. Asa is situated in a landscape presently covered by spruce and pine woodlands, but dominated by mixed oak-beech forests in the past. Numerous experiments performed in this area thus will be of interest to many researchers searching for the suitable transformation procedures in areas where deciduous stands vanished. Chapter 13 outlines various scenarios for landscape management in such a landscape. Effects on biodiversity on land, nutrient budgets, effects on water quality, effects on tree vitality, and economic effects varied according to management programmes streamlined either to wood production or water quality or biodiversity. Chapter 14 brings about remarkable geochemical investigations of 362 soil pits excavated in Asa Research Park. The results show in conclusion that under natural sustainability a mixed coniferous-deciduous forest or a pure broad-leaved forest is by a wide margin the most profitable type of forest. Indeed, a very valuable confirmation of general observations discussed by many forest professionals. An important sub-chapter refers to the carbon pool in the soil – an important factor in carbon sequestration desirable in the period of human-induced climate change. Carbon pool in the soil is evidently much higher than that included in the biomass, which stresses the importance of soil conservation. Similar extensive biogeochemical studies were recently performed along a north-to-south transect by Schulze *et al.* (2000).

Hopefully, the conclusions of the SUFOR programme will promote further research and better management of the entire landscapes disturbed by human exploitation. The paradigm of "sustainability" may thus reach a similar universality as the much older paradigm – Darwin´s "evolution".

J. JENÍK (*Praha*)