BOOK REVIEW

From NATURE TO BE COMMANDED...

NATURE TO BE COMMANDED...*Earth-science maps applied to land and water management*

Robinson, G.D. and Spieker, A.M. (eds)

United States Geological Survey Professional Paper 950, 1978, 100 pp., U.S. Government Printing Office, Washington, D.C.

Unlike most Geological Survey Professional Papers, this large format (30 x 40 cm), expansively illustrated and impressive book is not aimed exclusively at a geological readership. Produced for local and regional government politicians and officials, and for all citizens interested in land planning and development, the book sets out to demonstrate "the value of earth science information in land and water management by showing how earth-science maps have been used in making plans and decisions in a variety of urban settings" (p. I). The style, presentation and level of detail should appeal as much to the non-specialist as to the geologist concerned with the broader theme of "geoscience and man".

The book opens with a short chapter by the editors on earth science maps in general and brief reviews of discussions on the value of earth science information in urban development. A series of eight case histories taken from six different environments within the United States convey the main message of the book. The progression of the examples is from west to east; the complexity of both the problems and the earth science information base necessary for their solution increase with this progression. All of the examples used are based on recent or current work undertaken by the U.S. Geological Survey. Numerous excellent maps, diagrams and photographs, almost all in colour, are used to illustrate the text.

The first example concerns land use controls in coastal California resulting from coastal erosion, landsliding and fault movement. The arid environment of Arizona is used to present the problems of and the need for protection of economically important metal ores and groundwater resources from urban encroachment. Two case histories from the Front Range Urban Corridor of Colorado are used to illustrate the development of gravel resources, water supplies for new communities, and the problems of development in areas of unstable ground -- caused in this case by swelling clays and subsidence over shallow coal workings.

The examples in the eastern United States are more complicated. One from the Connecticut River Valley shows the development of a land capability map and a future land use map for a rural township derived from it. Another considers the water problems of Nassau County, Long Island, New York, where questions of groundwater supply and quality, salt-water intrusion and increasingly rapid run-off have been of concern for over 40 years. The final example is the most complex, geologically, economically and politically, involving infill urban development, partly on derelict land, near Washington, D.C. In developing the plan, a series of earth sciences maps and other information were synthesized, using computer techniques, to produce a composite map of land capability for housing development in the area.

The book concludes with some remarks by the editors on the limitations of the book and of the earth science information base for the United States as a whole: for instance, the book makes no mention of some major topics such as waste management and the use of underground space, nor of several natural regions in the United States -- the glacial deposits of the Mid-West, the karst areas of the Southeast, the igneous rocks of the Northwest and Hawaii, or the permafrost areas of Alaska. The editors also draw attention to the fact that other than topographic maps, basic earth science maps are not available for much of the United States and that interpreted or derived maps, such as those presented in this book, are available for only a small proportion of the country. This highlights the obvious need for further Survey work to be done in this complex and important area.

The book includes addresses from which earth science information for the United States can be obtained, a bibliography with suggestions for further reading, as well as a list of sources relied upon in the preparation of the book. Both editors, and eleven of the fifteen other authors are employees of the U.S. Geological Survey.

This will be a most useful book not only for U.S. scientists, politicians and officials involved or interested in land use planning and management, but also for the worldwide public at large faced with similar problems and challenges. The book should probably also be reviewed by a non-specialist concerned with the day-to-day political problems of land planning and development.

J. Alan Heginbottom
Geological Survey of Canada