

Preface

The genealogy of the 'Big Book of GIS' can be traced to the emergent view, just after the 1987 annual meetings of the Association of American Geographers, that the rapidly developing field of GIS had attained sufficient maturity to warrant a large reference compendium. The original editors were appointed in 1988 and *Geographical information systems: principles and applications* appeared as a two-volume boxed set in 1991.

The book fast became the standard reference work for GIS and, despite being joined by an ever increasing number of GIS textbooks and specialised topic volumes, probably remains the most used and most heavily cited work in the field – a fitting testimony to the expertise of the international range of contributors and the quality of their work. Yet any compendium in a fast-developing field has a limited shelf-life, and this edition (initially commissioned, like the first, by Vanessa Lawrence) was commissioned to portray GIS in the late 1990s. The careers of two of the original editors had taken sharp changes in direction since the first edition, which has led them out of academia – David Maguire first became Managing Director of Environment Systems Research Institute (ESRI) UK and then Director of Product Planning at ESRI in California; and David Rhind became Managing Director and Chief Executive of Ordnance Survey (GB) before announcing his departure to be Vice Chancellor of London City University. In order to maintain the academic content and direction of much of the book, Paul Longley was invited to join the original team to co-edit the second edition.

The guiding principles for creating the second edition were fundamentally similar to those used in the first – namely to commission international experts to write benchmark reviews that could be used as a reference against which trends in the field might be assessed. 'History is bunk – but geography isn't' were the watchwords of the early planning stages: the editors decided that none of the original contributions should be retained in any shape or form, that a new list of topics should be drawn up from scratch, and that an entirely new set of

prospective contributors should be assembled without reference to the first edition. The result of this is a complete change in the range of chapters and (the original editors aside) fewer than one in ten of the contributors to this book having contributed to the first edition. This is not intended as a snub to those who were not invited to contribute a second time – all of the original contributions are of enduring relevance – but rather a conscious decision to do all practicable to ensure a complete redefinition, rather than updating, of what we believe epitomises the best in GIS books.

The first edition was divided into two main parts – 'Principles' and 'Applications' – plus an extended overview of GIS detailing definitions, history, and the context to GIS-based analysis. By the late 1990s the developing maturity of the field had made this organising structure less relevant. The material contained in the extended introduction is now much more widely known and taken for granted, while the scale and pace of developments in GIS techniques and management made it desirable to give these issues extended treatments in new and distinct sections. Thus the introduction and epilogue in this book are shorter than in the first edition, and most of the material is arranged into four parts rather than two: 'Principles', 'Technical Issues', 'Management Issues', and 'Applications'. The first edition had 56 numbered chapters, while this edition has 72 – further testimony to both the growth and diversification of the GIS field.

Much is made in this second edition, explicitly and implicitly, about the radical shifts and changes in technology that have taken place since the original 'Big Book' was published; indeed to the editors this is nowhere more apparent than in the ways in which the second edition has been put together. Prospective contributors were first approached in February 1996 and contracts were sent out shortly afterwards: in nearly all cases all significant correspondence and submission between that time and page proofing was electronic. Authors were asked to provide an extended abstract in digital form, and after refereeing by the editors these were all posted on a

WWW site (100 pages and 60 000 words!), along with author contact coordinates (specifically e-mail). The editorial collective gave detailed feedback comments to each of the contributors, particularly with regard to possible overlaps between chapters within the new book structure. Contributors were then encouraged to consult the Web site, in order to ascertain the complementarity of their contributions to others, and to resolve 'low level' problems of overlap and omission with their fellow contributors (again by e-mail). Thus an additional measure of self-regulatory checking was introduced to complement strategic editorial control.

As before, the role of the editors has been to provide focus and direction, and to ensure that the whole of the book is greater than the sum of its individual parts. We feel that, to some extent at least, the 'democratisation' and opening up of dialogue between contributors has made this second edition still more tightly integrated and coordinated than its highly successful forebear. A related point is that all of the contributions were received in digital form and were switched many times between the editors in Bristol, Santa Barbara, Redlands, and Southampton – and innumerable 'field' locations between and beyond. Most of the artwork and colour plates were transmitted to the *GIS World* Web site in Colorado prior to redrawing and sizing. Together, these changes have reduced the lead time between writing

and availability of the final product. Whilst it is the hope of the authors that this second edition will prove to be at least as durable as the first, it is also hoped that this reduction in production time will lend the book the freshest possible feel to its first readers.

The successful completion of a major project such as this book requires the cooperation and understanding of many key individuals. We thank firstly our colleagues for their impressive and thoughtful contributions. Vanessa Lawrence originally commissioned this work – her subsequent move to Autodesk represents a considerable loss to the GI publishing industry – and was succeeded by Heather Burkinshaw and Roy Opie at GeoInformation International. Steve Attmore undertook the huge task of overseeing the book's production editing and Rob Garber oversaw the transfer of the project to John Wiley and Sons, Inc. An extended editorial meeting was lubricated by Willi Germann's gin and tonics, and Joas made excellent sandwiches. Finally, we thank our wives Mandy, Fiona, Heather, and Christine for putting up with our erratic but intensive work patterns during the project.

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