PREFACE

In the preface that Andy Mitchell asked me to write to the first volume of The ESRI Guide to GIS Analysis I wrote about how "spatial analysis has often seemed inaccessible to many GIS users—too mathematical to understand, too difficult to implement, and lacking in good textbooks and guides." Volume I seemed to me to be exactly what was needed by GIS users without a strong background in mathematics and statistics—a well-illustrated, accessibly written discussion of the main methods and how they can be used to answer important questions. I wrote that "ESRI plans to follow and build on this with a second more advanced book, which will cover some of the more complex methods." But I had serious doubts about that second project, since it would have to venture into more difficult territory, including the forbidding topics of statistical inference and hypothesis testing.

As an instructor I have had abundant first-hand experience of the difficulties students often have with these concepts. But I also know how powerful GIS can be. Ideas that used to sound impossibly dry and uninteresting when presented on a blackboard with chalk come alive and compelling when introduced through the colorful, practical medium of GIS. Arguments made in words are never as accessible as arguments presented in pictures, particularly when those pictures refer to real issues, such as public health, crime, or the environment.

Like its predecessor, this new book is a triumph. It combines the relaxed, intuitive style of Andy Mitchell's writing and design with access to the wealth of applications and examples that ESRI has been storing up over the 35 years of its existence. It doesn't short-change the reader, but instead confronts sampling, spatial dependence, and statistical inference head-on. But it does it in a gentle way that minimizes mathematical notation, and relies instead on an abundance of colorful graphics and interesting examples. Many of the issues are at the cutting edge and far from settled, including the troublesome topic of cluster detection, but readers will find them treated in a straightforward way with plenty of directions for further, deeper reading.

The book should be required reading for everyone who ventures into the world of spatial analysis with GIS. The two books together cover much of the ground, but they leave plenty of room for additional volumes, and I for one am looking forward to seeing Andy's next production in a few years.

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