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## *Preface*

When I started to use GIS as part of my research in the late 1990s, I found that while there were plenty of books which could teach me how to use GIS as a tool for doing tasks in terrestrial geography, there were none which did the same for marine biology, or even terrestrial ecology. Indeed, at that stage GIS was a tool that few marine biologists used in their every day research. As a result, I had to learn the hard way, through trial and error. As soon as I had learned to do a few basic tasks, I found that others also wanted to learn to do similar things and would ask me for advice. As my knowledge grew, so did the variety of tasks I was asked to help others with.

Further on in my career, I found myself regularly teaching students and other researchers how to get started in GIS and how to do specific tasks, some of which were more complicated than others. In doing this, I not only learned a great deal about using GIS in marine biological research, but I also found that most marine biologists coming to GIS for the first time found it a very daunting prospect. At the root of this problem was the fact that almost all the help which was available to them was written by geographers and not biologists, and used a completely different vocabulary to the one they were familiar with. Even tasks as simple as getting data into a GIS project so that it would actually plot in the right place was in no way intuitive for biologists.

This led me to develop new ways of introducing people to GIS and to teaching them how to do the types of basic tasks they would need to do on a regular basis. In most cases, I found that I could get even the most technophobic marine biologist or ecologist up and running with their GIS project within a matter of hours, and it was simply a matter of showing them that GIS was not actually big and scary, but rather that it was a useful tool that could benefit their research. Therefore, much of my knowledge of GIS comes from teaching other people how to use it, and often I have remained only one step ahead of those who I have been teaching, learning things as people wanted me to teach them how to do it, and I probably owe my GIS skills as much to them as to myself.

Over a decade later, the use of GIS is now central to many aspects of marine biological and ecological research, and is now taught on many undergraduate and postgraduate courses. However, much of this instruction is still based on materials developed for terrestrial geographers, and many marine biologists still find it hard to transfer what they learn into marine biological research. As a result, I have often been asked to recommend books which people can buy to help them learn GIS in a way that will actually allow them to use it on a practical basis. Since I was continually thwarted in attempts to find a suitable book to recommend, I finally decided that I should just write one myself, in the hope that others would find it useful, and so that I could finally have a book that I would be happy to recommend to other marine biologists and ecologists.

The result is the book which you are now holding, and it distils many of the lessons I have learned in both using GIS in marine biology (and indeed in other areas of ecology ranging from Polish bats and South American birds to extinct lynx in Scotland) and in teaching it to other marine biologists and ecologists. As a result, this book would not have been possible without the many students and researchers whom I have worked with over the years and who have inspired me to learn much more about GIS in order to help them with their research than I ever would have done on my own. So, in no particular order (and with apologies to those whom I may have forgotten), thanks to Graham Pierce, Karen Hall, Jennifer Learmonth, Caroline Schweder, Laura Mandleberg, Barry Nicholls, Sarah Canning, Sonia Mendes, Caroline Weir, Wezddy del Torro, Ruth Fernandez and Lee Hastie. Finally, and most importantly, thanks to Sarah Bannon for her

help and support, both while writing this book, and with life beyond it (as, believe it or not, there is life outside of GIS).