

Contents

PREFACE	v
ACKNOWLEDGMENTS	vii
CHAPTER 1: INTRODUCING GIS ANALYSIS	9
What is GIS analysis?	11
Understanding geographic features	12
Understanding geographic attributes	16
CHAPTER 2: MAPPING WHERE THINGS ARE	21
Why map where things are?	22
Deciding what to map	24
Preparing your data	25
Making your map	26
Analyzing geographic patterns	35
CHAPTER 3: MAPPING THE MOST AND LEAST	37
Why map the most and least?	38
What do you need to map?	40
Understanding quantities	42
Creating classes	46
Making a map	56
Looking for patterns	66
CHAPTER 4: MAPPING DENSITY	69
Why map density?	70
Deciding what to map	72
Two ways of mapping density	73
Mapping density for defined areas	75
Creating a density surface	78

CHAPTER 5: FINDING WHAT'S INSIDE	87
Why map what's inside?	88
Defining your analysis	90
Three ways of finding what's inside	96
Drawing areas and features	99
Selecting features inside an area	101
Overlaying areas and features	105
CHAPTER 6: FINDING WHAT'S NEARBY	115
Why map what's nearby?	116
Defining your analysis	118
Three ways of finding what's nearby	121
Using straight-line distance	123
Measuring distance or cost over a network	135
Calculating cost over a geographic surface	142
CHAPTER 7: MAPPING CHANGE	149
Why map change?	150
Defining your analysis	152
Three ways of mapping change	159
Creating a time series	161
Creating a tracking map	165
Measuring and mapping change	168
WHERE TO GET MORE INFORMATION	175
MAP AND DATA CREDITS	179
INDEX	183