

CONTENTS

Preface and acknowledgments	ix	CHAPTER 3: SCALE AND TIME	45
CHAPTER 1: PLANNING MAPS	1	How cartographers use scale	46
Designing for map purpose	2	Large versus small	46
Audience	2	Projections affect scale	47
Visual hierarchy in layout	4	Data types through scale	50
Planning a layout	6	Terrain through scale	50
Balancing empty spaces	7	Water through scale	53
Refining a layout	10	Place data through scale	58
Experimentation and critique	13	Generalizing for smaller scales	64
Map projections in design	14	Simplify	65
Shape within layout	14	Aggregate	66
Choosing projection properties	16	Collapse	68
UTM projections	17	Eliminate	68
Custom azimuthals	18	Mapping through time	71
CHAPTER 2: BASEMAP BASICS	21	Basemaps for past times	71
Landforms	22	Time series	72
Elevation	22	CHAPTER 4: EXPLAINING MAPS	75
Terrain shading	26	Map legends	76
Curvature	29	Data legends	76
Land use	31	Basemap legends	79
Imagery	31	Customized legends	81
Land cover	34	Wise wording	83
Property	36	Hierarchy in text content	84
Vector base	38	Describing mapped calculations	86
Water	38	Attending to line logic	90
Boundaries	39	Refining marginal elements	92
Transportation	40	Scale indicators	92
Point data	41	Direction indicators	93
Customizing base to purpose	42	Overdoing decoration	94

CHAPTER 5: SHARING MAPS	97	Ambiguity and contradiction in classification with type. .136
Designing for map media	98	Transparency and anti-aliasing138
Resolution	98	Label placement139
Map size and viewing distance	99	Point label placement.139
Color quality	101	Line label placement144
Choosing export options.	103	Area label placement146
Raster export formats	104	Dense label placement and trade-offs between rules . .150
Vector export formats	106	
Transparency	108	CHAPTER 8: COLOR BASICS 153
Copyright and open access.	108	Perceptual dimensions154
Original work in cartography	109	Hue154
Rights and permissions.	109	Lightness157
Public licenses and open data	110	Chroma.158
		Perceptual color systems 161
CHAPTER 6: TYPE BASICS 113		Three-dimensional color spaces 161
Fonts 114		Not HSV164
Font anatomy.	114	Color cubes.166
Categories of fonts	115	How to mix color 167
Font choice	116	General guidelines168
Type styles and font families.	117	CMYK mixing.170
Special characters	119	RGB mixing172
Font formats and permissions	120	Perceptual mixing.173
Label size 121		CHAPTER 9: COLOR ON MAPS 175
Character size	121	Color schemes for maps 176
Kerning, tracking, and character spacing	122	Sequential schemes176
Line spacing.	122	Diverging schemes.178
Type effects 124		Qualitative schemes.180
Callouts.	124	Bivariate color schemes 183
Shadows	125	Transparent combinations184
Halos.	126	Sequential-sequential.184
		Diverging-diverging.186
CHAPTER 7: LABELING MAPS 129		Qualitative-sequential.188
Map text 130		Adjusting color selections 188
Graphic map text.	130	Unexpected color changes.189
Dynamic labeling	130	Colors for the colorblind191
Annotation.	131	Custom color ramps196
Labels as symbols 132		
Indicators of feature category.	133	
Indicators of feature hierarchy	135	

CHAPTER 10: CUSTOMIZING SYMBOLS	199		
Point symbols	200		
Point symbol size	200		
Point symbol shape	203		
Point symbol angle	205		
Line and area symbols.	207		
Line symbol size.	207		
Line symbol pattern	208		
Area pattern	211		
Eight visual variables.	213		
Visual variables for ordered data	213		
Visual variables for qualitative data	214		
CHAPTER 11: COMBINING SYMBOLS	215		
Multivariate map symbols	216		
Overlaid symbols	217		
Bivariate symbols	218		
Visual variable pairs	220		
		Quant/Quant.	220
		Qual/Quant	221
		Qual/Qual	222
		Put it all together	224
		Label design.	224
		Coloring terrain	226
		Precinct patterns	226
		Designing better maps	228
		APPENDIX	229
		ColorBrewer	229
		Colorblind diagram.	244
		Acronyms.	245
		Resources	247
		About the author	249
		Index	251