

# Contents

*Preface x*

## CHAPTER ONE

### Introduction 3

What Is Geography	4
Evolution of the Discipline	4
Subfields of Geography	6
Why Geography Matters	6
Some Core Geographic Concepts	7
Location, Direction, and Distance	7
<i>Location</i>	7
<i>Direction</i>	9
<i>Distance</i>	9
Size and Scale	10
Physical and Cultural Attributes	11
Attributes of Place Are Always Changing	12
Interrelations between Places	13
Place Similarity and Regions	14
<i>Spatial Distributions</i>	14
<i>Types of Regions</i>	15
Geography's Themes and Standards	18
Organization of This Book	18
<i>Key Words</i>	21
<i>For Review &amp; Consideration</i>	21
<i>Selected References</i>	21

## CHAPTER TWO

### Maps 23

Maps as the Tools of Geography	24
Locating Points on a Sphere	24
The Geographic Grid	24
Land Survey Systems	26
Map Projections	29
Area	29
Shape	30
Distance	30
Direction	31
Scale	32
Types of Maps	32
Topographic Maps and Terrain Representation	33
Thematic Maps and Data Representation	35

*Point Symbols* 36

*Area Symbols* 37

*Line Symbols* 38

Map Misuse 40

Geographic Information Technologies 42

    Remote Sensing 42

    The Global Positioning System 45

    Virtual and Interactive Maps 46

Integrating Technology: Geographic Information Systems 46

    The Geographic Database 47

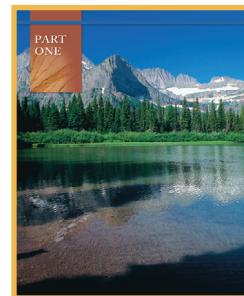
    Applications of GIS 48

*Summary of Key Concepts* 49

*Key Words* 50

*For Review & Consideration* 50

*Selected References* 51



## The Earth Science Tradition 53

## CHAPTER THREE

### Physical Geography: Landforms 55

Earth Materials	56
Igneous Rocks	56
Sedimentary Rocks	56
Metamorphic Rocks	57
Geologic Time	57
Movements of the Continents	58
Tectonic Forces	60
Diastrophism	60
<i>Broad Warping</i>	60
<i>Folding</i>	61
<i>Faulting</i>	61

Volcanism	64
Gradational Processes	65
Weathering	66
<i>Mechanical Weathering</i>	66
<i>Chemical Weathering</i>	66
Mass Movement	67
Erosional Agents and Deposition	67
<i>Running Water</i>	67
<i>Stream Landscapes</i>	69
<i>Groundwater</i>	74
<i>Glaciers</i>	75
<i>Waves, Currents, and Coastal Landforms</i>	76
<i>Wind</i>	78
Landform Regions	79
<i>Summary of Key Concepts</i>	84
<i>Key Words</i>	84
<i>For Review &amp; Consideration</i>	85
<i>Selected References</i>	85

## CHAPTER FOUR

### Physical Geography: Weather and Climate 87

Air Temperature	88
Earth Inclination	88
Reflection and Reradiation	89
Lapse Rate	92
Air Pressure and Winds	93
Pressure Gradient Force	94
The Convection System	94
Land and Sea Breezes	95
Mountain and Valley Breezes	95
The Coriolis Effect	96
The Frictional Effect	96
The Global Air-Circulation Pattern	96
Ocean Currents	98
Moisture in the Atmosphere	98
Types of Precipitation	99
Storms	103
Climate Regions	106
Tropical Climates	108
<i>Tropical Rain Forest</i>	109
<i>Savanna</i>	112
<i>Monsoon</i>	113
Dryland Climates	113
<i>Hot Deserts</i>	113
<i>Midlatitude Deserts and Semideserts</i>	114
Humid Midlatitude Climates	114
<i>Mediterranean Climate</i>	114
<i>Humid Subtropical Climate</i>	116
<i>Marine West Coast Climate</i>	116

<i>Humid Continental Climate</i>	117
Subarctic and Arctic Climates	119
Highland Climates	119
Climatic Change	119
Long-Term Climatic Change	121
Short-Term Climatic Change	121
The Greenhouse Effect and Global Warming	121
<i>Summary of Key Concepts</i>	124
<i>Key Words</i>	124
<i>For Review &amp; Consideration</i>	124
<i>Selected References</i>	125

## CHAPTER FIVE

### The Geography of Natural Resources 127

Resource Terminology	128
Renewable Resources	128
Nonrenewable Resources	129
Resource Reserves	129
Energy Resources and Industrialization	130
Nonrenewable Energy Resources	131
Crude Oil	131
Coal	135
Natural Gas	136
Oil Shale and Tar Sands	138
Nuclear Energy	140
<i>Nuclear Fission</i>	140
<i>Nuclear Fusion</i>	141
Renewable Energy Resources	141
Biomass Fuels	141
<i>Wood</i>	141
<i>Waste</i>	142
Hydropower	143
Solar Energy	144
Other Renewable Energy Resources	146
<i>Geothermal Energy</i>	146
<i>Wind Power</i>	148
Nonfuel Mineral Resources	148
The Distribution of Nonfuel Minerals	150
Copper: A Case Study	151
Land Resources	153
Soils	153
Wetlands	157
Forest Resources	158
<i>U.S. National Forests</i>	161
<i>Tropical Rain Forests</i>	162
Resource Management	164
<i>Summary of Key Concepts</i>	166
<i>Key Words</i>	166
<i>For Review &amp; Consideration</i>	166
<i>Selected References</i>	167



## The Culture—Environment Tradition 169

### CHAPTER SIX

#### Population Geography 171

- Population Growth 172
- Some Population Definitions 173
  - Birth Rates 174
  - Fertility Rates 175
  - Death Rates 178
  - Population Pyramids 181
  - Natural Increase and Doubling Times 183
- The Demographic Transition 187
  - The Western Experience 187
  - A Divided World Converging 189
- The Demographic Equation 191
  - Population Relocation 191
  - Immigration Impacts 193
- World Population Distribution 194
- Population Density 196
  - Overpopulation 197
  - Urbanization 198
- Population Data and Projections 200
  - Population Data 200
  - Population Projections 200
- Population Controls 201
- Population Prospects 202
- Momentum 203
- Aging 204

*Summary of Key Concepts 205*

*Key Words 205*

*For Review & Consideration 206*

*Selected References 206*

### CHAPTER SEVEN

#### Cultural Geography 209

- Components of Culture 210
- Interaction of People and Environment 212

- Environments as Controls 212
- Human Impacts 213
- Subsystems of Culture 214
  - The Technological Subsystem 215
  - The Sociological Subsystem 218
  - The Ideological Subsystem 219
- Culture Change 220
  - Innovation 222
  - Diffusion 223
  - Acculturation 225
- Cultural Diversity 228
- Language 228
  - Language Spread and Change 230
  - Standard and Variant Languages 233
  - Language and Culture 235
- Religion 237
  - Classification and Distribution of Religions 239
  - The Principal Religions 242
    - Judaism 242*
    - Christianity 243*
    - Islam 245*
    - Hinduism 247*
    - Buddhism 248*
    - East Asian Ethnic Religions 249*
- Ethnicity 250
- Gender and Culture 253
- Other Aspects of Diversity 256
  - Summary of Key Concepts 257*
  - Key Words 257*
  - For Review & Consideration 258*
  - Selected References 258*

### CHAPTER EIGHT

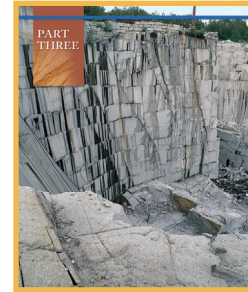
#### Spatial Interaction 261

- The Definition of Spatial Interaction 262
- Distance and Spatial Interaction 262
- Barriers to Interaction 263
- Spatial Interaction and Innovation 265
- Individual Activity Space 265
  - Stage in Life 268
  - Mobility 269
  - Opportunities 269
- Diffusion and Innovation 269
  - Contagious Diffusion 270
  - Hierarchical Diffusion 271
- Spatial Interaction and Technology 272
  - Automobiles 272
  - Telecommunications 273
- Migration 275
  - Types of Migration 275

Incentives to Migrate	277
Barriers to Migration	281
Patterns of Migration	285
Globalization	287
Economic Integration	287
<i>International Banking</i>	287
<i>Transnational Corporations</i>	288
<i>Global Marketing</i>	288
Political Integration	288
Cultural Integration	288

<i>Summary of Key Concepts</i>	290
<i>Key Words</i>	290
<i>For Review &amp; Consideration</i>	291
<i>Selected References</i>	291

<i>Summary of Key Concepts</i>	327
<i>Key Words</i>	328
<i>For Review &amp; Consideration</i>	328
<i>Selected References</i>	329



## CHAPTER NINE

### Political Geography 293

National Political Systems	295
States, Nations, and Nation-States	295
Evolution of the Modern State	296
Challenges to the State	298
Geographic Characteristics of States	298
<i>Size</i>	298
<i>Shape</i>	300
<i>Location</i>	301
<i>Cores and Capitals</i>	301
Boundaries: The Limits of the State	303
<i>Natural and Artificial Boundaries</i>	304
<i>Boundaries Classified by Settlement</i>	304
<i>Boundaries as Sources of Conflict</i>	305
Centripetal Forces: Promoting State Cohesion	309
<i>Nationalism</i>	309
<i>Unifying Institutions</i>	310
<i>Organization and Administration</i>	310
<i>Transportation and Communication</i>	310
Centrifugal Forces: Challenges to State Authority	313
Cooperation Among States	316
Supranationalism	317
The United Nations and Its Agencies	317
<i>Maritime Boundaries</i>	318
<i>An International Law of the Sea</i>	318
<i>UN Affiliates</i>	320
Regional Alliances	320
<i>Economic Alliances</i>	320
<i>Military and Political Alliances</i>	322
Local and Regional Political Organization	323
The Geography of Representation: The Districting Problem	323
The Fragmentation of Political Power	324

## The Location Tradition 331

## CHAPTER TEN

### Economic Geography 333

The Classification of Economic Activity and Economies	334
Categories of Activity	335
Types of Economic Systems	335
Stages of Development	337
Primary Activities: Agriculture	339
Subsistence Agriculture	340
<i>Extensive Subsistence Agriculture</i>	341
<i>Intensive Subsistence Agriculture</i>	342
Expanding Crop Production	343
<i>Intensification and the Green Revolution</i>	344
Commercial Agriculture	346
<i>Production Controls</i>	346
<i>A Model of Agricultural Location</i>	348
<i>Intensive Commercial Agriculture</i>	349
<i>Extensive Commercial Agriculture</i>	350
<i>Special Crops</i>	352
<i>Agriculture in Planned Economics</i>	352
Other Primary Activities	353
Fishing	353
Forestry	355
Mining and Quarrying	356
Trade in Primary Products	358
Secondary Activities: Manufacturing	360
Industrial Locational Models	360
Other Locational Considerations	361
<i>Transport Characteristics</i>	362
<i>Agglomeration Economies</i>	362
<i>Just-in-Time and Flexible Production</i>	364



<i>Comparative Advantage, Outsourcing, and Offshoring</i>	364
<i>Imposed Considerations</i>	366
Transnational Corporations (TNCs)	366
World Manufacturing Patterns and Trends	368
High-Tech Patterns	369
Tertiary and Beyond	371
Tertiary Services	372
Beyond Tertiary	374
Services in World Trade	375
<i>Summary of Key Concepts</i>	377
<i>Key Words</i>	378
<i>For Review &amp; Consideration</i>	378
<i>Selected References</i>	379

## CHAPTER ELEVEN

### An Urban World 381

An Urbanizing World	382
Origins and Evolution of Cities	384
Defining the City Today	385
The Location of Urban Settlements	386
The Economic Base	388
Functions of Cities	389
Cities as Central Markets	389
Cities as Centers of Production and Services	389
Cities as Centers of Administration and Institutions	391
Systems of Cities	391
The Urban Hierarchy	391
Rank-Size Relationships	392
World Cities	392
Inside the City	393
Patterns of Land Use	393
<i>The Central Business District</i>	393
<i>Outside the Central Business District</i>	394
<i>Models of Urban Form</i>	395
Changes in Urban Form	397
<i>Suburbanization</i>	398
<i>Decline of the Central City</i>	399
<i>Downtown Renewal and Gentrification</i>	401
Social Areas of Cities	404
<i>Family Status</i>	404
<i>Social Status</i>	404
<i>Ethnicity</i>	405
Institutional Controls	406
Global Urban Diversity	407
Western European Cities	407
Eastern European Cities	408
Rapidly Growing Cities in the Developing World	410
<i>Colonial and Non-Colonial Antecedents</i>	411
<i>Urban Primacy and Rapid Growth</i>	412

<i>Squatter Settlements</i>	413
<i>Planned Cities</i>	414

<i>Summary of Key Concepts</i>	415
<i>Key Words</i>	415
<i>For Review &amp; Consideration</i>	416
<i>Selected References</i>	416

## CHAPTER TWELVE

### Human Impact on the Environment 419

Ecosystems	420
Impact on Water	421
Availability of Water	422
Modifications of Streams	424
Water Quality	425
Agricultural Sources of Water Pollution	426
<i>Fertilizers</i>	426
<i>Biocides</i>	427
<i>Animal Wastes</i>	427
Other Sources of Water Pollution	428
<i>Industry</i>	429
<i>Mining</i>	429
<i>Municipalities and Residences</i>	430
Controlling Water Pollution	430
Impact on Air and Climate	431
Air Pollutants	431
Factors Affecting Air Pollution	432
Acid Rain	433
Photochemical Smog	434
Depletion of the Ozone Layer	436
Controlling Air Pollution	438
Impact on Landforms	439
Landforms Produced by Excavation	439
Landforms Produced by Dumping	440
Formation of Surface Depressions	440
Impact on Plants and Animals	441
Habitat Loss or Alteration	441
Hunting and Commercial Exploitation	442
Introduction of Exotic Species	444
Poisoning and Contamination	445
Preserving Biodiversity	447
<i>Legal Protection</i>	447
<i>Nongovernmental Organizations (NGOs)</i>	447
Solid-Waste Disposal	447
Municipal Waste	447
<i>Landfills</i>	448
<i>Incineration</i>	450
<i>Source Reduction and Recycling</i>	451
Hazardous and Radioactive Wastes	452
<i>Hazardous Waste</i>	452
<i>Radioactive Waste</i>	453

*Summary of Key Concepts* 455  
*Key Words* 456  
*For Review & Consideration* 456  
*Selected References* 457



## The Area Analysis Tradition 459

### CHAPTER THIRTEEN

#### The Regional Concept 461

The Nature of Regions 461  
 The Structure of This Chapter 464  
 Part I: Regions in the Earth Science Tradition 464  
   Landforms as Regions 464

Dynamic Regions in Weather and Climate 465  
 Natural Resource Regions 466  
 Part II: Regions in the Culture–Environment  
 Tradition 469  
   Population as Regional Focus 469  
   Language as Region 470  
   Mental Regions 471  
   Political Regions 472  
 Part III: Regions in the Locational Tradition 473  
   Economic Regions 474  
   Urban Regions 475  
   Ecosystems as Regions 477  
  
*Summary of Key Concepts* 480  
*Key Words* 480  
*For Review & Consideration* 480  
*Selected References* 480

*Appendices* 483

*Glossary* 503

*Index* 514