# Contents

-	•	
Pro	face	1
110	ucc	n

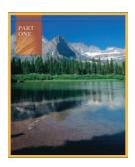
#### CHAPTER ONE

#### Introduction 1

What Is Geography? 2 Evolution of the Discipline 3 Subfields of Geography 5 Why Geography Matters 5 Some Core Geographic Concepts 5 Location, Direction, and Distance 6 Location 7 Direction 8 Distance 8 Size and Scale 9 Physical and Cultural Attributes 10 Attributes of Place Are Always Changing 10 Interrelations between Places 11 Place Similarity and Regions 13 Spatial Distributions 13 Types of Regions 13 Geography's Themes and Standards 15

Organization of This Book 17

Point Symbols 33 Area Symbols 34 Line Symbols 34 Map Misuse 35 Geographic Information Technologies 38 Remote Sensing 38 The Global Positioning System 40 Virtual and Interactive Maps 43 Integrating Technology: Geographic Information Systems 43 The Geographic Database 45 Applications of GIS 45 Summary of Key Concepts 47



Key Words 47

Thinking Geographically 47

#### **CHAPTER TWO**

Key Words 19 Thinking Geographically 19

#### Maps 20

Maps as the Tools of Geography 21 Locating Points on a Sphere 22 The Geographic Grid 22 Land Survey Systems 24 Map Projections 25 Area 25 Shape 25 Distance 25 Direction 28 Scale 28 Types of Maps 29 Topographic Maps and Terrain Representation 29 Thematic Maps and Data Representation 32

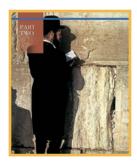
# The Earth Science Tradition 49

#### CHAPTER THREE

## Physical Geography: Landforms 50

Earth Materials 51 Igneous Rocks 51 Sedimentary Rocks 51 Metamorphic Rocks 52 Geologic Time 53 Movements of the Continents 53 Tectonic Forces 57 Diastrophism 57 Broad Warping 57 Folding 57 Faulting 58

Volcanism 60 Gradational Processes 61 Weathering 62 Mechanical Weathering 63 Chemical Weathering 63 Mass Movement 64 Erosional Agents and Deposition 67 Running Water 67 Stream Landscapes 68 Groundwater 70 Glaciers 70	Humid Continental Climates (D) 110  Subarctic Climates (Dfc, Dfd, Dwb) 110  Arctic Climates (E) 111  Highland Climates (H) 111  Climatic Change 112  Long-Term Climatic Change 112  Short-Term Climatic Change 113  The Greenhouse Effect and Global Warming 113  Summary of Key Concepts 116  Key Words 116  Thinking Geographically 117
Waves, Currents, and Coastal Landforms 74 Wind 75	
Landform Regions 76	CHAPTER FIVE
	The Geography of Natural Resources 118
Summary of Key Concepts 78 Key Words 78 Thinking Geographically 79	Resource Terminology 119 Renewable Resources 120 Nonrenewable Resources 120
CHAPTER FOUR	Resource Reserves 121
Physical Geography: Weather and Climate 80	Energy Resources and Industrialization 121 Nonrenewable Energy Resources 122 Crude Oil 122
Air Temperature 82 Earth Inclination 82 Reflection and Reradiation 84 Lapse Rate 85	Coal 124 Natural Gas 128 Oil Shale and Tar Sands 129 Nuclear Energy 131 Nuclear Fission 131
Air Pressure and Winds 85 Pressure Gradient Force 87 The Convection System 87 Land and Sea Breezes 88 Mountain and Valley Breezes 88 The Coriolis Effect 89	Nuclear Fusion 132 Renewable Energy Resources 132 Biomass Fuels 133 Wood 133 Waste 133
The Frictional Effect 90 The Global Air-Circulation Pattern 90 Ocean Currents 91	Hydropower 134 Solar Energy 135 Other Renewable Energy Resources 137
Moisture in the Atmosphere 92 Types of Precipitation 95 Storms 97	Geothermal Energy 137 Wind Power 138 Nonfuel Mineral Resources 138
Climate Regions 99 Tropical Climates (A) 101 Tropical Rain Forest (Af) 101	The Distribution of Nonfuel Minerals 141 Copper: A Case Study 142 Land Resources 144
Savanna (Aw) 101 Monsoon (Am) 101 Dryland Climates (B) 106 Hot Deserts (BWh) 106	Soils 144 Wetlands 147 Forest Resources 149 U.S. National Forests 151
Midlatitude Deserts and Semideserts (BWk, BS) 106	Tropical Rain Forests 153
Humid Midlatitude Climates (C) 108  Mediterranean Climate (Cs) 108  Humid Subtropical Climate (Cfa) 108  Marine West Coast Climate (Cfb) 108	Resource Management 154  Summary of Key Concepts 156  Key Words 157  Thinking Geographically 157



The Culture-Environment Tradition 159

#### CHAPTER SIX

#### Population Geography 160

Population Growth 161

Some Population Definitions 162

Birth Rates 163

Fertility Rates 164

Death Rates 167

Population Pyramids 171

Natural Increase and Doubling Times 172

The Demographic Transition 176

The Western Experience 176

A Divided World Converging 178

The Demographic Equation 180

Population Relocation 180

Immigration Impacts 181

World Population Distribution 182

Population Density 185

Overpopulation 185

Urbanization 187

Population Data and Projections 188

Population Data 188

Population Projections 189

Population Controls 190

Population Prospects 191

Momentum 192

Aging 192

Summary of Key Concepts 193 Key Words 194 Thinking Geographically 194

#### CHAPTER SEVEN

#### Cultural Geography 195

Components of Culture 196 Interaction of People and Environment 198 Environments as Controls 199 Human Impacts 199 Subsystems of Culture 199

The Technological Subsystem 199

The Sociological Subsystem 204

The Ideological Subsystem 205

Culture Change 206

Innovation 207

Diffusion 208

Acculturation 210

Cultural Diversity 212

Language 213

Language Spread and Change 215

Standard and Variant Languages 216

Language and Culture 219

Religion 222

Classification and Distribution of Religions 223

The Principal Religions 226

Judaism 226

Christianity 227

Islam 229

Hinduism 231

Buddhism 233

East Asian Ethnic Religions 235

Ethnicity 235

Gender and Culture 237

Other Aspects of Diversity 240

Summary of Key Concepts 241 Key Words 242

Thinking Geographically 242

### CHAPTER EIGHT

#### Spatial Interaction 243

The Definition of Spatial Interaction 244

Distance and Spatial Interaction 244

Barriers to Interaction 246

Spatial Interaction and Innovation 247

Individual Activity Space 247

Stage in Life 250

Mobility 250

Opportunities 251

Diffusion and Innovation 251

Contagious Diffusion 252

Hierarchical Diffusion 253

Spatial Interaction and Technology 253

Automobiles 254

Telecommunications 254

Migration 256

Types of Migration 257

Incentives to Migrate 259

Barriers to Migration 266

Patterns of Migration 266

Globalization 268
Economic Integration 268
International Banking 269
Transnational Corporations 269
Global Marketing 269
Political Integration 271
Cultural Integration 271

Summary of Key Concepts 272 Key Words 272 Thinking Geographically 272

#### CHAPTER NINE

#### Political Geography 273

National Political Systems 275
States, Nations, and Nation-States 275
Evolution of the Modern State 276
Challenges to the State 277
Geographic Characteristics of States 279
Size 279
Shape 279
Location 281
Cores and Capitals 282

Boundaries: The Limits of the State 284
Natural and Artificial Boundaries 284
Boundaries Classified by Settlement 285
Boundaries as Sources of Conflict 286

Centripetal Forces: Promoting State Cohesion 290
Nationalism 290

Unifying Institutions 291

Organization and Administration 291

Transportation and Communication 291

Centrifugal Forces: Challenges to State Authority 291

Cooperation among States 297

Supranationalism 297

The United Nations and Its Agencies 298

Maritime Boundaries 298

An International Law of the Sea 299

UN Affiliates 300

Regional Alliances 300

Economic Alliances 300

Military and Political Alliances 302

Local and Regional Political Organization 303

The Geography of Representation: The Districting Problem 304

The Fragmentation of Political Power 305

Summary of Key Concepts 308 Key Words 309 Thinking Geographically 309



#### The Location Tradition 311

#### CHAPTER TEN

#### Economic Geography 312

The Classification of Economic Activity and Economies 314
Categories of Activity 314
Types of Economic Systems 315
Starte of Davidson and 216

Stages of Development 316 Primary Activities: Agriculture 317

Subsistence Agriculture 320

Extensive Subsistence Agriculture 320

Intensive Subsistence Agriculture 322

Expanding Crop Production 324

Intensification and the Green Revolution 324

Commercial Agriculture 326

Production Controls 327

A Model of Agricultural Location 327

Intensive Commercial Agriculture 328

Extensive Commercial Agriculture 329

Special Crops 331

Agriculture in Planned Economies 332

Other Primary Activities 332

Fishing 333

Forestry 334

Mining and Quarrying 334

Trade in Primary Products 337

Secondary Activities: Manufacturing 338

Industrial Locational Models 339

Other Locational Considerations 340

Transport Characteristics 341

Agglomeration Economies 341

Just-in-Time and Flexible Production 342

Comparative Advantage, Outsourcing, and Offshoring 343

Imposed Considerations 344

Transnational Corporations (TNCs) 346

World Manufacturing Patterns and Trends 347

High-Tech Patterns 348

Tertiary and Beyond 350

Tertiary Services 351

Beyond Tertiary 352

Services in World Trade 353

Summary of Key Concepts 355 Key Words 356 Thinking Geographically 356

#### CHAPTER ELEVEN

#### An Urban World 357

An Urbanizing World 359

Origins and Evolution of Cities 361

Defining the City Today 362

The Location of Urban Settlements 362

The Economic Base 364

Functions of Cities 365

Cities as Central Markets 365

Cities as Centers of Production

and Services 367

Cities as Centers of Administration

and Institutions 367

Systems of Cities 368

The Urban Hierarchy 368

Rank-Size Relationships 369

World Cities 369

Inside the City 370

Patterns of Land Use 370

The Central Business District 370

Outside the Central Business District 371

Models of Urban Form 371

Changes in Urban Form 374

Suburbanization 374

Decline of the Central City 375

Downtown Renewal and Gentrification 377

Social Areas of Cities 380

Family Status 380

Social Status 381

Ethnicity 382

Institutional Controls 382

Global Urban Diversity 383

Western European Cities 384

Eastern European Cities 384

Rapidly Growing Cities in the Developing

World 386

Colonial and Noncolonial Antecedents 387

Urban Primacy and Rapid Growth 388

Squatter Settlements 389

Planned Cities 390

Summary of Key Concepts 390 Key Words 391 Thinking Geographically 391

#### CHAPTER TWELVE

#### Human Impact on the Environment 392

Ecosystems 393

Impact on Water 394

Availability of Water 395

Modification of Streams 397

Water Quality 398

Agricultural Sources of Water Pollution 399

Fertilizers 399

Biocides 400

Animal Wastes 400

Other Sources of Water Pollution 401

Industry 402

Mining 402

Municipalities and Residences 403

Controlling Water Pollution 403

Impact on Air and Climate 404

Air Pollutants 404

Factors Affecting Air Pollution 405

Acid Rain 406

Photochemical Smog 407

Depletion of the Ozone Layer 408

Controlling Air Pollution 411

Impact on Landforms 411

Landforms Produced by Excavation 411

Landforms Produced by Dumping 412

Formation of Surface Depressions 413

Impact on Plants and Animals 414

Habitat Loss or Alteration 416

Hunting and Commercial Exploitation 417

Introduction of Exotic Species 418

Poisoning and Contamination 420

Preserving Biodiversity 421

Legal Protection 421

Nongovernmental Organizations (NGOs) 422

Solid-Waste Disposal 422

Municipal Waste 422

Landfills 423

Incineration 425

Source Reduction and Recycling 425

Hazardous and Radioactive Wastes 426

Hazardous Waste 426

Radioactive Waste 427

Summary of Key Concepts 430 Key Words 430 Thinking Geographically 431

CONTENTS



# The Area Analysis Tradition 433

#### CHAPTER THIRTEEN

The Regional Concept 434

The Nature of Regions 435
The Structure of This Chapter 437
Part I: Regions in the Earth Science Tradition 437
Landforms as Regions 437
Dynamic Regions in Weather and Climate 438
Natural Resource Regions 439

Part II: Regions in the Culture-Environment Tradition 442

Population as Regional Focus 442 Language as Region 443 Mental Regions 444 Political Regions 445

Part III: Regions in the Location Tradition 447
Economic Regions 447
Urban Regions 448
Ecosystems as Regions 450

Summary of Key Concepts 453 Key Words 453 Thinking Geographically 453

Appendices A-1

Glossary G-1

Index I-1