

Contents

<i>Foreword</i>	vii
<i>1 Conditions for life</i>	1
What is life?	1
The special properties of organic life	4
The elements of life: supporting players	6
The special qualities of planet Earth	7
The origin of life on Earth	10
The rise of life, and the idea of the cell	16
<i>2 The waters of the world</i>	21
The magical properties of water	21
The movements of water	23
Water – the sculptor of landscape	25
Water – the creator of climate and weather	27
Why life is 'patchy'	28
Cleaning up the world's waterways	35
A proper attitude to water	38
<i>3 The oceans</i>	41
The ocean zones	41
Topography	41
Light	43
Heat	44
Mixing of the oceans	45
Life in the oceans	46
The plankton	47
The pelagic zone	49
The bottom dwellers	52
The depths	52
Cycles and seasons in the sea	53
Hotspots: the intertidal zone	54
Hotspots: the coral reef	55
Management of the sea	57
<i>4 The land</i>	61
Tropical rain forest	62
Savannah	64

Desert and desert scrub	66
Temperate grassland	67
Temperate and boreal forests	69
Tundra	70
Islands	72
Montane	76
Artificial ecosystems	77
 <i>5 Energy and the atmosphere</i>	 81
The first participant: energy from space	81
How the Sun's radiations affect living things	82
The second participant: the atmosphere	84
Pollution of the atmosphere: an upset of balance	90
Photosynthesis	93
Our debt to the Sun	97
 <i>6 Food webs</i>	 101
Optimum foraging strategy	103
Food chains, food webs, and cycles	110
Energy and trophic levels	114
Limiting factors	116
Subsidies	116
Agriculture and the rise of human beings	118
 <i>7 Populations and communities</i>	 121
The nature of populations	121
The size of populations: balance and minimum numbers	126
Population: patterns and strategies	127
The balance of nature	129
Parasites	130
Extinction	134
The vulnerability of living things	134
Adaptation	136
Interactions: communities	138
Change and succession	142
 <i>8 The impact of people</i>	 147
Human population	147
How many?	149
Reducing the impact of agriculture	151
National parks	153
Captive breeding and reintroduction	155
Conservation by exploitation	156
Wildlife in cities	161
What is needed	162
 <i>Glossary</i>	 164
<i>Picture credits</i>	167
<i>Index</i>	168