

Contents

Part I Mythical Paradise

1	Introduction: Welcome to the Present	3
2	Space Utilization: A Moral Imperative	9
3	The Formation of Earth and the Solar System	21
4	Earth Before People: Utopia or Nightmare?	33

Part II Paradise Lost?

5	The Environmental Dilemma: Progress or Collapse?	45
6	An Exploding Population	57
7	Climate Change	67
8	Vanishing Life	77
9	Diminishing Energy	87
10	Humans Before the Industrial Age: A Desirable Ecological Goal?	99

Part III Sky Harvest

11	Raw Materials from Space	109
12	Power from the Sun	127
13	Environmental Monitoring from Space	139
14	Protecting Earth	153
15	Mitigating Global Warming Using Planetary Engineering	165
16	Mitigating Global Warming Using Space-Based Approaches	173

17 Settling the Solar System	185
18 An Optimistic Future	199
Afterword: Why Space Advocates and Environmentalists Should Work Together	205
Appendix 1: The Current NASA Approach to Human Life Support in Space	207
Appendix 2: NASA’s Current Plans for Human Exploration Above Low Earth Orbit Include the Multi-Purpose Crewed Vehicle (Orion) and the Huge Space Launch System (SLS) Booster	213
Appendix 3: Mitigating Global Warming Using Ground-Based (Terrestrial) Geoengineering	219
Appendix 4: Mitigating Global Warming Using Space-Based Geoengineering	243
The Authors	271
Index	273

<http://www.springer.com/978-1-4614-9425-6>

Harvesting Space for a Greener Earth

Matloff, G.; Bangs, C.; Johnson, L.

2014, XV, 277 p. 120 illus., 88 illus. in color., Softcover

ISBN: 978-1-4614-9425-6