

Half-Earth: Our Planet's Fight for Life

By Edward O. Wilson. 2017. Liveright Publishing Corporation. 272 pages, 25.95 USD, Cloth, 16.95 USD, Paper.

In *Half-Earth*, renowned entomologist and conservation biologist Edward O. Wilson argues for why we should protect half of Earth's surface in order to conserve biodiversity. Earth's biodiversity is disappearing at the fastest rate in history, and this high extinction risk is linked directly to human activities, including habitat loss and overexploitation. And because we have yet to describe all species on Earth, it is likely that a large number of species will go extinct before we have the chance to describe them. E.O. Wilson has led a career filled with discovering species new to science, so he is well suited to describe and champion the race to describe life on this planet before it disappears. But the goal isn't simply to have the opportunity to describe species and learn more about the natural world around us. The goal is to preserve biodiversity because it is the ethical thing to do, species extinction has cascading effects within ecosystems which are difficult to predict, and because biodiversity benefits humans in countless ways.

In this book, Wilson first describes the conservation challenge (i.e., species are going extinct more quickly than we can discover them). He then describes the diversity of life that we do know, showing examples from a wide range of taxa. Finally, he makes a case for why we need to preserve half of Earth's surface, and makes recommendations for key areas that we should preserve. Unlike other recommendations (e.g., Aichi Biodiversity Targets, <https://www.cbd.int/sp>) for how much area needs to be preserved, Wilson uses the ecological concept known as the species-area relationship to back-up his recommendation. According to the species-area relationship, if half of Earth's habitats are preserved, then 85% of Earth's current biodiversity will not go extinct, at least not from the loss of habitat or overexploitation within that habitat. This does not account for other threats, such as climate change, but rather focusses on habitat loss, which is the greatest threat to biodiversity. Wilson does allude to these other threats in this book, but they are not the main focus of the Half Earth argument. It is fitting that Wilson uses the species-area relationship to back-up his thesis, because he is well known for using the species-area relationship in his seminal work with Robert MacArthur, the theory of island biogeography. The species-area

relationship has been shown countless times in nature, so its utility for the Half Earth argument seems sound.

My main critique of this book is that it mostly focusses on terrestrial biodiversity. Wilson is a terrestrial ecologist, so he likely focussed on the aspect of biodiversity with which he was most familiar. It could even be argued that in a popular science book such as this, it is probably better to use examples from areas that the readers are most familiar with (i.e., on land, rather than in water). However, it is likely that the greatest number of undiscovered species live in marine environments. Wilson does give a few marine examples, especially in Chapter 13, "The Wholly Different Aqueous World", where he focusses on the marine world and provides examples such as the number of invertebrate species that can be found just within the surf along a beach. However, in Chapter 15, "The Best Places in the Biosphere", all the examples are focussed on the terrestrial biosphere. I believe that this book would have benefited from a more balanced perspective on biodiversity, such that the preservation of half Earth doesn't just come across as preservation of half of terrestrial Earth, with almost no mention of aquatic Earth. Wilson could have spent more time focussing on how to achieve conserving half of Earth. Indeed, a quick web search reveals counter opinions that half of Earth is too much to conserve. As well, Wilson could have led readers through the process of achieving half Earth. Current conservation targets, such as the Aichi targets, aim for 17% of terrestrial area and 10% of marine areas to be protected by 2020. Many countries are struggling to meet these targets, let alone protecting 50% of the planet. Wilson does provide some guidance on which areas should be preserved, specifically aiming at biodiversity hotspots and areas with unique biodiversity, as well as promoting corridors connecting such areas. These are useful suggestions, but are not that different from suggestions for the Aichi targets.

This book will be an excellent read for anyone who wants to understand the current conservation crisis, learn more about biodiversity, or simply read a well-written book about the natural world.

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