

PREFACE

Biological diversity is the key to the maintenance of the world as we know it.

(E.O. Wilson, 1999)

The incredible diversity of life on earth today has evolved over the last 3.5 million years. It has only been in the last 300 years that we have begun to describe the species on the planet, and even now many species remain unknown. Just as we begin to uncover and understand the earth's ecosystems, species are disappearing. We have entered what many scientists consider to be the Sixth Major Extinction. In the last mass extinction, 65 million years ago, about two-thirds of species living at the time went extinct, most famously the dinosaurs. According to the World Conservation Union (IUCN), 16,306 species are now endangered with extinction. We have already witnessed the disappearance of much of the world's grasslands and dry forests, ecosystems well-suited for agriculture. Though the world has experienced mass extinctions in the past, this one is different. It is driven by humans, their growing populations, and their insatiable demand for the earth's resources.

Human activity reaches to the far corners of the earth; pollution impacts even the world's remote places. There are now 6.6 billion people on the planet; yet many of our closest relatives—the Great Apes—are endangered, some critically endangered (IUCN 2008). In the last 50 years, populations of bonobos, chimpanzees, gorillas, and orangutans have declined by 50 percent, for some subspecies declines have been even greater (IUCN 2008; Cincotta and Engelman 2000). While human populations are in the billions, the great apes only number in the thousands. For example, there are only an estimated 172,700–299,700 chimpanzees (*Pan troglodytes*)—the great ape with the largest population (IUCN 2008).

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Biodiversity 101 explores: What biodiversity is? Where biodiversity is found? Why it matters? How it is currently threatened? And How people can help stop the loss of biodiversity?

Despite the current biodiversity crisis there are signs of hope. Species on the brink of extinction have been successfully reintroduced and some ecosystems, such as the Amazon and boreal forest, are relatively intact. There is also a growing interest and opportunity for people to find harmonious and sustainable ways of living with nature. We hope this book will inspire people to understand and connect with the natural world, and to take action to help protect it. All life—including humans—depends on a healthy earth for survival.