

Preface

Insects are immensely charismatic. Even the humble flea has grace under the microscope. Charisma comes from seeing, appreciating, and recognizing value. Value then forms the basis for conservation, whether from a pragmatic instrumental or a deep intrinsic point of view. But valuing is one thing and the doing of conservation quite another. This book is about the doing of conservation for insects based on the value of insects to the planet and to us.

Insects do not live in isolation. They interact with the abiotic environment and are major components of the terrestrial and freshwater biotic milieus. They are crucial to so many ecosystem processes and are the warp and weft of all terrestrial and freshwater ecosystems that are not permanently frozen. This means that insect conservation is a two-way process: insects as the subjects of conservation, while also they are useful models for conserving the environment in which we all live.

There is a huge challenge with insects, as with many other invertebrates, as well as fungi and many plants. We simply do not know all the species. We do not have names for many of them and we certainly are far from understanding all their conservation needs, save for just a few species. In effect, this means that we need to conserve what we largely do not know. Yet we are now seeing glimpses and pixels that are guiding us in our conservation efforts globally. In effect, we often have to take an all-embracing conservation view of the landscape. We can do this, using conservation biology principles to guide us in making the right decisions for insect maintenance now and for ensuring their future survival, as well as their evolutionary potential. This also involves interweaving strategies for conserving particular insect species into these landscape approaches.

Recent research on the conservation of insects and other biota has given us some light as to some definite ways forward. Time is short, given the biodiversity crisis. So we must act quickly, using the most valuable and strategic information we have available and within the limitations of the resources at our disposal. On the face of it, this may at first seem a hopeless task. This means that a hard look at realism is required. We will not be able to conserve all insects and certainly not all populations. This forces us to identify and use optimal strategies. These involve making firm decisions on which landscape design and management procedures, and insect species conservation actions, we aim to engage. These then provide the maximum returns at many geographical locations, notwithstanding the pervasive effects of global climate change. Yet the present is dynamic and so will be the future, so we are not simply preserving what there is at the moment, but also setting an opportunistic course for the future.

This book overviews strategic ways forward for insect conservation based on our latest knowledge and wisdom. It is a bird's-eye view of what has worked and what has not for the maintenance of insect diversity across the world, as well as what might be the right approaches for the future.

While this book is mainly aimed at undergraduates, it is also an overview for entomologists with an interest in conservation and for conservationists interested in insects. The book communicates at three levels: (i) by a text with extensive references so as to link with the primary literature; (ii) by using illustrations and their detailed captions to summarize the text as we go along; and (iii) by using focused key points.

While only a few decades ago insect conservation was a localized exercise for a few with deep curiosity and concern, it is now a crucial element for planetary survival.