

Preface

The word *biodiversity* has been such a broadly defined term that some might argue its usefulness. Nonetheless, since the term was first introduced in 1980 it has provided the focus for a renewed interest and emphasis on life, and the conservation of life, in all its forms. The concept of biodiversity is a hierarchical one that describes the variety of life and associated phenomena, from molecules to ecosystems, from alleles to kingdoms, and much in between. In spite of difficulties in defining a precise sense of what biodiversity is, conservation planners insist that the appropriate target for biodiversity conservation must always be a place, or a network of places. This volume is devoted to one such place in Canada — the Atlantic Maritime Ecozone (AME) — and to the diversity and future of species occurring there. The area covered includes New Brunswick, Nova Scotia, Prince Edward Island, Îles de la Madeleine, and that portion of Quebec extending from the Gaspé Peninsula southwesterly to the United States border south of Sherbrooke.

Our purpose here is to provide a comprehensive review by experts of species diversity and biogeography of selected major taxa of fungi, plants, and animals inhabiting the AME. We have also been concerned with assessing those factors that have influenced changes in species distributions, abundance, and community composition since the end of the Wisconsinan Glacial Episode, about 11 ka, to the present. In particular, we have asked authors to assess impacts on taxa since European settlement of the region began about 400 years ago and to address current conservation concerns. Although one of the smaller terrestrial ecozones in Canada in terms of ecoregions/km², the AME is also one of the more diverse in geology, regional climate, and vegetation. Seven percent (15) of Canada's terrestrial ecoregions are packed into 183 978 km², a mere 4% of Canada's land area. Although dominated by forests, the region also supports well-developed sand dune and beach systems, salt marshes, raised and flat bogs, and fens.

Included among those taxa covered in this volume are phylogenetic groups which play a range of structural and functional ecological roles within the AME — vascular plants and fungi, for example, are covered in Chapters 6, 7, 10, and 11. Oribatid mites, reviewed in Chapter 15, are actively involved in the decomposition of organic matter, nutrient cycling, and soil formation. Chapters 8, 29, and 30 include lichens, amphibians, and birds, important indicators of ecosystem health; earthworms and freshwater mussels, reviewed in Chapters 13 and 27, provide ecosystem services such as soil aeration and water filtration, respectively; mosquitoes, reviewed in Chapter 26, are important vectors of diseases that affect both wildlife and humans, while fish, covered in Chapter 28, are widely exploited for food and recreation. While the chapters included here each synthesize taxa at the AME level for the first time, several also present information that is unpublished previously and completely new for the region. A supplement to Chapter 19 includes descriptions of new species of plant bugs discovered in the course of preparing the synthesis for this volume. Several chapters have also been included which provide important context for understanding AME biodiversity and its conservation; these deal with forested landscapes (Chapter 3), inland waters (Chapter 4), and protected areas (Chapter 5).

Some taxa are of course omitted. The omission of taxa from this volume does not suggest they are unimportant components of the AME. On the contrary, we would have liked to include a broader range of organisms. Unfortunately, for some groups, information or expertise, and sometimes both, were unavailable — a disappointing and disturbing situation that seems to confirm recent statements that Canada is losing capacity in biodiversity science. Ultimately, our goal with this volume is to contribute to the knowledge base necessary for understanding the dynamics of species level biodiversity within the AME and the impact of human disturbance in the region.

Donald F. McAlpine
Ian M. Smith