

PREFACE

The monograph is a presentation of the basic problems of theoretical and applied ecology, life safety, and environment protection. Questions of ecology classification, features of the biosphere, the dynamics of the properties and characteristics of species, populations and biogeocenoses are considered; the major principles, rules, and laws to govern the functioning of ecosystems are formulated. Modern concepts of geoecology related to models of the Earth's origin, techniques of evaluation of its age and internal structure, and the specificity of the evolution process mechanisms of the Earth and biosphere are analyzed. The scientific basics of environment protection include a classification of its components and ecological factors, methodological principles of nature usage, basic directions of environment protection, and the problem of biospheric pollution. Of special importance is our discussion of the global consequences of atmospheric pollution, including destruction of the ozone layer and climatic changes. In consideration of applied ecology problems, an important place is occupied by the results of the authors' theoretical and experimental works. The data presented show the role of macromolecular chemistry and organic paramagnets in preservation of the biosphere, the importance of using modern immunochemical and biosensory technologies in ecotoxicant analysis, and the importance of geoecological research in studying problems of urbanization and handling industrial wastes. The problems of life safety concerning specificities of the mechanisms of biological action of natural and technogenic dangers, human protection techniques, foodstuff consumption safety are discussed.

The monograph is intended for a wide range of readers—researchers, engineers, technologists, and specialists engaged in nature-protection activities.