BOOK REVIEWS

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AMPHIBIAN DECLINES: THE CONSERVATION STATUS OF UNITED STATES SPECIES. Michael Lannoo (ed.). 2005. University of California Press, Berkeley. ISBN 0-520-23592-4. XXI + 1094 p. $95.00 (hard cover).—During the past decade and a half, much has been discussed and published on amphibian declines. The new information obtained created a novel field of research in herpetology. The starting point of this new field was the First World Congress of Herpetology, held in Canterbury, England, in 1989, when herpetologists found that the amphibian disappearances they had witnessed individually were not merely rare, local phenomena but rather appeared to be occurring around the globe. The relevance of amphibian declines can be measured not only by the scientific production but also by the extensive coverage by the popular press. The book “Amphibian Declines: The Conservation Status of United States Species” summarizes the advances of this new research field, mainly in the United States.

This is an extraordinary book based on the experience of an impressive team of specialists on amphibian declines and conservation, primarily focused on species from the United States. Because North American herpetologists have accumulated detailed data on native amphibians over many years, this book is very thorough. The book is divided into two parts: part one is a collection of 52 essays on conservation written mainly by researchers with extensive experience in amphibian conservation. This first part is divided into an Introduction and chapters titled Declines, Causes, Conservation, Surveys and Monitoring, Education, and Perspective. Part two corresponds to the species accounts for Anura and Caudata. An amazing total of 215 contributors participated in the two parts of the book, producing more than a thousand pages of rich information on amphibian declines and conservation in United States.

The essays vary in detail and breadth of coverage, and there is some overlap among some of them, but this is to be expected in a book written by so many scientists. In the Introduction there are five essays that provide a historical perspective on the conservation of amphibians. In the Declines chapter five essays give a historical perspective as well, but there is also specific information on the decline of cricket frogs (Acrid crepitans) and a data-rich essay on the decline of the salamanders of the genus Plethodon. Together the essays address all of the relevant topics of conservation and decline in amphibians. For example, the first essay by Tim Halliday addresses the main reasons for amphibian declines, summarizing recent progress that is improving our understanding on the causal factors promoting it. He indicates habitat destruction, climate change, pollution, increased UV-B radiation, and disease as the main factors, but also calls attention to the synergistic action among some of these causes. The necessity of a more ample comprehension of the conservation status of other groups of organisms is also highlighted, given that declines may also be severe in other taxa, such as bivalves. The lack of data on distribution, population structure, and habitat of amphibians makes the task of protection more difficult. In the second essay, Martha L. Crump discusses why some species are in decline while others are not. She compares studies in different parts of the world and concludes that the patterns associated with declines in one assemblage are not necessarily repeated in other assemblages. She did not find a clear pattern of differences (in phylogeny, distribution, habitat, activity, diet, body size, skin characteristics, and life history traits) between declining and non-declining species. She concludes that some species are less able to cope with anthropogenic environmental changes.

In Causes, 12 essays adequately cover the main causes that have been proposed or demonstrated to be involved in amphibian declines. Global warming, UV radiation, chemical pollution, parasites and malformations, habitat destruction or alteration, and commercial trade of amphibians are among the treated topics. However, in this chapter some essays are not related to the causes of decline per se, such as the essay on the Lucke renal adenocarcinoma in Northern Leopard Frogs (Lithobates pipiens). In this case there is no evidence that the carcinoma is a factor in frog population decline.

In Conservation, 18 essays treat different aspects of amphibian conservation. There are essays on the conservation of specific taxa, such as one on the endangered Houston Toad (Anaxyrus houstonensis) that includes information on the major causes of decline and the politics that play an important role in conservation. The essay on fluctuations in the size of tiger salamander populations provides useful information for understanding the related natural and anthropogenic factors that affect this amphibian. The essay on the Texas spring and cave salamanders (Eurycea) shows that most species have restricted distributions and are threatened by human activities. The essay on the Southwestern desert bufonids indicates that, although these toads escaped the declines experienced by many anurans, some species are being eliminated from some areas as a result of habitat alteration. Two essays raise questions on taxonomic and systematic problems and the conservation status of the amphibians. They call attention to the necessity of clear and workable systems of classification to describe biodiversity, the importance of phylogenetic taxonomies, and the importance of conservation systematics in management and politics. The essay by Karen R. lips and Maureen A. Donnelly is an exception in the book in that it aims to describe the nature, extent, and possible causes of amphibian declines in the tropics and not in United States. The limitation of this essay is the lack of data on tropical amphibian, which is not the authors’ fault (see below). Other essays in this chapter are on amphibian decline and management, landscape ecology, ecotoxicology, importance of museum collections in amphibian conservation, reserve network, population manipulations of imperiled species, exotic invading species of fish and amphibians and their impacts on the natural systems, and the importance of natural history in the conservation of amphibians.

In the Surveys and Monitoring chapter, nine essays cover general and specific aspects, including methodological proposals. Some essays treat the distribution, decline, and monitoring of amphibians from specific places in the United States or from a general program, the North American...