

FOREWORD

Amphibians have a strong appeal for many people. Their calls are a delight to listen to, and time spent collecting spawn, or tadpoles, and raising them to metamorphosis is enjoyable, and often provides an early lesson in natural history. The Green and Golden Bell Frog *Litoria aurea* is, perhaps, one of the most well known of Australian frogs. Along with its close relatives in eastern Australia (*L. raniformis* and *L. flavipunctata*), it was once a common and conspicuous species, well known to naturalists, school children and farmers. The frogs were found in many well-vegetated farm dams, and in and near reed beds in rivers, swamps and lakes. The deep, growling calls of the frogs were well known and added interest to the sounds heard on warm, wet evenings.

By the early 1980s populations of Green and Golden Bell Frogs (and the related species in eastern Australia) had declined markedly. The frogs apparently had disappeared from the Southern Tablelands and, in coastal areas of New South Wales, there was considerable concern about the few remaining populations. Concern about the decline led to the inclusion of the Green and Golden Bell Frog on Part 1 of Schedule 12 of the *NSW National Parks and Wildlife Act 1974*, (this has been replaced by the *Threatened Species Conservation Act 1995* which lists *L. aurea* as threatened species). The species is listed as being Vulnerable in the Action Plan for Australian Frogs currently being published by the Australian Nature Conservation Agency (ANCA).

A disturbingly large number of frog species have apparently experienced similar declines both here in Australia and elsewhere. Because of its listing as endangered in New South Wales and its habit of frequenting sites that already have been extensively disturbed by human activities, the Green and Golden Bell Frog has recently attracted a considerable amount of attention. For example, the Frog and Tadpole Study Group (based in Sydney) and the Victorian Frog Group (based in Melbourne) have been actively surveying areas for the species. The frogs have also been the subject of research projects based at Universities and other academic institutions. In addition, the species has been the subject of a number of formal assessments of the impacts of proposed human actions.

In response to the strong interest in Green and Golden Bell Frogs, and the concern about the species welfare, a Conference on the Biology and Management of the Green and Golden Bell Frog was held at the Australian Museum and at Taronga Zoo on 24 May 1995. It brought together

many of the people who have had an active interest in the species during the last few decades.

The papers included in these proceedings are a direct result of this Conference. They are, for the most part, written versions of the presentations which were made at the Conference, and most of the presentations are included. There are also two papers which were submitted after the Conference for inclusion in these proceedings.

The papers provide a comprehensive and up-to-date view of the present state of knowledge and activities concerning the Green and Golden Bell Frog. The papers cover a range of biological topics including distribution, abundance, population genetics, physiology, predation and habitat occupancy. They also include discussions in relation to the conservation and management of the species and to the legal and regulatory system that controls certain human actions and their impacts on the species.

There is a clear need for further investigation of the Green and Golden Bell Frog and consideration of its conservation and management. As the following papers indicate, we know enough to be concerned about the long-term fate of this species and to initiate some prescriptions for its management. Not surprisingly, however, there remains much that is still unknown and we can anticipate significant refinement in management prescriptions in the future.

The Conference on the Biology and Management of the Green and Golden Bell Frog was made possible with help of the Australian Museum and Taronga Zoo and a number of volunteers. The publication of these proceedings owes much to the help and encouragement of Dan Lunney. The Australian Museum and the University of Canberra provided facilities which greatly helped in our editorial work. In addition we would like to thank the following people who contributed much time in reviewing drafts of the various papers: Bill Buttemer, Gary Daly, Graeme Gillespie, Alan Greer, Sandie Jones, Michael Mahony, Thea van de Mortel, Ross Goldingay, Will Osborne, Graham Pyke, and Arthur White. Finally we thank contributors to the conference for working hard during the short time available to prepare their manuscripts for publication.

Graham H. Pyke
Australian Museum
6 College Street, Sydney, NSW 2000

William S. Osborne
Applied Ecology Research Group
University of Canberra
P.O. Box 1, Belconnen, ACT 2616