
THE HERPETOLOGICAL CONSERVATION AND BIOLOGY SYMPOSIUM AT THE 6TH WORLD CONGRESS OF HERPETOLOGY

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Herpetological Conservation and Biology was conceived in July 2005. Following consultation with colleagues and much rapid nurturing, nine months after conception, the journal was born (Bury et al. 2006). It has grown rapidly (Saumure 2007) and in 2008, more than 100 submissions were received. The baby is alive and developing very rapidly. Like financial requirements of teenagers, HCB's impact factor is growing. Of course, correlation is not causation.

We are all aware of being in the midst of the world's sixth major mass extinction event (Pimm and Brooks 2000). Unlike all previous events, this one is caused by a single species, *Homo sapiens* (Leakey and Lewin 1995). A potential solution required data, and given that the mass extinction event occurs globally, data are required from all continents. The fact that many species of amphibians and reptiles are currently threatened with extinction has been widely reported (Gibbons et al. 2000; Houlahan et al. 2000; Stuart et al. 2004; Wake and Vredenburg 2008). However what is often understated in these conservation assessments is that one in four amphibian species (25%) worldwide and one in six squamate species (16.7%) in the New World are listed by IUCN as data deficient. These data deficient figures are much greater than for mammals (5.3%) and birds (0.8%; Bury 2006). Baseline and long-term natural history information are essential for informed conservation efforts, and much conservation activity relies on understanding life-history dynamics (Bury 2006; Fitch 2006). Yet we lack this important information for thousands of species of amphibians and reptiles. The proposal for a symposium at the 6th World Congress of Herpetology in Manaus, Brazil was developed quickly. Given enthusiasm for the concept, we succeeded in obtaining time slots in the congress program. From early on in the planning, we sought to assemble a group of international experts to assess the status of conservation on a global scale, to demonstrate the importance of natural history to conservation, and to publish their contributions in *Herpetological*

Conservation and Biology. The symposium had a diverse lineup of researchers representing 13 nations who have conducted research on six continents.

Setting a perspective, Marcileida Dos Santos and Richard A. Griffiths reviewed the relative contributions of papers on the conservation of amphibians and reptiles in the *Herpetological Journal* and *Journal of Herpetology*, and two leading conservation journals; *Conservation Biology* and *Biological Conservation*. Publication trends were analyzed over the past 15 years. Compared to papers on birds, mammals, and plants, papers on amphibians and non-avian reptiles occupied a small percentage of contributions in conservation journals, but the proportion of papers on amphibians showed an increase through time. They also showed a trend of increasing publications on herpetological natural history.

Contributed papers covered the southern continents. Little has been known about declines and conservation status of African amphibians and reptiles. Vincenzo Mercurio reviewed the status of amphibians in Malawi using quantitative methods. Habitat destruction for arable land in itself may have affected diversity in ways not previously predicted. He found that frog diversity is still high and for some species significant new natural history was discovered. The importance of vegetation cover and temporary ponds was discussed in the context of developing conservation plans in areas with agriculture. Marius Burger, Marienne de Villiers, and James A. Harrison reported on the Southern African Reptile Conservation Assessment (SARCA), a collaborative effort that summarizes the distributions of non-avian reptiles in Southern Africa, including a novel virtual museum in which the public is invited to participate. Of course, distributional data are essential to assessing the status of species. SARCA gathered more than 4,200 records in three years and these data will be summarized in an atlas and Red Data book. Relative to biodiversity, New Zealand was best represented. Kelly M. Hare and Alison Cree evaluated *ex situ* efforts to

recover a New Zealand viviparous skink, *Oligosoma maccanni*, which is similar reproductively to at least two other critically threatened species. Reproductive success was drastically increased by removing parasitic mites, a finding with significant implications for conservation efforts, both *ex situ* and *in situ*. Susan N. Keall, Nicola J. Nelson, and Charles H. Daugherty summarized efforts to assure survival of the Tuatara. *Ex situ* egg hatching combined with head starting and the elimination of predators (rats) could be the key to success. Monitoring the success of the initiative might not be a viable topic for a student's dissertation because success can only be determined by future generations of herpetologists. Ben D. Bell spoke about other long-lived taxa in New Zealand, leiopelmatid frogs that can live for > 35 yrs! He emphasized the need for basic natural history data, and how they can be used to mount effective conservation strategies. No review of the southern continents would be complete without Australia. Francis L. Lemckert and Michael J. Mahony report that, at least in New South Wales, the distribution and abundance of frogs is not necessarily influenced by current levels of human disturbance. There's a surprise! They conclude that conservation of frogs will require forest management to focus on several features at multiple scales.

The fate of turtles because of anthropogenic tradition is legendary in China. They are consumed for celebrations and in traditional medicine alike, to the point that turtle use has now become unsustainable. Turtle trafficking occurs on a massive scale. Haitao Shi, James F. Parham, Kevin Buley, Michael Lau, Donna O'Connell, and Jonathan Fong reviewed their action plan for the conservation of Chinese chelonians. Their plan involved eight essential areas: (1) capacity building; (2) formulation of research plans and (3) a network of investigators; (4) trade monitoring; (5) legislation; (6) *ex situ* propagation and rescue centers; (7) establishment of three to five nature reserves; and (8) education. Unfortunately, other commitments precluded the submission of a manuscript.

Elsewhere for Eurasia, Mathieu Denoël, Georg Dzukic, G. Francesco Ficetola, and Milos Kalezic presented a highly informative paper on the status and causes of decline in European newts. The demise of paedomorphic newts is associated with the introduction of fishes and habitat destruction. Representing the Middle East, Pritpal S. Soorae reviewed the conflict between urban development and the herpetofauna of the United Arab Emirates and its impact on re-introduction plans. With only one species of amphibian, the herpetofauna is dominated by xerophilic squamates.

The Americas received four contributions. Bruce Kingsbury presented his study on the association between basic natural history information and the conservation of snakes in the Midwest United States. Examples from the Copper-bellied Watersnake (*Nerodia erythrogaster neglecta*) and the Eastern Massasauga (*Sistrurus c. catenatus*) left no doubt about this association. Bob Brodman was equally influential in his study of the importance of natural history, landscape factors, and management practices in conserving pond-breeding salamander diversity. As confirmed using statistical applications, conservation requires information on habitat needs. Global warming, habitat destruction, and disease are contributing to the demise of amphibians, as are pesticides. Gary M. Fellers and Donald W. Sparling reviewed the impact of commonly used pesticides on amphibian diversity. Their findings raised concerns for far more biodiverse areas in Central America and South America, where pesticide use is on the rise. Renata J. Platenberg and Daniel S. Harvey used habitat suitability models to argue for reserves and development easements for the endangered Virgin Islands Tree Boa (*Epicrates monensis granti*). The approach is meeting with some success.

Evolutionarily distinct and globally endangered (EDGE) amphibians are of major concern. Almost half of the known species are declining. Helen M.R. Meredith, Nick J.B. Isaac, Sally E. Wren, Trent W.J. Garner, Ian Stephen, Carly Waterman, Samuel T. Turvey, and Jonathan E.M. Baillie Helen provided an overview of their efforts including a list of the top 100 amphibians of conservation concern and plans for their conservation.

Although our sessions were fully booked, we wanted to add one additional contribution to the symposium. Ariadne Angulo, Simon N. Stuart, and Janice Chanson updated the global amphibian assessment. They reported a bias associated with the availability of experts.

As symposium organizers, we remain impressed with the quality and diversity of presentations. The most common theme was the need for more data on the natural history of most species. Even well studied amphibians and reptiles were yielding a wealth of data, and data critical for successful conservation efforts. What follows in this issue of *Herpetological Conservation and Biology* are the papers that were submitted and underwent peer review. Our hope is that these contributions will make a difference.

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