

bharal, searching new species in the wild areas of Vietnam and Laos and many more; the book is full of such lucidly written, patient observations and fascinating encounters filled with the marvel of living amidst the wild beasts and his footprints among them.

This book describes doing field research in a way that combines the practical issues, political reflections and sociological issues. Schaller thus focuses well on a number of diverse levels while making the facts interesting and vital, which shows his broad understanding of the conservation issues. Schaller mentions about wildlife science too, but without sounding like a scientist, and those seeking to be a naturalist, even if it has nothing to do with wildlife science and conservation, can learn a lot from reading about his experience. On the surface, this book seems to be simply a description of one man's thoughts and views on the 'beasts' and their wild places, but underneath lies Schaller's philosophy, ideals and beliefs intertwined with his struggles and hardships throughout the journey he has taken to observe and preserve the wilderness he loves and respects. But more than just interesting adventure essays, or a portrayal of nature, it is a primer on the essence of finding one's true identity, and the contemplation of just being what you are and what you love.

I first came to know about George Schaller through Peter Matthiessen's book *The Snow Leopard* (1973), where he accompanied Schaller who hikes through the Himalayas and the Tibetan plateau to explore the mountain wilderness. This book made an unforgettable impression of Schaller, whose readings later shaped my perception about wildlife conservation and life itself.

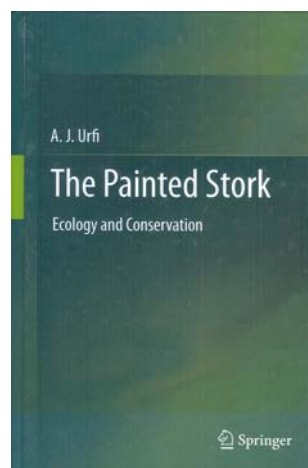
This book is the best synopsis of Schaller's work on hand and emphasizes precisely why National Geographic conferred its Lifetime Achievement Award upon him in 2007, which is just one of the many prestigious awards that he has been honoured with. But his true legacy lies in inspiring, directly or indirectly, generations of many renowned naturalists and biologists the world over, as well as establishing over 20 parks and preserves worldwide. Schaller quotes of Milarepa, a 12th century Tibetan hermit, 'Do if you like that which may seem sinful, but help living beings, because that is truly pious work', and a German poet

Johann Friedrich, 'What the inner voice says will not disappoint the hoping soul', which rightly reflects Schaller's beliefs and outlook.

This book makes a strong case for the conservation of unique and diminishing natural wilderness across the globe: 'After all, it is the only home we shall ever have'. The book is well worth the read and will appeal to both general audiences and biologists. Hopefully will inspire an unprejudiced understanding of nature by future naturalists.

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The Painted Stork: Ecology and Conservation. A. J. Urfi. Springer Science + Business Media, LLC, 223 Spring Street, NY10013, USA. 2011. xvii + 163 pp. Price: US\$ 129.00.

India is home to about 1300 species of birds. While it is true that there exists a body of knowledge about birds of the Indian subcontinent with respect to their natural history, there is a marked paucity of detailed studies that focus on their ecology. Amongst the latter, very few studies have presented an exhaustive treatment of a single species. Such studies are particularly vital if the species in question is one of conservation importance.

A. J. Urfi's research on the Painted Stork is exemplary in that it is one of the

few studies that have explored the various ecological aspects for a single species of bird and that too for a long period of time. The Painted Stork (*Mycteria leucocephala*) is a large, conspicuously plumaged wetland bird that is widespread across South and Southeast Asia. Although this species has the largest population among the storks that reside in Asia, it is facing a decline under anthropogenic activities and changes in land use. Over the years, the Painted Stork has emerged as an appropriate mascot for wetlands and their conservation. In the book under review, Urfi presents an exhaustive monograph on the Painted Stork, attempting to encyclopedically cover the important features of the ecology of the species. Urfi draws frequently from the studies that he has been doing along with his colleagues and students, focusing on the stork colony in the Delhi Zoo complex, and supplementing it with information for relevant studies done elsewhere. The introductory chapter looks at the Painted Stork in the global perspective, first discussing the systematics of the species. The author then compares it with its congeners, particularly the other Asian *Mycteria* – the Milky Stork. The remaining part of the chapter is dedicated to the distribution of the species globally and within the Indian subcontinent, and summarizes the known ecological information about the Painted Stork. Towards the end of this chapter Urfi offers arguments about why this species is an important target for research: its large size, its dependence on wetlands, its specialized diet and its habit of nesting in colonies makes it an ideal species to answer a variety of ecological and environmental questions – both theoretical as well as applied. All these points are subsequently elaborated in the chapters that follow.

In chapter 2, Urfi looks at coloniality – one of the most important ecological traits of the Painted Stork that has a bearing on its survival. Starting with a broader theoretical background about coloniality in birds and the evolution of this phenomenon, the author moves on to case studies on the Painted Stork. He stresses that forage availability is the determining factor that governs the nesting ecology of the species. Urfi then goes on to describe the types of colonies based on location and highlights the fact that colonial nesting areas (called heronries) outside the protected area network, e.g.

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those in villages and urban areas, are critical for the existence of the Painted Stork. Towards the end of the chapter Urfi describes occupation and abandonment patterns of stork colonies observed during the long-term monitoring at the Delhi Zoo.

Nesting ecology of the Painted Stork is dealt with in chapter 3. Urfi demonstrates how the phenological patterns of nest initiation are intricately tied to the onset of the monsoon. Painted Storks hatch in such a way that the chicks come when fish abundance is at its peak in the months following the monsoons. Courtship in the Painted Storks is also touched upon in the chapter. Following this, the locational and structural characteristics of nests are described. For example, Urfi finds that the height of the nest above the ground is determined by the degree of predation risk by ground predators. A review of nesting behaviours is also provided in this chapter.

Chapter 4 deals with morphometric differences between male and female storks, their evolution and consequences. The second half of the chapter covers mating patterns of the Painted Stork and its nesting site selection. Chick development and growth patterns are described in chapter 5, wherein it comes to light that different body parts of the bird follow different rates of growth during its development.

In chapter 6 the author enumerates the foraging ecology of the Painted Stork in great detail, making it one of the largest chapters of the monograph. He describes how the bird uses tactile rather than visual cues to locate and capture fish (its primary prey) in turbid water. The biophysical aspects of bill morphology are discussed, demonstrating the advantages of having slightly decurved mandibles. The dietary components of foraging are



The sketch of Painted Stork (white headed ibis) that appeared in Pennant's book 'Indian Zoology' published in 1790. This is possibly the first pictorial description of this species.

discussed in detail, drawing from the author's own work as well as those of other researchers. Here, the author describes how the Painted Storks shift their preferred size of prey depending on the season: They appear to go for smaller-sized fish during the breeding season to cater to the requirements of the chicks which they have to feed by regurgitation. Urfi looks at the foraging niche of the Painted Stork in terms of foraging depth in relation to other waterbirds. At the end of this chapter the Painted Stork is portrayed in the larger context, describing its role in the ecosystem, particularly in recycling soil nutrients such as phosphorus.

In chapter 7, Urfi looks at the social and cultural connotations associated with storks in general and the Painted Stork in particular. He gives a synopsis of the symbolism associated with the stork in the customs and scriptures of India, be-

fore concluding with summarizing the attitudes of people towards heronries.

Conservation is the focus of the concluding chapter (chapter 8). Urfi presents an overview of the factors that threaten the existence of the Painted Stork, namely loss of its primary habitat, i.e. wetlands and its conversion to other land uses, particularly urbanization. Persistent organic pesticides and toxins that contaminate soil and water and ultimately reach the fish, upon which the Painted Stork is exclusively dependent, are also a major threat for the bird. In addition, noise and disturbance caused by humans can lead to abandonment of nesting sites by the Painted Storks.

Towards the end, the author explores potential solutions for the conservation of Painted Storks using a variety of synergistic approaches ranging from captive breeding and assisted rehabilitation of nestlings to environmental education. Urfi signs-off by stressing the importance of long-term research and monitoring for a better understanding of the ecological complexities associated with a long-lived species like the Painted Stork.

While the content of the book is exhaustive, the monograph would have had an even better value if the editing had been a bit tighter and had the quality of the illustrations been improved. On the whole, the book is a useful resource for researchers, particularly students because in each of its core chapters it offers basic theoretical background prior to an advanced treatment.

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