

BOOK REVIEWS

Flight of the Huia: Ecology and Conservation of New Zealand's Frogs, Reptiles, Birds and Mammals

Wilson, K-J. (2004)
Canterbury University Press, Christchurch, New Zealand (www.cup.canterbury.ac.nz)
411 + xii pp., ISBN 0-908812-52-3
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THE Huia *Heteralocha acutirostris* (Passeriformes: Callaeidae) was a remarkable bird, endemic to New Zealand and famous for its sexual dimorphism in beak shape, which allowed differentiation of invertebrate resource collection by foraging pairs. Huia were once widespread throughout New Zealand, but declined rapidly following human settlement due to predation by introduced mammals, habitat loss, hunting and collecting, until their extinction in the early 20th Century. The plight of the Huia is, tragically, parallel to the stories of many of New Zealand's endemic vertebrates, and is a fitting frontispiece for Kerry-Jane Wilson's new book which delves into the ecological history of the New Zealand fauna.

Flight of the Huia is one of two recent syntheses of New Zealand ecological discovery, which have drastically condensed scientific knowledge, the other being Worthy and Holdaway's *The Lost World of the Moa*. Worthy and Holdaway (2002) delve into incredible detail on moa and their huge eagle predators, incorporating other New Zealand relics primarily to provide context for their story. In contrast, Wilson's *Flight of the Huia* traces out the history of New Zealand's birds, mammals, reptiles and frogs, synthesizing ecological research that is the basis of current scientific thinking to a conservation end. Wilson conveys the magnitude of destructive changes to species and ecosystems in a non-sensational manner that nonetheless creates an awareness for the reader of the extent of problems facing conservation in New Zealand. Each chapter is divided into small sections in which Wilson has captured one aspect of her story and provided the most relevant example to illustrate the point. Clear, black and white graphs and diagrams are used sparingly, and often creatively, to provide significant visual additions to the text, yet supporting tables are often not intuitive to follow.

Extinctions world-wide are occurring at a rate faster than at any time in the last 65 million years. Humans and the mammals they brought to New Zealand in the past 2 000 years have wreaked havoc on the indigenous fauna. During this time, "40 per cent of the terrestrial and freshwater bird species native to the New Zealand mainland, five marine birds, three frogs, a bat, at least three lizards, one freshwater fish, some plants and unknown species of invertebrates have become extinct". Many more

species now exist only as refugees on small offshore islands, which represent a mere fraction of their former ranges; their survival has hinged on escaping the onslaught of introduced mammals and habitat modification. Wilson explicitly demonstrates the synergy with which these factors act to create a land in which the balance has been tipped in favour of introduced species.

After creating a picture of New Zealand flora and fauna as that of both an "archipelago and mini-continent", Wilson takes the reader on a journey through the ecology of frogs, reptiles, bats, birds and marine mammals, with a closer examination of pre-human life in New Zealand, subsequent threats to biodiversity and resulting ecosystem modification. Her writing achieves elegance by wandering lightly through seemingly disparate topics while retaining a loose thread of connectivity in the overarching themes of biodiversity and conservation. For example, the chapter on seabirds and marine mammals darts from the teeth of cetaceans to the complex bathymetry and hydrology of the New Zealand region that supports such diversity, and from the traditional harvesting of fledgling seabirds to Fairy Prions *Pachyptila turtur* becoming entangled in the exotic Boxthorn *Lycium ferocissimum* which itself is entangled in conservation debate.

Following an annotated ecological history of the fauna, Wilson embarks on a historical look at conservation in New Zealand, which she views as an attempt to "heal some of the ecological wounds inflicted . . . since first human contact". Since European settlement when conventional wisdom dictated that "things colonial were inferior to things European", conservation and its associated philosophy has progressed through a phase of passive (legislative) protection to present active management. Today a government department is dedicated to conservation, and local communities are involved in restoring ecosystems. Flagship species such as Takahe *Porphyrio mantelli*, Kakapo *Strigops habroptilis*, the Black Robin *Petroica traversi* and, more recently, Tuatara, *Sphenodon* spp., have been used both by popular media to create conservation awareness in the New Zealand public and by Wilson in *Flight of the Huia* to walk us through the development of active conservation strategies. She believes that New Zealand and its people have become world leaders in conservation. Novel strategies developed to deal with local conservation crises have resulted in pioneering many of the eradication and translocation strategies now employed around the world. Alongside a "growing sophistication of endangered species management", current conservation efforts are targeting progress in public awareness through making endangered species accessible, with open sanctuaries like Tiritiri Matangi Island and the Karori Wildlife Sanctuary (a mainland island in the country's capital city).

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While *Flight of the Huia* primarily fulfils the role of an annotated history of New Zealand ecology and conservation, Wilson also develops her personal views on the future of New Zealand conservation in her final chapter, "Seeking solutions". Her message that conservation will become even more challenging in the future is an unfortunate reality as it competes with ever-increasing resource use and a growing, increasingly affluent population. To progress beyond "the 'band aid' stage" Wilson believes that conservation must become a mainstream activity, as important to society as health or education, which is dependent on continued development of a conservation ethic. Her idea that we are merely "holding the fort" until technology advances to the point when cost-effective management allows significant conservation gain seems a solid and realistic, though not innovative, stance on the current plight of conservation in New Zealand.

Although Wilson uses terminology and detailed explanation that enable a non-specialist to easily follow her arguments, *Flight of the Huia* is accessible

to only the most committed of "armchair" ecologists due to her factual and detailed style which can be rather dry. Little gems of weaponry do occasionally pop out to equip the conservation-minded New Zealander with an argument against invasive species or continuing habitat modification: the Stephens Island Wren *Xenicus lyalli* was both discovered and exterminated in 1894, courtesy of a light-house keeper's cat! However, such tid-bits are deeply entrenched in the factual reality of a comprehensive ecological history, which is the major aim of this book. *Flight of the Huia* represents a highly accurate synthesis of old and new ecological research on New Zealand's vertebrate fauna, which will be an excellent source of reference for students and ecologists alike.

REFERENCE

- Worthy, T. H. and Holdaway, R. N., 2002. *The Lost World of the Moa: Prehistoric Life of New Zealand*. Indiana University Press, Bloomington, Indiana.

Achieving Sustainable Freshwater Systems: A Web of Connections

M. M. Holland, E. R. Blood and L. R. Shaffer (Eds.), 2003.
Island Press, Washington.
Pp. xiii and 351. ISBN 1 55963 929 6
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THE question being asked around the globe is "how to satisfy the water demands of an ever-expanding human population while at the same time protecting the aquatic ecosystems and ecological services upon which all life depends" (p. 1). *Achieving Sustainable Freshwater Systems* addresses this question with the purpose of encouraging an integrated, cooperative and adaptive approach to sustaining wetlands and water resources.

The book is divided into four sections, 'Freshwater Systems from Past to Present' emphasizes the move away from regulations and towards a voluntary, integrative, adaptive, co-managed approach to controlling wetland degradation. 'Recent Scientific Perspectives' describes interesting insights in the field and the need for further research. 'Freshwater management' explains the practical process of restoration and 'Can we Achieve Sustainable Freshwater Systems in the Future?' describes the steps relating to the integration of economic,

political, social and environmental aspects to achieve appropriate management.

Information is delivered clearly and enhanced by the appropriate use of figures and tables. The evidence and references used to support statements throughout the book are generally relevant and recent. Interest may waver for some readers due to the limited scope and repetition of examples, particularly the Lower Mississippi Alluvial Valley. In my view, the lack of information describing our use and impacts on aquifers, and the limited acknowledgement of financial and human resources as an obstacle to achieving sustainable freshwater systems, especially in developing countries detracts from the book's value. However, the book succeeded in providing a broad introduction to the problems and potential solutions associated with the management of freshwater systems into the future.

Achieving Sustainable Freshwater Systems is different to other wetland books as it collates and evaluates all the existing information pertaining to the achievement of sustainable freshwater systems. I would recommend this book to anyone who is interested in learning how to better manage our limited water resources.

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