

Giraffe

Biology, Behaviour and Conservation

With its iconic appearance and historic popular appeal, the giraffe is the world's tallest living terrestrial animal and the largest ruminant. Recent years have seen much-needed new research undertaken to improve our understanding of this unique animal.

Drawing together the latest research into one resource, this is a detailed exploration of current knowledge on the biology, behaviour and conservation needs of giraffe. Dagg highlights striking new data, covering topics such as classification of races; the apparent role of infrasound in communication; biological responses to external temperature changes; and motherly behaviour and grief. The book discusses research into behaviour alongside practical information on captive giraffe, including diet, stereotypical behaviour, ailments and parasites, covering both problems and potential solutions associated with zoo giraffe. With the giraffe becoming an endangered species in Africa, the book ultimately focuses on conservation measures to halt population decline.

Anne Innis Dagg, PhD, teaches in the Independent Studies Program at the University of Waterloo, Canada. Her passion for giraffe has inspired much of her research. In 1976 she co-authored the first scientific book on the species, and in 2010 she was honoured for her pioneering work at the inaugural meeting of the International Association of Giraffe Care Professionals. She is also the author of *Animal Friendships* (Cambridge, 2011).

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**For Julian Fennessy, Zoe Muller and Paul Rose
who are devoting their lives to the benefit of giraffe and
who have helped greatly in the writing of this book**

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Preface

It all began when, as a toddler, I saw the giraffe at the Brookfield Zoo in Chicago. I was so captivated that I later studied biology at the University of Toronto, hoping to learn everything about the species. This didn't happen – there was no interest then in Africa or in animal behaviour in academic biology. After graduating, my aim was to go to Africa to study giraffe as soon as possible, but I had no contacts there to make this happen. I decided instead to do graduate work for a Master's degree at the university while I wrote letters to see who might help me accomplish my dream. This took many months – letters to government officials or wildlife departments in countries where there were giraffe, letters to names of people dredged up by friends, letters to professors connected with Africa, even letters to L. S. B. Leakey who was to launch Jane Goodall on her career five years later. After early rebuffs I used initials for my signature so the recipient would presume I was a man, but this did not help.

Luckily, about that time Rufus (C. S.) Churcher came from Africa to earn his doctorate at the University of Toronto; he would go on to become a professor there and author of a definitive work on fossil giraffe, 'Giraffidae' (1978). He told me about a professor he had studied with, Jakes Ewer of Rhodes University in Grahamstown, South Africa, who might be able to help me. Jakes and his wife, Griff Ewer, were both willing to do this. They put me in touch with Alexander Matthew who managed a citrus and cattle ranch near the Kruger National Park on which roamed nearly 100 giraffe; after some hesitation – he had assumed I was a man – he finally agreed to have me live and work at his ranch. These amazing people became friends of mine for life.

As the first person to study giraffe in the field, in 1956–1957, I set myself a huge agenda. No one had ever before researched a wild animal like this in Africa, so I had no reason to believe that anyone would be interested in studying giraffe in the future, either. It had taken half my money and nearly a month's travel by ship and a 1000-mile trip in a second-hand car to reach the giraffe in what was formerly the Transvaal, so I knew few people could afford the expense and time to do this. Planes were so pricey they were off my radar. Who could ever afford them? (Foretelling the future is not my strong point, needless to say.) Because of these huge obstacles I felt I had to learn as much about giraffe as I could in the year I had at my disposal before my money ran out (Dagg, 2006). I noted what plants they ate, where they roamed, who seemed friendly with whom, where and when they drank, males who 'necked' with other males, and the anatomy of a dead giraffe. The results are described in my first scientific paper (Innis, 1958).

Back in Canada, I used the footage of giraffe movements that I had filmed in South Africa to earn my PhD with a comparison of the giraffe’s gaits with those of other large ungulates. I also gathered material for a manuscript which was to include everything that had been written on this species and, on my husband’s sabbatical, researched the behaviour of the 18 giraffe in the Taronga Zoo of Sydney, Australia.

While studying biology at the University of Toronto, one of my classmates was Bristol Foster, who would go on in the 1960s to study giraffe for three years in the Nairobi National Park. He collected valuable information on their distribution and social behaviour. I eventually co-authored with Foster *The Giraffe: Its Biology, Behavior, and Ecology* (1976), which I updated in 1982.

After decades of trying unsuccessfully to become a university professor (it was difficult being a woman scientist at the time, futilely attempting to break into male university departments of biology or zoology), I wrote various books about animals and, in 2006, the story of my year in Africa, *Pursuing Giraffe: A 1950s Adventure*. This led to interviews for the hour-long CBC radio programme ‘Ideas’ (available on my website annedagg.ca), which in turn led to my signing movie rights about the adventure for a possible movie.

In 2010, I was thrilled to be invited to and honoured at the inaugural conference of the International Association of Giraffe Care Professionals (IAGCP) founded by Amy Phelps of the Oakland Zoo and Paige McNickle and Lanny Brown of the Phoenix Zoo. There I met and talked to many of the 150 attendants, all interested in giraffe research in general, and most involved with the care of giraffe in zoos. They were an added impetus to write this present book.

Giraffe: Biology, Behaviour and Conservation (2014) is unlike our first book on giraffe. For it, Foster and I scraped together everything that had been written about this species along with what we had learned in our own researches. Since then, in the past 30 years, scores of zoologists and biologists have produced hundreds of scientific papers on new discoveries about this wonderful animal carried out in the wild, in zoos and in laboratories. While our earlier work was wanting because of a paucity of material, this book feeds on the flood of new discoveries. This cutting-edge research is the basis for this book.

Sadly and paradoxically, while research has flourished, giraffe have not. During the past 15 years, because of burgeoning human population pressures in African countries, illegal killings and drought, the numbers of giraffe in Africa have plummeted by 40%. Unless something drastic is done to stop this catastrophic decline, giraffe could become extinct in the wild. This book therefore emphasizes conservation.

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Abbreviations

BU	Browse Unit
DB	Dallol Bosso
GED	Giraffes Ear Disease
GSD	Giraffe Skin Disease
HIF	human-impact factor
IAGCP	International Association of Giraffe Care Professionals
IM	Intermediate Zone
KNP	Kruger National Park
LNNP	Lake Nakuru National Park
NNP	Nairobi National Park
REM	rapid eye movement
SFA	Serous Fat Atrophy
TST	total sleep time