

Impacts of Human Population on Wildlife

A British Perspective

Wildlife and the countryside are highly valued by people in the UK, and for good reason. Healthy habitats are invaluable assets and promote human well-being. However, they are under increasing threat from, among other things, relentless urban expansion and intensive modern agriculture. These pressures stem largely from a major underlying cause – the high and growing population of humans living in the UK. This book provides an overview of wildlife in the UK and its recent status, factors contributing to wildlife declines, trends in human numbers, international deliberations about the impacts of human population growth and the implications for the future of wildlife conservation in the UK. The evidence-based text includes comparisons of wildlife declines and their causes in other countries, providing a global perspective. This book is for ecologists, naturalists and conservation biologists studying and working in academia or in consultancies, as well as all those interested in wildlife conservation.

TREVOR J. C. BEEBEE is Emeritus Professor of evolution, behaviour and environment at the University of Sussex, UK, where he taught from 1976 to 2012. He has published over 200 papers, articles and books, including *Climate Change and British Wildlife* (Bloomsbury, 2018) which received the Marsh Award from the British Ecological Society for the most influential ecology book of 2019. He is also a trustee of Amphibian and Reptile Conservation, and a Fellow of the British Herpetological Society and the British Naturalists Association.

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The world's biological diversity faces unprecedented threats. The urgent challenge facing the concerned biologist is to understand ecological processes well enough to maintain their functioning in the face of the pressures resulting from human population growth. Those concerned with the conservation of biodiversity and with restoration also need to be acquainted with the political, social, historical, economic and legal frameworks within which ecological and conservation practice must be developed. The new Ecology, Biodiversity and Conservation series will present balanced, comprehensive, up-to-date and critical reviews of selected topics within the sciences of ecology and conservation biology, both botanical and zoological, and both 'pure' and 'applied'. It is aimed at advanced final-year undergraduates, graduate students, researchers and university teachers, as well as ecologists and conservationists in industry, government and the voluntary sectors. The series encompasses a wide range of approaches and scales (spatial, temporal and taxonomic), including quantitative, theoretical, population, community, ecosystem, landscape, historical, experimental, behavioural and evolutionary studies. The emphasis is on science related to the real world of plants and animals rather than on purely theoretical abstractions and mathematical models. Books in this series will, wherever possible, consider issues from a broad perspective. Some books will challenge existing paradigms and present new ecological concepts, empirical or theoretical models, and testable hypotheses. Other books will explore new approaches and present syntheses on topics of ecological importance.

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TREVOR J. C. BEEBEE

University of Sussex



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Preface

‘We need the tonic of wilderness – to wade sometimes in marshes where the bittern and meadow-hen lurk, and hear the booming of the snipe.’ These longings of naturalist Henry Thoreau in the wild woods of New England strike a chord nearly two centuries after his self-imposed exile at Walden Pond. He would be less happy there today, as the urine from swarms of swimmers has decimated the lake’s fish populations. People have become a problem for wildlife, not just in New England but equally in old England and virtually everywhere else around the world. Yet the issue of human numbers is rarely discussed in any context, despite the fact that humans as much as any other species are at risk from ongoing population growth.

For me, the issue of people pressure imposed itself almost as soon as I became entranced by all the plants, animals and fungi that constitute the natural world around us. Spring is a time of anticipation, a regular reminder of our fascination with all things natural. Although especially wondrous for naturalists, few people remain untouched by the lengthening days and promise of a coming summer. And so it had been for me, increasingly intoxicated as a youth by wild places and the amazing wildlife there for the watching in my local countryside. But one day was different. It was April 1963, and hovering above the pond an intimidating machine was moving vast quantities of earth, infilling a treasure trove overflowing with water plants, dragonflies, beetles, frogs, newts and so much more. There had been no warning, at least none that had reached the ears of a schoolboy unversed in the ways of the world. This small pool had been my inspiration, awakening my first fascination with natural history. Over the previous 5 years I had become familiar with every soggy corner and to this day I could draw you a map of it. A shady bay beneath a hawthorn bush where, one autumn, a dozen newly emerged great diving beetles lay immobile on the silt; springs with frog choruses, masses of spawn, migrating toads and newts flitting around in the shallows; and warm summer days with hawker dragonflies

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patrolling tirelessly around the shores. Within a matter of hours, all this was gone, paving the way for a new housing estate. My adolescent brain made the obvious connection: more people means fewer wild places and less wildlife.

This apparently naïve interpretation of cause and effect has stuck with me despite the plethora of specific causes put forward to account for the ongoing degradation of Britain's environment. It seems astonishing that an obvious problem – too many people competing for space in a small country – has not only been largely overlooked but positively excluded from serious discussion at all levels of society. It was not always so. In the early 1970s, there was great interest in the impact of overpopulation, largely driven by Paul Ehrlich's 1968 book, *The Population Bomb*. Even the late but not much lamented US President Richard Nixon took the issue seriously. Sadly, and at great environmental cost, interest in overpopulation subsequently waned and we are now paying the price for decades of needless neglect.

In this book, I make the case that reasons usually proposed to account for the progressive degradation of our countryside are real enough but that the main ones are secondary to a single, primary cause: the attempt to accommodate more people than Britain can sustain without ongoing environmental damage. This is not a new idea, simply one that has not received the attention it deserves. Perhaps it soon will. In *Man Swarm, and the Killing of Wildlife* (Foreman, 2011) the subject of population pressures on wildlife is explored in some depth, but with a strong emphasis on the situation in North America. The issue has also been put forcefully by Shragg (2015). In *Move Upstream*, she makes a compelling case that virtually all of the problems identified by environmentalists as causes of concern are secondary to the consequences of overpopulation, defined as 'an undesirable condition where the number of existing human populations exceeds the carrying capacity of Earth'. Overpopulation, this emotive word, when used at all, has mainly been associated with developing countries. For some reason, problems from people numbers are considered relevant in Africa and Asia but largely ignored in Europe, despite the fact that in parts of this continent, including the UK, the impact of overpopulation on the environment is equally or more acute than in the developing world. This is particularly true in England, the most densely inhabited state of the union.

In the ensuing chapters, I consider first of all some assessments of the state of wildlife in Britain and how that has changed for the worse in recent decades. Proximal causes are then discussed, including direct

persecution, physical developments of the kind that destroyed my childhood pond, invasive activities such as disturbance by increased footfalls, agricultural ‘improvements’ (which turn out to be the main offenders), climate change and the spread of new pathogens. ‘Moving upstream’ involves linking many of these well-known damaging activities to human numbers. Then comes the context of facts about how far and fast Britain’s human population has increased, perceptions of the role of population size in human affairs, and how conservation measures might compensate for the ever-increasing population pressure.

Making the case for overpopulation problems in Britain is inherently more difficult than, for example, deducing the impact of climate change on wildlife. In the latter instance, there are many scientific papers demonstrating unequivocal links between climate warming and the distributions of plants and animals. Not so for population, a subject with precious few scientific studies to underpin analysis of its effects, particularly in Britain. The reason is simple to discern. The effects of overpopulation are mostly indirect, and connections have to be made between them and the proximal factors acting on wildlife mentioned above. Evidence must nevertheless be robust to be convincing, and there are certainly some relevant scientific papers, as well as a variety of specialist reports. Other aspects also differ from climate change. Computer modelling and experimental approaches are respectively more difficult or impossible in the context of overpopulation. Last but by no means least, some consequences of climate change have been beneficial to wildlife, at least in Britain. This is not true of overpopulation, where the impact has been overwhelmingly negative.

Failure to address the consequences of an escalating human population after initial interest in the subject waned some 40 years ago has had ramifications far beyond those involving wildlife. Instead of addressing the issue head on, healthy environments have been sacrificed to sustain ever-increasing numbers of people around the world. But the unhappy fate of dwindling wilderness is surely a bellwether for *Homo sapiens*. Thus far, we have postponed a day of reckoning as global resources have been squandered on a massive scale, but without a major rethink about population growth such a day will surely come.

In this book, I have included Latin names for species where first cited, but not in subsequent referrals. I have also used Britain and the UK interchangeably to minimise repetition in the text, realising of course that the two terms are not truly synonymous.

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Abbreviations

AD	ash dieback
AIDS	acquired immune deficiency syndrome
AONB	area of outstanding natural beauty
ASSI	Area of Special Scientific Interest (Northern Ireland)
BI	Biodiversity Intactness Index
BP	before present
BPS	basic payment scheme
bTB	bovine tuberculosis
BTO	British Trust for Ornithology
CAP	Common Agricultural Policy
CBD	Convention on Biological Diversity
Civitas	Institute for the Study of Civil Society
CO ₂	carbon dioxide
COVID-19	coronavirus 2019
CPRE	Council for the Protection of Rural England
DDT	dichlorodiphenyltrichloroethane
DED	Dutch elm disease
DEFRA	Department for Environment, Farming and Rural Affairs
ELMS	Environmental Land Management Scheme
EU	European Union
FERA	Food and Environment Research Agency
FoE	Friends of the Earth
GDP	gross domestic product
GP	general practitioner
ICPD	International Conference on Population and Development
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IUCN	International Union for the Conservation of Nature
IUD	intrauterine device
NBSAP	National Biodiversity Strategies and Action Plan

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NFU	National Farmers' Union
NGO	non-governmental organisation
NHS	National Health Service
NNR	National Nature Reserve
NO ₂	nitrogen dioxide
NPP	net primary production
ONS	Office for National Statistics
PCB	polychlorinated biphenyl
RHDV	rabbit haemorrhagic disease virus
RHS	Royal Horticultural Society
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SDG	Sustainable Development Goal
SO ₂	sulfur dioxide
SPA	Special Protection Area
SPS	single payment scheme
SSSI	Site of Special Scientific Interest
STC	Save the Children
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organisation
WWF	World Wide Fund for Nature (formerly World Wildlife Fund)