

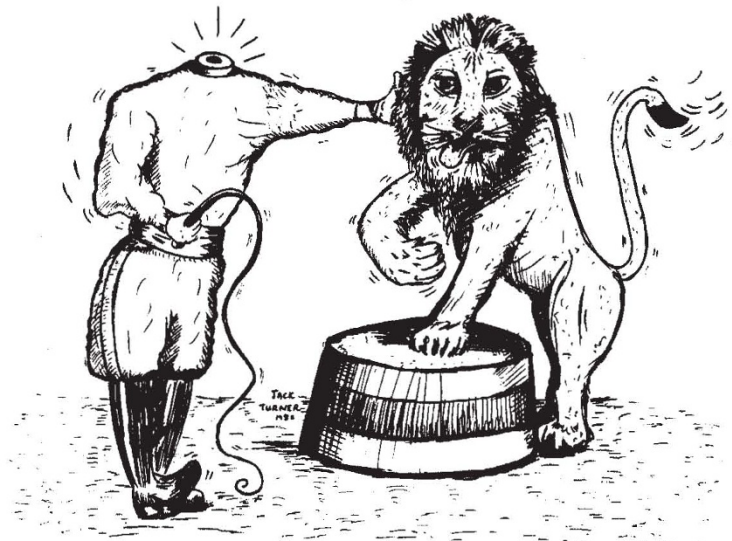
## Managing wildlife

T.H. Clutton-Brock

*Wildlife Management.* By R.H. Giles. Pp.416. (Freeman: San Francisco and Reading, 1979.) £11.40.

As human populations grow and plant and animal populations shrink, it becomes increasingly important for the former to control and manage the latter. The pressing need for trained managers has produced an eruption of wildlife management courses and Giles' book provides an introductory text for this growing market. The book includes chapters on the analysis and manipulation of animal populations, on habitat description and design, on controlling the effects of human populations and on the problems of managing particular groups of animals, from fish to bears.

*Wildlife Management* is written in an easy, colloquial style, and provides many clearly worked examples of numerical techniques and a list of study questions at the end of each chapter. It has more than its share of facile statements ("Wildlife management is a decision science; an extinct animal is one lacking survivors; all living populations are dynamic"), luxuriant verbiage ("People are an integral part of the population-habitat-people triad of wildlife management (see Figure 1-1)" and unnecessary jargon ("feedforward" for shaping the future of a system; "ecological amplitude" for the range of conditions in which an animal can survive; "opportunity cost" for the compensation that people require to forego behaviour which might harm wildlife). And to an English reader, a proportion of the section headings are ambiguous: for example, it was not immediately clear to me that sections on *Alpha-Person Theory* and *Waterfowl Violations* would deal with analyses of who breaks game laws and the frequency with which legislation involving waterfowl is infringed.



"Don't worry, it'll be all right on the night."

Just what is wildlife is not, according to Giles, very clear. Game species are definitely wildlife but wild flowers, lichens, viruses and nematodes are not. Butterflies may or may not be and fish are sometimes excluded (apparently because of the wiles of a US fisheries commissioner who persuaded Congress to change the name of the US Biological Survey to the US Fish and Wildlife Service, thus providing his particular branch of science with a place in the sun but consigning fish to an ecological purgatory somewhere between birds and invertebrates). This somewhat arbitrary selection, Giles argues, is necessary because "there is a danger of opening a conceptual umbrella so wide that it covers all biology . . .".

But surely this is precisely what wildlife management should aim to do. It is unfair to blame Giles for the implied dichotomy between wildlife biology and ecology since this is common in the wildlife literature. However, the attitude is a dangerous one, especially in an introductory text, for it could cause wildlife managers to believe that they do not require a close acquaintance with ecological and biological theory. This is far from the case and ignorance of

fundamental principles can only produce mistaken management policies. For example, a better knowledge of modern developments in ethological and evolutionary theory would surely have led Giles to modify his views that disease may have evolved as a density-regulating mechanism in some species and can be 'healthy' for such populations; that there is very little evidence for the inheritance of behavioural traits; and that inbreeding seldom has deleterious effects (pages 38 and 75). Such misconceptions could well have a dangerous effect on management policies. Moreover, only a broad understanding of ecological theory will allow managers to predict how previously unmanaged populations are likely to react to novel policies. Wildlife management is not an art form evolving into a separate science, as Giles suggests in his opening chapter. It is one branch of ecology and will only suffer if it is separated from other areas of biology. □

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## Adaptation and regulation

D. L. Ingram

*Principles of Animal Physiology.* By J. A. Wilson. Second edition. Pp.891. (Collier-Macmillan: West Drayton, UK, 1979.) £16.45; \$30.20. *Animal Physiology. Adaptation and Environment.* By K. Schmidt-Nielsen. Pp.560. Second edition. (Cambridge University Press: Cambridge and New York, 1979.) Hardback £22.50; paperback £6.95. *Adaptation to Thermal Environment.* By L. E. Mount. Pp.333. (Edward Arnold: London, 1979.) Hardback £16; paperback £7.50.

THESE three books all share the common themes of adaptation and regulation; but the scope of each is quite different.

*Principles of Animal Physiology* is a comprehensive textbook covering the whole field of animal physiology, both vertebrate and invertebrate, in nearly 900 pages. It is written entirely by one author and the fact that it is in its second edition must mean that it has been well received. The central theme with which the author has attempted to weld this wide variety of topics together is regulation, an idea which

is in accord with the modern view of physiological systems seen in terms of engineering and mathematical models. A book by a single author has the advantage of the same style throughout; but the subject covered here is so great that it would be very surprising indeed if all the facets were covered with a great depth of understanding.

Just as writing on such a wide range of subjects has its difficulties so does reviewing this type of book, and those chapters which are close to my own subject