1

Introduction

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1.1 Introduction to this volume

In November 2004, a seminal meeting was held in Erice (Sicily) where representatives from a wide range of European countries were asked to come and offer presentations on ungulate populations and their management in their respective countries. The overall idea was to learn from each others' experiences (and each others' mistakes), in the hopes of developing improved management strategies for the future. Speakers were asked to review the status of populations of wild ungulates in their countries, describe current legislation and management philosophy, and review problems and actual practice with day-to-day management.

The meeting was an enormous success – and very revealing in highlighting the diversity of attitudes and approaches to management of wild ungulates in general, as well as the very different issues faced by wildlife managers in different countries. After the meeting was over the organisers decided to prepare a book to 'encapsulate' the material to make it more widely available – to academic researchers, wildlife managers and policy makers alike. At the meeting in Erice, however, presentations covered only some 12 countries from within Europe; and it was determined that the book should be extended in order to include contributions from as many European countries as possible. That book, including coverage from some 28 countries (all EU countries except Malta, plus Norway, Switzerland and Croatia) was published by Cambridge University Press in 2010 (Apollonio *et al.*, 2010a, *European Ungulates and their Management in the 21st Century*); we believe that this was the first time anyone had attempted to try and draw together information on wild ungulates and their management across Europe.

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To try to ensure that authors provided material on all relevant topics (and all covered the same ground), and to try to facilitate an analysis of similarities and differences between the different countries involved, we asked authors to prepare chapters to a common template.
All chapters thus considered:

(i) the ungulate species present in their country and the distribution and numbers of each species
(ii) genetic status of populations of each species (whether native or introduced; whether genetically 'pure' or affected by subsequent introductions of animals of different genetic origin)
(iii) legislation and administrative structure for management
(iv) actual management practice; hunting philosophy, hunting methods
(v) problems with ungulate management (expanding populations of pest species; need for conservation of endangered species or subspecies)
(vi) impacts of ungulates on agriculture, forestry or conservation habitats; extent of ungulate involvement in road traffic accidents
(vii) an analysis of the extent to which management is addressing problems effectively (or the extent to which the problems are exacerbated by inappropriate management!).

Such was the scale of the project that we did not at that time attempt to offer a detailed synthesis of this diverse body of material. Our main aim was, explicitly, to draw together in one place a convenient single source of reference for the primary information itself – and with the book already extending to some 30-odd chapters, an equivalent 'weight' of synthesis would render the work so large as to be virtually unusable. However, one of the main themes rehearsed again and again by authors in the first volume, and highlighted by the editors in conclusion, was a need for science-based management (Apollonio *et al.*, 2010b).

In different countries, and for different species, management may be directed variously towards

- control of population numbers, or control of damaging impacts
- exploitation of a sustainable resource, for meat or recreation
- conservation of endangered species or subspecies.

But whatever its primary aim, that management will only be effective if it is well informed.

The aim of this book

In this volume, therefore, we have invited experts in a number of different areas of wildlife biology or management to review the different management approaches adopted in each of the various different countries of Europe, in relation to each of a number of management issues identified and to prepare some sort of synthesis of that experience.

Of course, in a purely factual sense, this new volume draws on the information which is now summarised in that earlier book (Apollonio *et al*., 2010a). In some senses therefore, this new book may be seen as a companion volume to that earlier work – but it is our hope that it may also be valid as a separate contribution in its own right. While inevitably each chapter is to an extent *informed* by the material summarised in that earlier volume, each author uses his or her own research experience and expertise to essay further development of the material in particular topical areas. Indeed the true nature of the relationship between the two books is perhaps that the first offers a convenient source of the information which underpins the analyses of this new volume (enabling any reader who may wish to seek more detail about individual examples, or about management practices in a particular given country, to return to the detailed descriptions of individual practices presented in that earlier work and find all the relevant background detail in one place).

As was the previous volume, this book is directed at practising wildlife managers and stalkers; policy makers in local regional or national administrations responsible for formulating policies affecting management of different wildlife species; and others who may be actively involved in research into improving methods of wildlife management.

In this book we review a number of issues which seem to crop up again and again as problems in management (or issues affecting management). Many of these were highlighted by Apollonio *et al*. (2010b), but are now developed in more detail. Topics include:

An overview of the basic resource and the administrative structures within which management is carried out:

- An overview of the ungulate species present: native species, problems associated with the introduction of non-native genotypes of native species, problems associated with the introduction of exotic species, and the implications for management of this varied genetic resource.
- Value systems for ungulates in Europe; management systems and the exploitation of ungulate populations for meat or sport.

- Management context: European legislation; an overview of different national and international legal constraints.
- Other constraints on management: hunting seasons in relation to biological breeding seasons and the implications for the control or regulation of ungulate populations.

A consideration of management issues:

- Impact of large ungulates on agriculture, forestry and conservation habitats in Europe.
- Road traffic accidents involving ungulates and available measures for mitigation.
- Large herbivores as 'environmental engineers' or agents of deliberate habitat change.
- Large carnivores and the impact of predation on populations of wild ungulates.
- The role of diseases in limiting or regulating large ungulate populations.
- Wild ungulates as vectors of disease.
- Climate change and implications for the future distribution and management of ungulates in Europe.

Through an exploration of the underlying biology and a comparison of the experience gained from different management approaches adopted in different places we then attempt to tease out what works (in what circumstances) and what does not.

One size does not *fit all!!!*

But inevitably, there are no 'holy grails' to be discovered, no 'universal' solutions. Different countries support different species of ungulates and different species-mixtures. Even with regard to the same species, management objectives may differ markedly in different places or in different contexts (whether directed towards control of populations and their impacts, management for exploitation, or a need for active conservation). Local circumstances may also affect what management options are actually available, or may affect the utility of any given method.

Superimposed on such variation is an equal variation in attitudes and cultural approaches to hunting and game management.

- In some countries with a long tradition of game management, hunting is positively celebrated.
- In other countries, while hunters are perhaps in the minority, there is no widespread 'objection' to the idea amongst the general public.

- In other countries again, the idea of hunting (taking life for pleasure) is widely considered repugnant, and hunting is only accepted by the general public if it is formally justified as necessary to maintain animal populations in balance with their wider environment, and to fulfil other management objectives.
- In such cases hunting is usually 're-branded' as 'game management' ... and often viewed with some reservations by society in general.
- Finally, in some countries hunting is actually illegal. All animal species are fully protected by law and permission to kill them for management purposes needs to be specifically applied for in every individual instance by seeking specific exemption under the law.

With such diversity even in cultural attitudes to hunting (together with profound differences between countries in legal and administrative regulation of hunting, it is not surprising that there is an equal diversity of hunting practice and, as above, we should not expect to find any single optimal solution. Rather, in this volume we focus on the issues in order to try and present an informed scientific basis on which any such solutions may be more soundly based.

But any such solution must 'fit' within the social attitudes and expectations which characterise any given culture, and it is perhaps instructive in this initial chapter to offer some overview of that same cultural diversity. We tend to become accustomed to what is common practice in our own country and assume that practice is similar elsewhere. Nothing could be further from the truth! And if we are better to understand the management systems and practices adopted in other countries it is helpful to understand their different social and cultural context.

1.2 Cultural attitudes to hunting

Attitudes to hunting and game management are likely to be influenced by a number of factors, amongst them: the legal status of game; the legal status of the right to hunt (and in both cases, therefore, whether hunting is seen as a socially divisive 'elitist' pursuit); the history of hunting and its place within cultural tradition; the proportion of the population as a whole who are engaged in hunting activities; and the level of 'urbanisation' of the human population (and thus their increasing detachment from the land).

This list is far from exclusive, and clearly many of these factors interact (or are different reflections of a common underlying basis). What is significant, however, is that cultural attitudes are changing in many countries – and changing quite rapidly as the result of a declining interest in hunting (as the percentage of the human population actively engaged in hunting or related

activities) and with increasing urbanisation. To the extent that public attitudes and public perceptions may influence what is deemed 'acceptable', it is clear that changing attitudes may well influence management approaches, management systems and management legislation in the future. This in turn may have implications (or provide future conflicts) with achieving effective management of wildlife populations.

At the present time there is little formal data available on attitudes to hunting throughout Europe. A new project just started under the European Commission 7th Framework Programme aims to assess the social, cultural, economic and ecological functions and impacts of hunting across a range of contexts in eight European and African countries, and to understand what influences attitudes to hunting, how these attitudes influence and determine individual and societal behaviour in relation to hunting and, finally, how hunting behaviour influences biodiversity. This project has, however, only just commenced, and in advance of any results from this or similar projects any presentation of the range of cultural attitudes across Europe must necessarily be somewhat subjective.

In attempting to provide some overview of stakeholder perceptions and attitudes it is helpful (if somewhat reductionist) to try and 'group together' the various different cultural systems existing in different places into a number of different 'clusters'. In effect we may reduce the diversity of cultural systems that exist to four basic cultural 'models' recognised by Yves Lecocq, the Secretary-General of FACE (the European Fédération des Associations de Chasse) as the Scandinavian (North European) model, the Germanic (Central European) model, the Anglo-Saxon model and the southern European model (Lecocq, 2007). Such a device is clearly oversimplistic and perhaps something of a caricature, and not every country fits into its regional stereotype, but by the same token it emphasises distinct differences in perspective of both hunter and wider public to hunting, game management and related (welfare) issues. This is useful not only in reviewing attitudes and perceptions, but also in beginning to understand differences in legislative requirements.

Lecocq notes the following characteristics.

1. *North European (Scandinavian) model:*

[Norway, northern Sweden, Finland, Denmark]

- Hunting is recreational, but with a major focus still concerned with generating food.
- Hunting is popular and widespread – with the highest proportion of hunters per head of population in Europe.

Lecocq uses Denmark as his 'type species'. We shall here substitute Norway (after Andersen *et al.*, 2010): "The main objective for cervid management in Norway is based upon sport/recreational hunting, but with a focus on venison production. Most of the venison harvested is consumed by the hunter and his family/friends, and only small amounts are accessible for trade. Although there are more than 400 000 persons in the official register of hunters, a much smaller proportion are actually active hunters at any one time: thus only about half of these (a total of 195 200 persons) paid the hunting fee for small game or large game for the hunting year 2005/2006 (some 5% of the total population). Nonetheless, in general, hunting is widely accepted and there are no ethical objections raised to the exploitation or harvest of wildlife species. Legislation simply emphasises that the concept of *sustainable use* should underpin all wildlife management" (Norway: Andersen *et al.*, 2010). In Sweden: 'The only general and national objective for the management of game species in Sweden is that they should be preserved in viable populations, but not be allowed to seriously damage other vital interests of the society' (Liberg *et al.*, 2010).

2. *Central European (German) model:*
[Germany, Hungary, Austria, Poland, other countries of the former German, Polish or Austro-Hungarian Empires, such as Slovakia, Croatia, Romania, etc.]
Lecocq characterises this group as having:

- very closely regulated hunting, strongly circumscribed by administrative and regulatory requirements and constraints as well as traditional practices
- a very long tradition and very strict 'rules' or codes of conduct (e.g. St Hubert's)
- hunting more concerned with management of ungulate populations than exploitation (at least for venison), but trophy quality important
- hunting not carried out by individuals, but rather by members of well-established hunting groups or hunting associations with long traditions
- well-trained hunters – with training provided by those same hunters associations or (Slovenia) hunters' families.

Clearly the 'expression' of this system varies somewhat from country to country, but with Austria as a type example we may note that perhaps 1.5% of the population are involved in hunting; in Slovenia figures are similar with 1.1% of the population as active hunters.

Hunters clubs are long-established with a great strength of tradition. In many cases there is a traditional hunters 'uniform' or dress code – worn by

forest managers or hunters. Hunters often serve a long 'apprenticeship' within the association before they are recognised as full hunting members; the whole concept of hunting is seen as an honoured and very honourable tradition.

3. *Anglo-Saxon model:*
[Typified perhaps by the UK and Ireland]
Lecocq suggests that here:

- Hunting is largely recreational.
- There is a relatively small number of participants – Lecocq suggests perhaps some 1 in 60 of the entire population (1.7%), similar to Austria, Germany etc.
- There is a high proportion of professional stalkers.

In the present analysis it is important to add that – perhaps because of the small number of active hunters and the long-standing association of the right to hunt with ownership of land, the wider general public (as a largely urban society) regards hunting with some disfavour, either simply because it involves the killing of animals or because they see it as the recreational pursuit of a land-owning elite. Such suspicion may also stem at least in some part from recognition that hunting in the UK is perhaps the least regulated of any country in Europe (i.e. least state intervention in management and management practice; Putman 2008a; see also this volume, Chapter 3).

4. *Southern European model:*
[Lecocq typifies this with Spain, but also includes Portugal, France, Italy, Greece and other Mediterranean countries]
This category is perhaps the most diverse and while it is adopted here for simplicity, it might not truly represent a single homogeneous group. Here hunting is relatively common and perhaps more widely accepted [perhaps 3% of the population are hunters] and would indeed appear to be a more social activity. However, attitudes are changing. In the last 50 years urbanisation led to a strong differentiation between the rural world and the urban society. In the former, hunting is still popular and widely accepted, while in the latter hunting is increasingly strongly opposed (see below).

As noted already, this characterisation of different 'national' attitudes is oversimplistic; hunting practices and attitudes in some countries fit uneasily within their 'type' while others really do not easily fit into any of Lecocq's categories (Netherlands, Belgium, Switzerland, perhaps Italy). Nonetheless

the implications are clear ... that there is no single European 'model' and significantly that: *attitudes and expectations amongst stakeholders and the wider public in relation to hunting will be strongly coloured by the 'traditional' view of hunting within the national culture and the proportion of the human population who are themselves actively engaged in hunting*.

It is in fact quite hard to undertake any formal analysis of the factors influencing public attitudes and public perceptions and the ways these may indeed be changing with increased urbanisation of human societies, as there are few objective surveys available.

However, such formal surveys as have been undertaken confirm that one of the primary factors affecting individual attitudes to hunting is personal experience (as a hunter, or closely related to others who hunt). In a survey of 415 interviews in Louisiana (Floyd *et al.*, 1986), the major factor influencing attitudes to hunting was direct participation in hunting or having family members and friends who hunt. Similar results were found by Stokke (2004) in a survey of 1000 Norwegians, weighted by gender, age, place of residence, income and education, to suggest a representative sample of Norway's population.

Once again, attitudes were found to be significantly coloured by personal experience of hunting, and a generally positive attitude towards hunting is linked to the fact that a total of 60% of the Norwegian population has a direct relationship with hunting and hunters either because they are themselves hunters or have close relatives or friends who hunt (Stokke, 2004).

Other factors are likely to include (as above)

(i) the legal status of wildlife (whether the state or the private individual or whether they are in effect *res nullius*)
(ii) the degree of state intervention in (and thus state regulation of) management
(iii) the proportion of the human population actively involved in hunting
(iv) the cultural and historical traditions of hunting (as e.g. within countries of a more Germanic tradition)
(v) the degree to which human society is increasingly urbanised (although this last may in itself have an indirect effect simply through the reduction in the proportion of the overall population who have direct experience of hunting and simultaneous reduction of proportion of population having direct contact with animals at all whether wild or domestic).

Clearly however, there could be significant implication for future management in any country as attitudes change over time in response to changes in

these driving variables. Aware of these changes in perception and attitude, management systems and legislation are currently under active review in a significant number of countries in Europe and North America, with increasing attention being paid to management systems, ways of improving welfare (e.g. Putman, 2008b, 2008c), and review of alternative non-lethal management approaches such as immunocontraception or translocation (Putman, 1997, 2004; Green, 2008).

1.3 Conclusions

We develop this theme of contrasting attitudes to hunting in some detail here since not only is it extremely striking, but it has a profound effect on many other aspects of game management and its administration (training, hunting practice, etc.). There is similar (and often related) variation in legislative systems and the administration of hunting (explored in more detail in Chapter 3). Taken in combination with differences in game species present and differences in objectives of management, we should then expect a diversity of solutions to management of game animals and their impacts.

Whatever the solution, however, the driving theme of this book is that solutions should be informed by a proper scientific appraisal of the management issues and problems to be resolved.

The chapters which follow aim to offer a review of some of the most relevant issues which must be considered by managers (and legislators).

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