The Vicuña

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Editor

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The Theory and Practice of Community Based Wildlife Management

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Foreword

Things have changed. In 1969 when the *Convention for the Conservation of the Vicuña* was drafted, in an attempt to save the vicuña from its tumbling decline towards extinction, both the science and the philosophy of wildlife conservation were radically different. It is thus a tribute to the prescience of those involved at the time that the rescue plan had, even through the harsh lens of hindsight, a distinctly Twenty First Century flavour. After all, it was predicated on the expectation that if vicuña could be saved, they would one day become a valued asset, generating revenue for the human communities that fostered their survival. Embodied in this aspiration are the main structures of modern biodiversity conservation – not only is it to be underpinned by science, but that science should be of both the natural and the social genres, woven into inter-disciplinarity, and thereby taking heed of economics, governance, ownership and the like, alongside biology. In addition, it should include, as a major strut, the human dimension, taking account of the affected constituencies with their varied stakes in alternative outcomes. This contemporary framework for thinking about biodiversity conservation is inseparable from such wider, and inherently political, notions as community-based conservation and ultimately sustainable use. This book, and the story of the vicuña's complicated journey with humanity into the present – brought into focus through the splendid Manejo Sostenible de Camélidos Silvestres (MACs) project in which I have been delighted to participate – is thus much more than just another monograph about an interesting species. Rather, it presents an opportunity that is unusual – because the emphasis on sustainability and the human dimension started so unusually early in this case - to look into the future and anticipate problems and solutions that may be encountered by those trying to foster other species, elsewhere, but starting down the road much more recently. In short, this is not just a book about vicuña, it is a book holding lessons for anyone thinking about, or taking action towards, practical conservation. Some of those lessons are edifying, others threaten despair – and that too is the wider reality of practical conservation.

In a recent book on biodiversity conservation, Macdonald et al. (2007) used the term 'alignment' to capture the notion that solutions must harness the disparate individual and institutional drivers within the conservation enterprise to a common purpose. They went on to single out eleven themes that should be aligned within conservation – every one of which is illustrated by the vicuña story as unfolded

in this book, and first amongst these was that the aspirations of biodiversity conservation and development – particularly the alleviation of poverty – cannot be solved separately. For much of the Twentieth Century, biodiversity conservation was championed by naturalists whose love of nature and wilderness took rather little account of the human dimension. Now, and wondrously, Conservation has a seat at the high table of international affairs, and sits there next to Development. The opportunity to influence outcomes is huge, but so too is the difficulty of aligning the aspirations of conservation with development now that the opportunity for retreat to a comfortable silo has been cut off. Macdonald et al. (op. cit.) trace the history of growing enthusiasm for human well-being and livelihoods as a driver for biodiversity conservation, to the extent that it threatened to create a political correctness whereby the biodiversity element of the mix might be overwhelmed. In surveying the lessons learnt from the MACs project, Iain Gordon sagely notes that some in the social sciences may have forgotten that the delivery of community wellbeing and biodiversity were conceived as equal, synergistic, goals within the concept of community-based conservation. This pendulum may now be shifting to a better alignment, and few cases illustrate the issues more vividly than the vicuña story. Indeed, Wheeler and Laker (Chapter 3) offer a salutary, if unsettling, conclusion that the future remains uncertain. The blend of economic and regulatory conditions offers little comfort that poaching, at a level that undermines the whole venture, can be contained.

This brings us to the topics of value and rights. For a community to foster vicuña they must value them, whether that community is a village of Andean farmers or the doyens of an international legislature. The MACs project has sought to expose the economic realities to determine whether that value can come reliably from the vicuña's capacity to generate revenue, and the brutal truth is that no clear answer emerges. This is partly because of a profusion of uncertainties in the market, making it unclear just how much the harvest is likely to be worth for the producer in the Andean community. As Stolen et al. (Chapter 7) reveal, a veritable hornet's nest of complexity emerges even from the first step of trying to define the qualifying criteria for inclusion within that community. Further down that bumpy road lie decisions on the nature of the ownership rights to the vicuña and their products, and such thorny issues as how such rights would be regulated if, for example, a given segment of the Andean community decided it was in its interest to follow a plan that was damaging or even catastrophic for the conservation of vicuña. It may have been helpful to leave the Andean community as undefined when, in 1979, they were named the beneficiaries of the Convention for the Conservation and Management of the Vicuña, but it is probably not helpful now. But all these thoughts of economic value and ownership shriek for the importance of other types of value. The prospects for vicuña, and everything else besides, are likely to be much less shaky to the extent that people, especially local people, value them beyond their usefulness. In this context, Bibi Vilá writes compellingly about the successes, within MACs, of the education programme. Money is clearly very important, but it is also sufficiently fickle that if the barometer of their value

measures only attributes that can be monetised, then vicuña have much to fear from short-term expediency. In this context, Macdonald et al. (op. cit.) also emphasise the demon of shifting baselines. While we must rejoice that from a precarious minimum of 15,000, some 250,000 vicuña are alive today, let us also remember the perspective of a natural benchmark (a measure of what has been lost, as opposed to a measure of the risk of losing more): there were more than two million of them before humans set to work.

I mentioned that a feature of modern biodiversity conservation, and of the vicuña story in particular, is its inter-disciplinarity. The issues of development, economics, governance, education and regulation already make it clear that while biology is necessary it is not sufficient. Nonetheless, two very important and essentially biological points are illustrated by the vicuña. The first point is generic – that the extent of intra-specific variation in animal behaviour is so great that those formulating management policy should not be caught off guard if the species behaves differently under different circumstances. Marcelo Cassini's team (Chapter 4) make clear that not all vicuña populations adhere to the strictly territorial model thought originally to characterise them. Furthermore, when manipulating populations it is important to appreciate the dynamics of their natural processes (Bonacic et al. (2002) reveal that such processes may be density dependent, for example, reproductive success varies with group size). The second biological point, illustrated importantly by the story of vicuña, is that animal welfare science has a role to play in biodiversity conservation. All too often, the enthusiasm for animals that unites them is squandered because a wedge separates those concerned with the conservation of populations from those concerned with the well-being of individuals. This polarisation strikes me as a bad thing, and one that is ill-founded – populations are, after all, an emergent phenomenon of individuals, and concern for both the whole and the parts is just one more dimension along which we should quest for alignment. The case of the vicuña emphasises the importance of animal welfare to conservation because, unusually, the product to be used, the fiber, can be harvested *in vivo*. The sustainability of the harvest hinges, therefore, not only the deaths of vicuña, but on their welfare during harvest. This has both a technical and a reputational aspect. First, it is necessary to scrutinise and measure scientifically the vicuña's welfare, and for ethical reasons to strive to maximise it. This has necessitated moving forward the forefront of wild animal welfare science to find the necessary tools and measurements (Bonacic et al. 2006). Second, it is necessary to prioritise the vicuña's welfare for hard-nosed commercial reasons – a luxury product for sale in affluent markets could not withstand the blight of association with cruelty. Thus, in this case, there is an important instance of alignment – the management of the crop, and of the market, both necessitate attention to welfare, and stimulate scientific inventiveness in measuring and monitoring it.

So, a veritable meteor shower of issues cascade from attempts to conserve vicuña through their use, and these few introductory thoughts touch on just a handful of them. Hopefully, however, they suffice to illustrate not only the complex particularities of conserving vicuña in the Andes, but also present the vicuña as

metaphor for generalities that inform the alignment of biodiversity conservation and human development. Many uncertainties remain, but the MACs project, and this book, have done great service in exposing them.

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Contents

Chapter 1
The Philosophy of Sustainable Wildlife Use

Iain Gordon

1.1 Introduction

Throughout history, humans have used wildlife species to supply their needs, be it for clothing, meat, power or prestige (Roth and Merz, 1997). With the global growth of human populations increasing pressure has been placed upon species, either directly through exploitation or indirectly through habitat loss (Owen-Smith, 1988; Wroe et al., 2004; Burney and Flannery, 2005). In the early twentieth century this led to the establishment of reserve areas or national parks in which wildlife and their habitats were protected (McNeely and Miller, 1984). While this protectionist approach has conserved many species from extinction, it has also led to severe conflict between people and wildlife, particularly where they interact, for example on the borders of the protected areas (Woodroffe et al., 2005). However, many species of wildlife still exist outside the protected areas and a number of these species will remain viable only if these populations continue to survive in harmony with the people with whom they coexist (e.g. Gratwicke, 2007). This has led to the development of a philosophy for sustainable use of wildlife outside the protected areas (the community-based conservation approach) (Hulme and Murphree, 2001).

One of the tenets of the community-based conservation approach is that, because people reap an economic return for the use of wildlife species, their attitude to wildlife will improve and will lead to communities conserving those valued wildlife species (Hulme and Murphree, 2001). Clearly, for this to be the case, the community has to have rights over the use and management of that wildlife resource and individuals have to benefit, either directly or though community-based initiatives that improve quality of life (Martin, 1986). However, while the opening up of trade for a wildlife product (trophy, meat, skin or fibre) can benefit individuals, communities and wildlife, it may also mean that individuals or groups that are denied legal benefits may opt to participate in the market through supply of poached products. This may, in the end, cause over-harvesting of the wildlife resource, resulting either in extinction or a ban on trade through local, regional or international treaties.

Sustainable use of any wild species often provokes controversy and opposition (Prins et al., 2000); in a global situation of rapid loss of biodiversity, cases

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where wildlife species are abundant enough to be able to cope with commercial use are rare. In many cases, hunting or harvesting wild animals in the past has been one of the main factors in their numerical decline and potential extinction, which leads to conflicting philosophies between proponents of sustainable use and conservationists. Elephants and whales are iconic examples of the permanent battle waged between conservationists and promoters of wildlife use. Periodically, this issue is discussed in the CITES (Convention on Trade in Endangered Species), a global body responsible for regulating trade in wild species and their products' commercialisation. It is against this backdrop that the consideration of the sustainable use of the vicuña takes place.

The vicuña (*Vicugna vicugna*) (Fig. 1.1) provides an extremely interesting and enlightening case study of the political economy of wildlife management, as policy shifts from total conservation to a more complex, and contested, sustainable use approach. The first stage of total protection was extremely successful (McNeill and Lichtenstein, 2003); this policy received widespread support both nationally and internationally and the vicuña has become one of the few success stories of wildlife conservation. The next stage, that of sustainable use, has now been entered and the political consensus begins to break down; ongoing developments in international conservation policy within CITES, have established a legal basis for exploitation of both wild populations of vicuña and herds in captivity. This recent shift in emphasis from conservation to sustainable use requires that systems be developed that are economically viable, while maintaining adequate monitoring of the impact of management in individual animal welfare and population ecology. As many of the indigenous communities involved give religious importance to the vicuña, there is an extra socio-cultural dimension to this work.

Increasing populations of vicuña are, however, raising new challenges for effective management. Internationally, policy development has followed the

Fig. 1.1 Northern (*left*) and southern subspecies of vicuña, *Vicugna vicugna* (*V.v. mensalis* and *V.v. vicugna*) (Photos, J. Laker)

community-based conservation paradigm, which holds that economic benefits from wildlife management practices bring greater commitment on the part of local communities to protect both the species and its habitat. However, sustainability of the species or the environment in which it lives is not guaranteed by sustainable use, and both education and regulation are required to prevent the proliferation of unsustainable practices. The debate has now shifted to a series of unresolved questions about the sustainability of different approaches to harvesting and marketing fibre should wild or captive management be adopted; how should benefits be distributed between individuals and communities; how humane is the capture, of wild animals for fibre harvesting and what policy instruments need to be put in place to prevent poaching and the development of an illegal fibre trade? The current argument for the consumptive use of vicuña is that it is based on fibre harvest from live animals and no individuals are lost as a result. Ancient traditions are invoked as one of the reasons for live animal shearing and the herding systems being adopted in several countries are an attempt to emulate those old methods. The objective is to deliver a financial return to local communities that have protected the species on their land for decades and have potentially foregone other income because of the presence of the vicuña. Community wildlife management does not replace conservation, but it does fundamentally alter the nature of the task that conservation agencies face by requiring much stronger engagement with local communities.

The vicuña roams the high-altitude steppes of the Andes. It is a highly social species with males defending small family groups of females and their young (*cria*) all year round. The vicuña's highly-prized fleece has been both its greatest asset and its biggest downfall. Four centuries of over-exploitation since the arrival of the Spanish led to the species' near extinction in the 1960s. As a consequence of effective conservation measures by both international and national legislation over the past 40 years, the vicuña has recovered to population levels that have allowed some regional populations to be moved from CITES Appendix I to Appendix II, allowing local communities to exploit the fibre from live-shorn animals.

The different countries in the main range of the vicuña (Argentina, Bolivia, Chile, and Peru) have adopted different approaches to the exploitation of the species, ranging from captive management under farm conditions in Argentina, ranching systems in fenced areas in Peru and Chile and the capture and release of wild populations in Bolivia, Peru and Chile. These different management systems reflect local limitations and aspirations, but each has a different outcome both in the degree to which local communities benefit from the exploitation of the fibre, and in the contribution that such management makes to conservation of the vicuña and its habitat.

The recovery of vicuña populations in the wild provides the European and USA quality textile industry with a unique opportunity to develop new top-of-the-range products based on environmentally sound wildlife management and fair trade with developing countries. This opportunity presents many challenges for the development of appropriate management systems, animal welfare and distribution of benefits among producers.

1.2 The MACS Project

The chapters in this book are based upon research conducted under the Proyecto Manejo Sostenible de Camélidos Silvestres (MACS; http://www.macs.puc.cl) that was initiated in order to establish standards of best practice in management of vicuña. The MACS project aimed to increase the productive base of pastoral communities in the high mountain and steppe ecosystems in the Andes of Latin America by providing the research necessary to develop systems for the production of high value, high-quality textile fibres from the vicuña, while securing the interests of conservation and animal welfare and equitable distribution of benefits. The MACS project took a systems-based approach (Fig. 1.2) focusing on the primary issues which were ecological, economic, ethical and social in nature. The multiple approaches combined to make the most ambitious study yet undertaken on wild camelid management and the results are already making a significant contribution to policy for integrated conservation and commercial use.

It is clear that the use of the fibre from this iconic species can make a genuinely positive contribution to sustainable rural development, including indigenous peoples, as well as providing an economic incentive for wildlife, and indeed ecosystem,

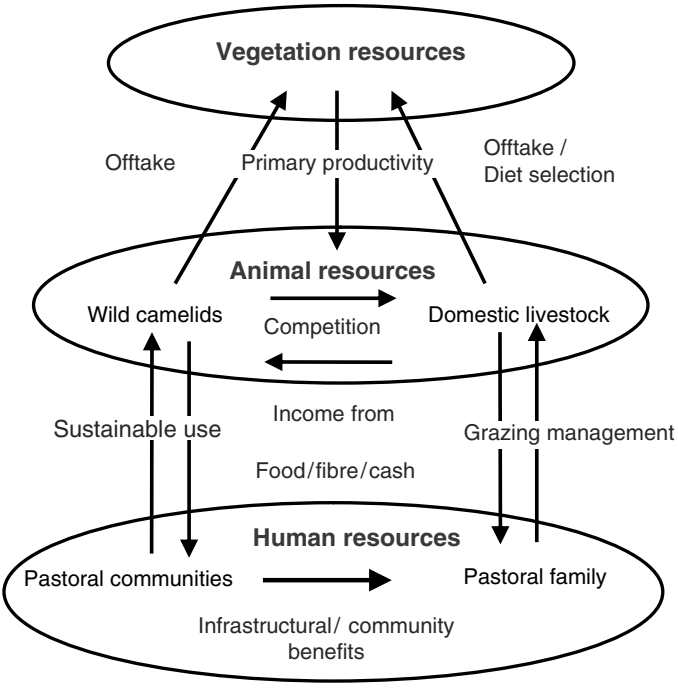

Fig. 1.2 A holistic integrated approach to the development of community based sustainable use of the vicuña in the South American Andes

conservation. It is also clear that changing the management paradigm from protection to commercial use opens up many opportunities for over-exploitation, poaching and inappropriate management practices that could jeopardise this initiative. This book explores these issues in the context of developing a dialogue between producers, the textile industry and wildlife conservation organizations that facilitates the integration of market forces and appropriate resource management practice. Contributors from both Latin America and Europe present the results of their research on production systems and the implications for conservation and animal welfare; camelid fibre quality, processing and trade; the vicuña as agent of Andean rural development and the outlook for the coming years in international conservation policy.

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