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MOVING THE BOUNDARIES: ENABLING VETERINARY INVOLVEMENT IN CONSERVATION THROUGH EDUCATION

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Abstract

There are many boundaries which may hinder the ability of veterinarians to contribute effectively to wildlife conservation initiatives. This paper discusses veterinary educational initiatives at Murdoch University that are moving disciplinary, institutional, cultural, experiential and educational boundaries to train veterinary students and graduate veterinarians in wildlife, zoo and conservation medicine. The collaborative partnership with the Veterinary Department at Perth Zoo, which resulted in the establishment of several of these educational initiatives, will be discussed.

Introduction

Biodiversity conservation poses enormously complex challenges which are further compounded by the fact that in most cases decisions must be made quickly and in the face of incomplete data. The challenges can only be addressed through interdisciplinary approaches involving diverse expertise; effective communication and exchange of knowledge; the ability to reconcile polarised views and reach consensus; and the efficient use of limited finance and resources.^{3,8}

Veterinarians have a significant role to play within interdisciplinary teams working on biodiversity conservation projects.^{3,8,11} Wildlife veterinarians can contribute in a significant manner to the planning and implementation stages of wildlife conservation projects. Private veterinary practitioners can also have a pivotal role to play in biodiversity conservation, since they are literally 'at the coal face' dealing with members of the community on a daily basis. Private practitioners are not only in a position to tend to injured and ill wildlife clinical cases, but also can provide advice to ensure that wildlife rehabilitation efforts are ecologically sound and can collaborate with local government agencies and community-based conservation groups on wildlife conservation projects.

Veterinary involvement in biodiversity conservation projects may include: health assessment and monitoring of wildlife and/or domestic animal populations; health studies of zoonotic, anthrozootic and interspecies transmission of diseases, involvement with welfare, regulation and production aspects of wildlife utilization programs, training and capacity building in developing countries, interdisciplinary collaboration, data collection and management, research,

development of diagnostic capabilities to improve identification of disease agents in wildlife, in-situ and ex-situ management of threatened species, planning of export and import procedures of wildlife species, and policy development at a local, national and international level.^{3,4,6,12}

Discussion

In Australia, although many veterinarians have been interested in wildlife conservation, the concept of active and worthwhile involvement in biodiversity conservation has seemed difficult to achieve.⁵ There are many boundaries which may hinder the ability of veterinarians to contribute effectively to wildlife conservation initiatives.

This paper discusses veterinary educational initiatives at Murdoch University, in Perth Western Australia, that are moving boundaries to train veterinary students and graduate veterinarians in wildlife, zoo and conservation medicine. Several of these educational initiatives have been established as the result of collaboration with the veterinary department at Perth Zoo. The following educational initiatives will be discussed in this paper:

Postgraduate studies in conservation medicine (Master of Veterinary Studies in Conservation Medicine and Postgraduate Certificate in Veterinary Conservation Medicine).

Wildlife and zoo medicine clinical rotation for undergraduate students.
Postgraduate residency program based at Perth Zoo.

Conservation medicine field trip to Indonesia for undergraduate students.
Wildlife medicine externships for undergraduate students.

The boundaries that confront many veterinarians and that will be discussed in terms of these educational initiatives are disciplinary, institutional, cultural, experiential and educational boundaries.

Disciplinary

Collaboration between scientists from a range of disciplines is required to address the biologic, political, economic and social aspects of biodiversity conservation problems.⁸ Karesh, et al. (2002) emphasise the importance of constructing bridges "to connect castles of disciplinary knowledge" in order to ensure successful conservation outcomes. In order to effectively contribute to biodiversity conservation, wildlife veterinarians must be able to see the big picture and develop a global viewpoint.^{2,4,12} Wildlife veterinarians should not only have a sound understanding of epidemiology, wildlife biology and management, but should also be familiar with principles from other disciplines that are relevant to biodiversity conservation.

Conservation professionals often find themselves exploring a diverse range of disciplines, which are new and unfamiliar to them, in order to implement conservation initiatives. The postgraduate

programs in conservation medicine provide veterinarians with training and expertise, which can be applied in private practice, zoos and wildlife conservation projects. Students undertaking the Master of Veterinary Studies in Conservation Medicine are able to select electives from the disciplines of biologic, environmental and social sciences. The issues covered by these elective units are pertinent to biodiversity conservation, and often form the basis upon which the success of conservation projects is dependent.

Postgraduate students in the conservation medicine program also have the opportunity to undertake a field placement with a conservation project either in Australia or overseas. These placements enable graduate students to work in the field with wildlife veterinarians and biologists and therefore directly experience and appreciate the necessity of an interdisciplinary approach to wildlife conservation.

Institutional

Institutional boundaries also inhibit collaboration on biodiversity conservation. It is crucial that institutions working towards similar conservation goals collaborate to ensure that expertise is shared and limited resources are used effectively.

The southwest of Western Australia is internationally recognised as one of 25 Global Biodiversity Hotspot regions. This region is also recognised for the threats to its wildlife and the severity of its environmental degradation, which pose significant challenges to biodiversity conservation. This places a special responsibility on the institutions involved with managing this biodiversity. Close collaborative links have been established between Murdoch University, Perth Zoo and the Western Australian Department of Conservation and Land Management in efforts to address some of these challenges, through long-term health monitoring research projects associated with several endangered fauna recovery programs and through these new educational initiatives.

Murdoch University and Perth Zoo are currently collaborating to establish and offer the postgraduate programs in conservation medicine, the undergraduate wildlife and zoo medicine clinical rotation, the postgraduate residency program and the wildlife externship program for undergraduates. In establishing the undergraduate Wildlife and Zoo Clinical Rotation, both institutions recognized the need to incorporate training in wildlife medicine in the undergraduate curriculum for veterinary students. As a result, a collaborative program was developed that involves all fifth-year students undertaking a rotation in wildlife medicine in a teaching facility which is based at Perth Zoo. The development of this clinical rotation, which represents an innovative teaching initiative in the Australasian region, exposes the students to their responsibilities in treating wildlife and trains them in the basic principles necessary to deal with sick and injured wildlife, which could be presented for examination and treatment by veterinarians in private practice.

The on-line postgraduate programs in Conservation Medicine are offered to provide veterinarians in practice with training in the fields of wildlife and conservation medicine. Collaborative associations have also been established with a number of wildlife agencies, conservation projects and zoos in Australia and overseas, to enable postgraduate conservation medicine students to undertake a placement at one of these institutions.

Interpersonal/Cultural

Veterinarians are usually respected and influential societal members within a community and are therefore in a position to engage in informed debate concerning environmental issues, with the primary goal being to effect change. Veterinarians can only effectively engage in such a debate if they have a holistic approach to veterinary medicine, good knowledge of the relevant issues, good inter-personal skills and are able to listen to differing points of view from stakeholders and reach consensus on important environmental issues.^{5,8,9}

In developing countries, issues of poverty and rural development are intertwined with those of biodiversity conservation; and as such biodiversity conservation initiatives must address socioeconomic issues of the rural poor in developing countries if they are to have a chance of success. Foreign involvement in wildlife conservation projects in developing countries has been associated with the transfer of technology and practices from developed countries, which often turn out to be inappropriate, impractical and unsustainable within the context of a developing country.¹⁰ Foreign veterinarians can play an important role in wildlife conservation projects in developing countries as long as they are culturally sensitive, have a good understanding of socioeconomic issues in these countries, and avoid the detrimental pitfalls of value judgments associated with ecological imperialism. Foreign veterinarians working in such projects should focus their efforts on "capacity building and education so that local people can become more involved in conservation programs and see the relevance of conservation in their own lives."¹⁰ The postgraduate programs in conservation medicine highlight the interdependence of environmental conservation and sustainable development, particularly in poor rural communities. The field placements, associated with the postgraduate programs, enable students to work collaboratively with local veterinarians in developing countries. The field trip to Indonesia gives students exposure to basic issues in conservation medicine in a developing country context.

Experiential

Until recently, veterinarians in Australia have not been trained for involvement in biodiversity conservation projects and Keefe (1997) argues many of these veterinarians are "blinkerered" as a result.

The standard training that veterinarians receive in the areas of problem-solving, acquisition of technical knowledge, development of diagnostic plans and communication, provide them with skills and expertise which can be applied to wildlife conservation projects. However, there is often a nervous apprehension among private practitioners about their ability to treat wildlife

patients and contribute effectively to biodiversity conservation issues. Keefe (1997) challenges veterinarians about these misplaced apprehensions and states, "if you must do but one violent action in your life, let it be the ripping off of those blinkers and the casting of them aside."

The educational programs outlined here aim to provide veterinary students and graduate veterinarians with the basic expertise required to work in the fields of wildlife, zoo or conservation medicine.

Educational

The postgraduate programs in conservation medicine are flexible in their program structure so that students can select electives that are relevant to work in private practice, zoos or wildlife conservation projects. These programs are offered in both internal and external mode; and can be undertaken by full-time or part-time study. The fact that these programs can be studied via distance education has provided greater access for veterinarians that are not able to leave the work place in order to take up full-time study. It is hoped that in addition to training specialists who will find full-time careers in wildlife medicine, this degree will enable veterinarians in rural and urban private practices to extend their work to include involvement in the development and implementation of effective wildlife conservation policy and practice.

Veterinary involvement is considered critical to the success of wildlife conservation programs that are planned and implemented by governmental and non-governmental organizations.^{1,7,13} This paper has discussed several educational initiatives offered by Murdoch University. These educational programs are moving boundaries, which have traditionally impeded veterinary involvement in biodiversity conservation programs, and aim to train veterinarians to effectively participate in *in-situ* wildlife conservation projects.

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