

# The relationship between the role of zoos and urbanization

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**Abstract :** This article discusses a useful tool for creating a more effective conservational social system by the linkage of *in situ* and *ex situ* conservation. The role of zoos has changed from merely keeping animals for public viewing to conserving endangered wildlife, educating people about conservation or ecology, and promoting research. Further, the zoo conservation has required working not only for *ex situ*, but also for *in situ*. In this paper, ecotourism is described as a tool for *in situ*, and it can make the linkage with *ex situ* conservation. Further, this paper suggests that regional specialized zoos can play an important role in future conservation.

**Keywords:** Zoo, Wildlife conservation, Ecotourism

## Introduction

Since several decades, humans have been facing many social problems related to changes of environmental elements. The complexity and magnitude of threats to nature have been well documented (Soulè, 1986; Meffe and Carroll, 1997; Primack, 2002; Wilson, 2002). In total, 15,503 species are currently included on the Red List—5,188 vertebrate species, 1,992 invertebrate species, and 8,321 plant species (IUCN, 2004). Furthermore, many other species were extinct before their classification (Pfeiffer and Uril, 2003). Most of the endangered species are endemic and keystone species<sup>1</sup>, and most of their habitats are mainly belonging to hotspots (Myers *et al.*, 2000). Prevention of species extinction, particularly of endemic species, is essential for biodiversity conservation.

For this purpose, conservation activities are underway in many places. The representatives of these are the collection-based institutions - zoos, aquariums, botanical gardens, and natural history museums. These institutions can play a significant role in changing the trend of decline in biodiversity (Miller *et al.*, 2004) and contribute directly to the science and education of conservation. Therefore, various authors have encouraged them to take up more activities (Rabb, 1994; Hutchins *et al.*, 1995; Conway, 2000; Wemmer, 2002; Hutchins, 2003). This paper aims to analyze the evolution of the role of zoological garden as conservation institutions with a special focus on its relationship with the change of human lifestyle. Further, it interprets the social requirements of nature and proposes alternative measures for wildlife conservation.

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<sup>1</sup>Keystone species are who enrich ecosystem function in a unique and significant manner through their activities, and the effect is disproportionate to their numerical abundance. Their removal initiates changes in ecosystem structure and often loss of diversity. These keystones may be habitat modifiers (ie. cottonwoods, rushes and ironwood), keystone predators (ie. puma and coyote) or keystone herbivores (ie. prairie dog and beaver).

## 動物園角色與都市化關係

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**摘要：**本篇文章討論關於創造能更有效聯結域內與域外保育的保育社會系統是一個很有用的工具。動物園的角色轉變，從提供大眾觀賞動物，轉為關懷瀕臨絕種動物、教育大眾關於保育、生態以及推廣研究成果。再者，動物園的保育工作不僅有域外保育的需求，還有域內保育。本篇文章中，生態旅遊可作為域內保育的一項工具，並使其連結到域外保育。更者，本篇文章也建議區域性的特定動物園可以在未來的保育工作上，扮演更重要的角色。

**關鍵字：**動物園、野生動物保育、生態旅遊

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