

# **ENVIRONMENTAL ATTITUDE OF THE PEOPLE AND STAKEHOLDERS TOWARDS URBAN BIODIVERSITY IN KUALA LUMPUR, MALAYSIA**

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## **SUMMARY**

Urban biodiversity and wildlife management have been accepted as important ecological components of the urban environment. The world population is increasing very rapidly, overwhelming all efforts in urban wildlife protection and management. The urban population is growing at a much faster rate than the population as a whole. In 2009, there were 3.42 billion people living in towns and cities and this is predicted to increase to 6.3 billion by 2050. This poses major challenges to those responsible for the provision of green spaces and for preserving the biodiversity of urban areas. It is reasonably clear that biodiversity protection and management are deficient in almost all cities in developing countries. The deficiencies are not the same in all cities, but they generally relate to the perceptions of citizens and stakeholders.

Urban green space and biodiversity are crucial in achieving sustainable cities because they involve social, economic and environmental issues and, if managed properly, result in ecological benefits for the cities' inhabitants. However, in Malaysia, landscape and urban green space have received little attention in land use planning. In Malaysia, very limited research has been undertaken to gain an understanding of people's preferences towards biodiversity such as wildlife. Furthermore, there is limited understanding of people's preferences on urban biodiversity either in the single species approach or in their general preferences. Kuala Lumpur aims to promote and improve the quality of its living environment and to develop a sustainable approach for the development of urban green space. Thus, it is important to understand the attitude of people towards local urban parks and biodiversity especially wildlife and how it relates to the planning and development of green open spaces.

Recently, landscape and urban green space planning has been gaining prominence in urban planning, design and development. Unfortunately, there is limited research and literature in environment and planning fields that discuss the importance of landscape and urban green space planning in preserving and maintaining urban biodiversity. Around the world, there has been increasing demand to preserve urban biodiversity. This includes the human and wildlife interrelationship in the urban environment. The 'human dimension' is the integration between the social dimension and existing ecological information. Unfortunately, there has been a lack of investigations using this approach in urban planning especially in developing countries including Malaysia.

The aim of this research is to explore the attitudes of stakeholders, residents and urban park users towards urban biodiversity especially urban wildlife in Kuala Lumpur, Malaysia. This thesis has investigated people's preferences with regard to their local urban parks and biodiversity: the research employed an integrated approach in which social and environmental information has been integrated using the human dimension approach. This thesis concluded that both social and environmental information have interrelated functions in urban environments. Qualitative and quantitative methods were used to analyse the responses.

The study used a three-step method. The first step was conducted to capture visitors' and stakeholders' understanding about their local urban public parks and biodiversity: their opinion towards urban wildlife was captured through semi-structured interviews. These interviews suggested that visitors perceived social benefits such as physical activities and health benefits. However, they also recognised the importance of environmental benefits and expressed dissatisfaction about the wildlife and vegetation maintenance and developments in urban parks. Meanwhile, the stakeholders, City Hall of Kuala Lumpur (CHKL), National Landscape Department (NLD) and Department of Wildlife and National Parks (DWNP), expressed higher preference towards urban open spaces and wildlife. Most of them agreed that urban biodiversity played an important role in the ecological balance and health of cities. However, issues such as legislation were highlighted, and responsibilities and awareness were still lacking at the decision and policy-making levels such as in the ministry and local authorities.

The second step was the landscape observation survey to identify the abundance of urban wildlife such as bird, mammal and reptile species in the urban parks in Kuala Lumpur. The survey also investigated the vegetation and habitat characteristics which are an important factor for biodiversity richness. The landscape observation survey investigated and confirmed the abundance of wildlife species and vegetation characteristics which existed in Kuala Lumpur's urban parks. The study found that the urban parks were dominated by common species of wildlife and had low numbers of native and protected species. The study also identified a similar pattern in urban park vegetation where native species were rarely found amongst the shrubs and the ground layers were less dense. This indicated that urban parks in Kuala Lumpur were artificially green with low numbers of native species which meant that they were less ecologically-friendly because native species were the core element of the ecological food chain in urban parks.

Finally, in the third step, a questionnaire survey was conducted at selected case study areas in Kuala Lumpur to explore values, knowledge, attitudes and behaviour relating to urban wildlife using Kellert's typology. Questionnaire surveys were conducted with 417 residents and stakeholders throughout Kuala Lumpur. The survey investigated the environmental attitudes of the people of Kuala Lumpur with regard to urban biodiversity and suggested the development of guidelines on how to improve urban open space and increase or improve the interaction between people and wildlife. This study found that participants held strong emotional attachment to wildlife. They held moralistic values on urban wildlife and vegetation. Most respondents also had strong emotional attachment in terms of ecological, naturalistic and scientific values

towards wildlife. Respondents tended not to express the utilitarian, dominionistic, negativistic, humanistic or aesthetic values. However, even though their attitude and values were positive, their knowledge of wildlife and behaviour towards it were low. They had a better understanding of basic wildlife characteristics: however, their responses were poor in wildlife identification and they had low behavioural attitude and interaction with wildlife. People could not identify the wildlife species found in their neighbourhood especially native and protected species. Most respondents connected emotionally with wildlife through the media and they had less direct interaction with wildlife and in having pets as companions, and less activity in supporting, engaging and participating in wildlife organisations and conservation activities.

These findings highlight the need for integrated approaches in urban biodiversity studies to improve urban biodiversity management in Kuala Lumpur with more appropriate, efficient and effective management. These approaches are applicable to any cities and towns in Malaysia since they share a similar context of demographic, social and political influences. As the perception of citizens and stakeholders in different cities in developing countries might differ, the findings from Kuala Lumpur cannot be generalised but the method developed in this research is transferable and will be useful for identifying stakeholders' and citizens' opinions. Other cities, such as those in Asia, may adopt the approach used in this study and use these findings from Kuala Lumpur as a reference for urban wildlife studies.

