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**JOHOR
INNOVATION
INVENTION
COMPETITION
AND
SYMPOSIUM
2023**



"Innovation Inspires a Society
to be Critical and Creative"

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Editors-in-Chief

**AHMAD KHUDZAIRI KHALID
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Preface

In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.

This e-book compiles the extended abstracts that submitted to Johor Innovation Invention Competition and Symposium 2023 (JIICaS2023), where JIICaS2023 is a virtual platform for all creative minds to share and present their invention and innovation. The extended abstracts are divided into two categories, which are Category A (Higher Educational Student/ Any Recognized Institutional Students in Malaysia) and Category B (Primary/ Secondary School Students / Special Education School Students in Johor). Each abstract gives a brief background on the innovation or project.

We hope that this e-book will help the readers to get to know the innovation done by the students from both categories and get some ideas to develop future innovation products.



ZONIFY: SMART ZONING FOR GUNUNG BELUMUT, JOHOR

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ABSTRACT

The Zonify project presents an innovative approach to managing nature-based recreation areas, specifically focusing on Gunung Belumut in Johor. By applying the Recreation Opportunity Spectrum (ROS) framework, the project identifies and categorizes three distinct recreational opportunity classes: rural, semi-primitive motorized and semi-primitive non-motorized. Each class is assessed based on three key attributes: physical setting, social setting and managerial setting. The physical setting analysis considers the attraction offered, the naturalness of the area and potential and risks to man-made resources through on-site observation. Social setting evaluation involves a structured questionnaire to examine visitor density, interactions, experiences and social behaviour. The managerial setting is determined through focus group interviews with stakeholders to gather insights into naturalness, provided facilities, maintenance programs, and the management of recreational activities. Based on the findings from the Zonify project, three zones are recommended for Gunung Belumut: the leisure station, the escape lane and the wonderful journey. These zones ensure the formulation of appropriate recreational activities that align with the existing condition of the area, minimizing potential damage. By implementing this zoning system, nature-based recreational activities can be effectively managed, providing visitors with diverse and enjoyable experiences while preserving the ecological integrity of Gunung Belumut. The Zonify project's integration of ROS and comprehensive assessment of physical, social and managerial settings allow for a sustainable and balanced approach to recreational planning and management in natural areas. This project serves as a valuable model for other nature-based recreation areas, offering a framework that supports responsible and sustainable tourism development.

Keywords: zoning, recreation opportunity spectrum (ROS), nature-based recreation

1.0 INTRODUCTION

Recreation opportunity setting can be defined as the combination of physical, social and managerial settings that ultimately give certain values to a place. The opportunities should include any benefits obtained from the natural setting such as the scenery and vegetation, recreational use and the conditions created by the management of the place such as roads and regulations (Clark et. al., 1979). The Recreation Opportunity Spectrum (ROS) framework guides in giving characteristics based on the recreational opportunities that the area serves (Zhang et. al., 2023).

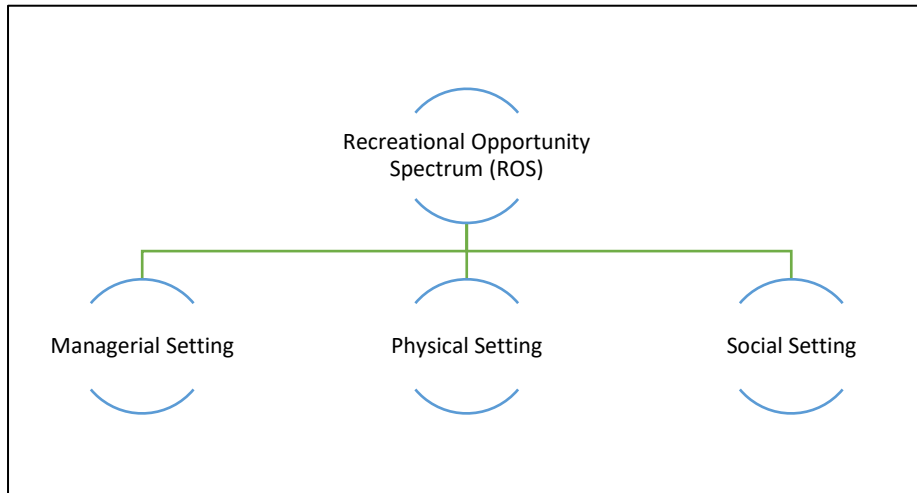


Figure 1: The Recreational Opportunity Spectrum (ROS) framework

The ROS framework started with the assessment of three settings namely the managerial setting, physical setting and social setting. This is an important step in gathering secondary data collection about the place and allows researchers to get to know in-depth the characteristics of the area before deciding the recreational spectrum. Managerial settings involve the collection of secondary data on how the area is currently managed including the booking system, visitors' flow and movement and the existence of nature infrastructure available in the area (Zhang et. al., 2023). The physical setting includes the accessibility of the area, the remoteness of the area and the identification of the biophysical setting. Lastly, the social setting covers the types of recreational activities offered by the area (Zhang et. al., 2023).

Taman Eko Rimba Gunung Belumut, Johor is a recreational forest located approximately 137 kilometres from Johor Bahru town and is a well-known place among the local community because of its uniqueness of flora and fauna and offers types of recreational activities such as water-based activities, camping, hiking and even for education and research purposes. The focal point of the area is the waterfall areas that attract local and non-local tourists. Therefore, it is very important to carefully manage the area in order to serve its purpose in the tourism industry as well as continue contributing benefits to the local community.

2.0 OBJECTIVE

The Zonify project aimed to develop an effective management plan exclusively for Taman Eko Rimba Gunung Belumut, Johor based upon the ROS framework which involve the identification of three settings; managerial, social and physical. Then, recreational opportunities were identified based on the landscape spectrum to be utilized for the creation of zones. Additionally, this project recommend specific theme for each zone and types of activities that are suitable to be offered according to the recreational characteristics identified.

3.0 METHODOLOGY

The Recreation Opportunity Spectrum (ROS) is a system for classifying and managing recreation opportunities based on the following criteria: physical setting, social setting and managerial setting. The combination of the three criteria resulted in six different ROS classes which later produced a map zoning for the area. Therefore, primary and secondary data collection was conducted for this project. Primary data collection involves interview sessions

with the related stakeholder groups such as the local authority, Johor Forestry Department and the local community to obtain the data on the managerial settings. Other than that, on-site observation was conducted to identify the physical setting of the area and social setting data obtained from the structured questionnaires. A total of 385 respondents were involved in the data collection process comprised of the visitors of Taman Eko Rimba Gunung Belumut, Johor.

4.0 ZONING FOR GUNUNG BERLUMUT, JOHOR

There are three zones identified in this project based on the recreational opportunity spectrum which are rural, semi-primitive motorized and semi-primitive non-motorized. A rural zone covers the entrance of the area that an administration office, parking lots, open space with small playground can be found in this area. This zone was named as “Leisure Station” because of its opportunities to offer types of enjoyment activities in this area. As this zone provides man-made facilities such as prayer room, stalls and other amenities available, it is a suitable option for any gathering events and social interaction activities.

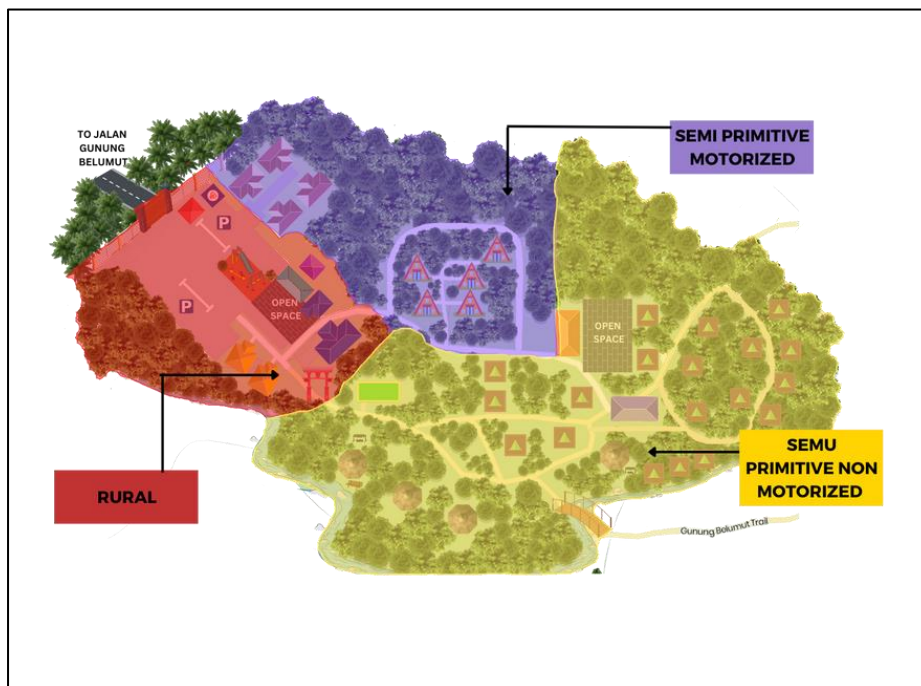


Figure 1: Suggested zoning for Gunung Belumut, Johor using the ROS

The second zone is the semi-primitive motorized area named as the “Escape Lane” zone and its surrounding characteristics portray beautiful natural characteristics that are conducive to conducting fun-based recreational activities. This area is suitable for families with kids and education and interpretation trail activities could be conducted in this area as it is still accessible. The last zone is a semi-primitive non-motorized area given the name “Wonderful Journey” and due to its abundance in naturalness, this area is suitable for hiking activity and survival activity, especially for team-building programs.

5.0 CONCLUSION

This project presents a valuable and effective approach in managing nature-based recreation areas, exemplified by its application to Taman Eko Rimba Gunung Belumut in Johor. This project serves as a model for nature-based recreation areas, promoting sustainable tourism development and the preservation of natural resources. Zonify offers a practical solution that

balances visitor experience with environmental conservation, ensuring the long-term viability and enjoyment of Taman Eko Rimba Gunung Belumut and similar natural destinations.

6.0 REFERENCES

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