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VISITORS' PERCEPTION OF CROWDING IN MOUNT MAKILING FOREST RESERVE ASEAN HERITAGE PARK

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Abstract [use this style font, Calibri 13 point, for 1st level headings]

Ecotourism has been gaining popularity today due to people being more environmentally aware and along with the growth of social media, people easily find more destinations to explore. Along with its growth, the number of people starts to crowd one specific destination and that's when a particular visitor experiences the feeling of "overcrowding". Online survey was done where each respondent was asked to evaluate the acceptability of several use levels as shown in four computer edited photographs of the Mariang Makiling Trail (MMT). Respondents between 20 and 60 years old participated in the study. Majority have attained college level education, and male were the more frequent visitors than women. The respondents come mostly in groups and sightseeing, or nature experience was the main motivation for visiting the site. Most of the respondents said they saw about 5 to 15 other people during their visit. In terms of preferred number of visitors while engaging in recreational activities, most of them said it is acceptable for them to have at least 5-15 other people. Furthermore, they also expressed 15 other people as the maximum number of visitors they feel is acceptable for them and a higher number of visitors will make them stop visiting the area. In terms of attitude towards crowding and satisfaction, majority of the respondents enjoyed their trip in Mt. Makiling, while at the same time; most of them only feel crowded when the maximum number of fellow users based on the photographs. Other findings based on the results of this study can provide insights to decision makers to manage more effectively the arrival and flow of visitors to avoid the feeling of overcrowding for each visitor and ensure the quality of their experiences during their visit.

Keywords: Sustainable forest management, Adaptive and integrated management, Recreation overcrowding

Introduction, scope and main objectives

Mount Makiling Forest Reserve (MMFR) by virtue of Republic Acts 3523 (1963) and 6967 (1989) was created to support professional instruction and research related to forestry and plant sciences and to serve the educational, recreational and ecotourism needs of the general public. MMFR was declared as an ASEAN Heritage Park in 2013. Mount Makiling Forest Reserve ASEAN Heritage Park (MMFR AHP) is one of the Philippines' 18 centers of plant diversity, designated as an extremely high biodiversity conservation priority area, and one of the country's 31 key ecotourism sites.

MMFR AHP as an ecotourism destination continues to serve as a recreational area for the public being the nearest of its kind to Metro Manila. Tourism and recreational activities inside the MMFR AHP include hiking, trekking, camping, mountain biking, photography, painting, and wildlife watching. MMFR AHP has been maintaining the Maria Makiling Trail (MMT), Sipit Trail, and the Makiling Botanic Gardens (MBG) providing educational services, amenities, and activities to visitors. On the average, about 13,000 people visit the MMFR AHP annually. Among the most frequented areas inside the MMFR AHP include the Makiling Botanic Gardens (MBG), Flatrocks, Mudsprings, Makiling Rainforest Park (MRP) and the summit (Peak 2). Each has its own

unique natural features that attract visitors. In recent years, MMFR has enjoyed a continuous increase in the number of visitors and the managers are anticipating the impacts of more visitors in the area at a given time.

Regardless of region or country, the public is starting to see protected areas as conducive venues where they can engage in recreational activities. The inherent pristine quality of the environment in protected areas make it among the most popular choices not only for resource managers but also for recreationists for recreational opportunity development (Klanjskiček et al. 2018). Over the years, this trend has become more and more popular, and the use of protected areas as recreational venues is slowly being mainstreamed. In some countries, the manifestation of this increase in use has become very evident that studies are now being conducted that focus on understanding carrying capacity and crowding. Such studies are aimed at understanding recreationist behavior so that visitor management programs become more responsive to crowding before it becomes problematic.

Crowding, as a phenomenon, is relative and highly dependent on the way people view conditions and situations they are experiencing. There are stark differences on how individuals view crowds around them. In North America, crowding is an issue of particular importance in recreation because majority of recreationists in the continent give premium to solitude as an important part of their recreational experience. Furthermore, in tourism, one of the most popular forms of recreational activity, managing crowds can be involved in order to ensure quality experiences that lead to tourist satisfaction (Jin and Pearce 2011). Conversely, in other cultures, crowds are seen as opportunities for socialization. Many Asians will perceive crowds, at certain levels, as a positive element that adds to their recreational experiences. As long as the resources are not negatively impacted, crowds are tolerated and does not impact satisfaction significantly (Ruiz et al. 2021).

Perceived crowding studies provide key inputs in the management of resources especially in areas of very high use. Findings from studies on crowding can guide decision makers in the way zoning of areas are done. Furthermore, insights on crowding studies also contribute towards ensuring sustainability in areas used for recreation while preserving quality experiences and satisfaction (Jin et al. 2016). Crowding studies are also used to detecting and understanding disturbance caused by people. Thus, this study is an initial exploration into the perspectives of MMFR visitors to crowding. Specifically, the study aims to: 1) assess the perception of MMFR recreational users on crowding; 2) examine the tolerance of MMFR recreational users to crowds; and 3) provide insights to manage crowding in MMFR recreational areas.

Methodology/approach

Data Gathering and Analysis

The perceived crowding study for the Mount Makiling Forest Reserve (MMFR) recreational areas involved asking users through an online survey distributed through email and Facebook, the most popular social media platform in the Philippines. The survey questionnaire was developed through expert consultation and literature review. The questionnaire was finalized through a pre-test that involved converting it into an online version through Google forms. The study team distributed the questionnaire using two avenues: 1) through email using the database of email addresses that is being collected from visitors to the forest reserve; and 2) through the establishment of a Facebook page devoted solely for data collection for the study.

The questionnaire was posted on Facebook in March 2021 when it started accepting responses and the survey closed on September 2021 pegging the survey duration to seven months. Simultaneously, the questionnaire was also sent out via email to previous visitors to MMFR using the email addresses they indicated in the registration information they gave when they visited. A member of the study team was designated to coordinate, follow up and monitor the respondents to the online survey.

After the period of the online survey has ended, data was organized and prepared for analysis. During the process, questionnaires that are incompletely filled out were removed. Descriptive statistics was employed to obtain the results for the study.

Survey on Crowding of Visitors in Mt. Makiling Forest Reserve (For Hikers)

Good Day!

This questionnaire is part of a study being conducted by the Makiling Center for Mountain Ecosystems, a unit in the College of Forestry and Natural Resources, University of the Philippines Los Banos.

This is a study funded by the Department of Science and Technology and is aimed to gain feedback from visitors about their crowding perceptions in Mount Makiling and its facilities as well as to determine the ecotourism carrying capacity of the same.

Please answer the items as objectively and honestly as you can. Rest assured that your identity and your responses shall be kept confidential and the data obtained from this survey shall be used solely for research purposes. It takes about 15 minutes to finish the questionnaire.

Thank you very much for your participation!

rtandrada@up.edu.ph [Switch account](#)

* Required

Email *

Your email

[Next](#) [Clear form](#)

<https://www.facebook.com/Mount-Makiling-Forest-Reserve-Carrying-Capacity-Study-108457497978085/>

Fig. 1: Screenshot of the online questionnaire used for the study in Google Form format

Results

Demographics of study participants

As seen in Table 1, there is a total of 163 respondents to the online survey within the seven-month period. This sample size, that was obtained through purposive sampling, is relatively small compared to the average number of visitors that MMFR gets annually which is about 13,000. The low response rate for the survey can be attributed to a few factors: the relatively short survey period, connection limitations, and the general disinterest of people in answering surveys.

Furthermore, demographics show that there are more male respondents (59.5 percent) than female respondents (40.5 percent). The sample is also seen to be relatively dominated by young adults where almost half (46.6 percent) of respondents belonging to the 26- to 35-year-old age group and over 90 percent is aged 45 years and younger. The respondents are well educated with majority (77.9 percent) having at least a college degree. Table 1 also shows that almost all (91.4 percent) of MMFR visitors are day users, who engage in hiking (86.5 percent).

Table 1: Summary table of respondents' demographics

Variable	Label	n = 163	Percentage
Sex	Female	66	40.5
	Male	97	59.5
Age	20-26	37	22.7

	26-35	76	46.6
	36-45	38	23.3
	46-60	12	7.4
Education	Secondary and vocational	15	9.2
	Tertiary	127	77.9
	Post-graduate	21	12.9
Residence	Within Laguna	111	68.1
	Outside Laguna	52	31.9
Duration of visit	Day use	149	91.4
	Overnight	14	8.6
Recreational activity engaged in	Hiking	141	86.5
	Biking	7	9.2
	Camping	15	4.3

Crowding Perception

Respondents of the study were asked about their visit to MMFR in terms of the following: 1) relative to the number of people that they encountered during their visit; 2) preferred number of people recreating with them; 3) Number of people they can tolerate; and 4) Maximum number of people that will make them stop visiting MMFR.

Table 2: Distribution of responses on crowding questions

Question	Number of people			
	1 to 4	5 to 15	16 to 25	26 to 40
Number of visitors encountered during visit	40%	37%	16%	6.1%
Preferred number of other visitors in the area	39%	51%	8.6%	1.2%
Maximum number of other visitors that is acceptable	14%	59%	24%	3.1%
Number of visitors that will make you stop visiting	4.9%	0.6%	20%	74%

Table 2 summarizes the percentage of respondents who indicate the range in the number of people that they prefer to be with them while engaging in recreational activities inside MMFR. Presently, visitors do not encounter many people with them during their visit where 77 percent said that they only encountered 15 other visitors at most during their visit. In terms of the preferred number of other visitors that enjoy the area with them, 89 percent said that they prefer at most 15 other visitors. This trend is mirrored in the maximum number of other visitors that are acceptable to them, where 73 percent said 15 other visitors at most is acceptable. Lastly, 74 percent of respondents expressed that if they encounter 26 other visitors during their visit, they will stop visiting MMFR.

Table 3: Summary table of responses towards crowding statements

Statement	SD	D	N	A	SA
Crowds during my visit are unacceptable	14.7%	21.5%	42.3%	11.7%	9.8%
Too many people during my visit positively affects my appreciation of Mt. Makiling	11.7%	17.2%	29.4%	23.3%	18.4%
Many fellow visitors add enjoyment to my experience	4.9%	6.6%	25.9%	38.7%	23.9%
I will stop visiting Mt. Makiling if there are too many visitors at the same time	8.0%	21.5%	24.5%	25.1%	20.9%
I support the idea of regulating the number of visitors that enter Mt. Makiling at a given time	5.5%	1.2%	14.1%	25.2%	54.0%

SD-strongly disagree; D-disagree; N-neutral; A-agree; SA-strongly agree

The statements listed in Table 3 are related to crowding and are aimed to elicit the respondents' perception of crowding in MMFR. As seen from the table, are either neutral or slightly favoring crowds because almost 60 percent of respondents either disagree or neutral on the unacceptability of crowds. This is supported by 41 percent of respondents agreeing on crowds positively affecting their appreciation of Mt. Makiling. Furthermore, 62.6 percent of the respondents agree that other visitors add to the enjoyment they experience during their visit. Despite the expression of a positive perception for crowds, 79.2 percent of the respondents will still support regulating the number of visitors in Mt Makiling at a given time and 46 percent will stop visiting Mt Makiling if there are too many visitors in the area.

Discussion and Conclusions

Based on the results observed from the study, the findings indicate that visitors to MMFR tend to be more sociable and that this aspect adds to the positive experiences that they have in the area. In addition to nature appreciation and physical activity, it was observed that a certain level of socialization is part of the visitors' motivation to engage in recreational activities in MMFR. Presently, the management of MMFR has been successful at monitoring and profiling the visitors that enjoy the areas of MMFR for recreation. The location of the various points of interest works as a factor that disperses visitors over a large area inside MMFR. And, as long as there is a mechanism that subtly regulates the number of visitors inside MMFR and the thresholds are kept in check, the visitors will continue to enjoy recreating in these areas.

Knowing and monitoring the profile of visitors in MMFR is key to a more responsive program of visitor management. The young professionals who are relatively well-educated tend to be more open to supporting and following guidelines that are set by management that influence recreational activity in MMFR. Once started, visitor surveys that investigate motivation and satisfaction should be done at regular intervals to keep track of any changes in the perception and preferences of MMFR visitors over time. Through these surveys, the management can anticipate and adapt to the changing characteristics of MMFR visitors.

In the Philippines, where many of the protected areas are becoming enticing venues for recreation, it is important that studies that explore crowding as a phenomenon is critical in ensuring that the impacts of overuse and visitation is prevented. Exploratory studies such as this provide baseline information on the characteristics of recreationists that use protected areas for their health and well-being. Important information is also gleaned from studies like this that can guide the management of protected and other conservation areas to ensure a balanced scheme of utilization and protection that benefits the resource users.

Furthermore, the study encountered challenges in data gathering that was brought about by unexpected events such as the pandemic and it is important that methodologies and techniques can be adapted to the

changing situation. Despite the low response rate for the online survey, the study was still able to reach an acceptable number of respondents for analysis to be meaningful and relevant.

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