

Bako National Park's Circumstances Amid the COVID-19 Pandemic: Perspectives on Biodiversity and Community Well-being

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ABSTRACT

Bako National Park (BNP) is the oldest and smallest national park in Sarawak, Malaysia and its richness in biodiversity of flora and fauna here is indeed a major attraction for international and local tourists to watch proboscis monkeys. However, this COVID-19 pandemic instigates challenges to tourism development in the BNP because the number of tourists is very low compared to before pandemic season. This also has a huge impact on the local community and wildlife in this area. These new norms bring challenges and benefits to human and nature life. The following photos were taken during our five-day visit to BNP from 24th to 28th August 2020. The purpose of our short visit was to observe the circumstances of BNP in the midst of pandemic by emphasizing the aspects of biodiversity and the well-being of local communities. Thus, the photographs taken describe the situation in this area that elucidate the challenges and benefits to wildlife and community livelihood. Based on this study, it is clear that humans and biodiversity have complex and interdependent relationships with each other that need to be emphasized by relevant stakeholders towards social sustainable development.

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Contribution/Originality: The paper's primary contribution is finding that the COVID-19 pandemic has significantly impacted tourism in Bako National Park, affecting both local communities and wildlife, highlighting the complex interdependence between humans and biodiversity, crucial for promoting social sustainable development in the region.

1. Introduction

Bako National Park (BNP), Kuching, Sarawak, Malaysia (1.7167°N, 110.4667°E) is a major tourist attraction from within and outside the country and it managed directly by Sarawak Forestry Corporation. The location is easily accessible by road and water transportation whereby the tourists need to travel to Bako Jetty Terminal first before heading to BNP by boat provided at the terminal. The data shows that from January to September 2020, there is a total of 11,160 tourists in BNP, which is recorded as the most visited national park in Sarawak ([Sarawak Forestry Corporation, 2020](#)). The number of tourists has shown a drastic decline since the pandemic due to Movement Control Order restrictions by Malaysian government. The country's main entrance was closed since 18th March 2020 to curb the spread of virus.

The COVID-19 pandemic is impacting all parts of human society which instigates various challenges to the local tourism industry and community livelihood in many protected areas and its surrounding areas ([Ibrahim et al., 2023](#)). On the other hand, this pandemic also has a positive impact on environment. For instance, the restriction movement control order in Malaysia caused the decline in air pollutants concentration whereby it was recorded highest reduction of nitrogen dioxide concentration compared to other air pollutants ([Othman & Latif, 2021](#)). The situation in BNP is something that needs to be elucidated in terms of challenges and benefits gained during this pandemic. Thus, this paper aims to elucidate the circumstances of BNP in the midst of the COVID-19 pandemic in terms of biodiversity conservation and community well-being.

2. Research Method

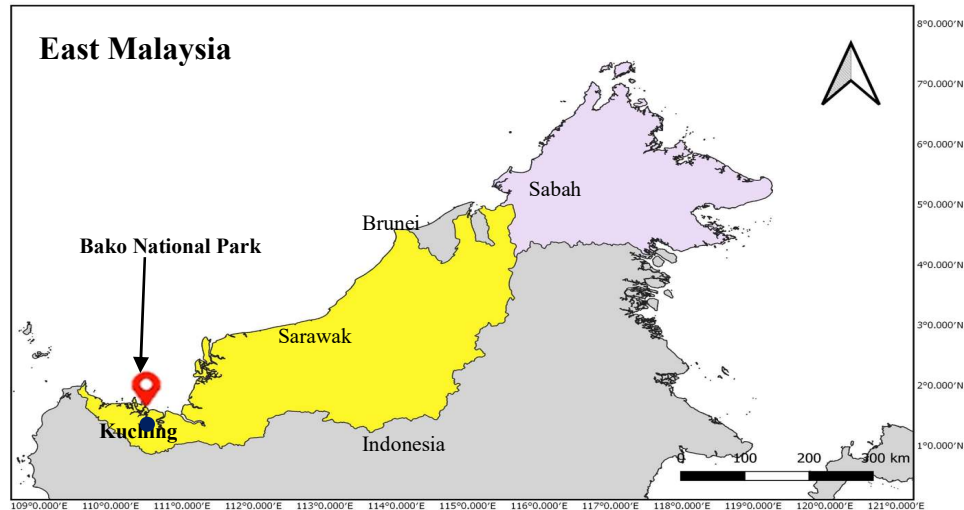
2.1. Research Design

This study used a qualitative approach which is a participant observation and photographic approach. Observation is a method of collecting data by closely examining behaviour, events, or physical attributes in their real environment ([Centers for Disease Control and Prevention, 2018](#)). The purpose of designing research that employs participant observation is to generate a comprehensive understanding of the events being studied that is as objective and accurate as feasible considering the method's constraints ([DeWalt & DeWalt, 2002](#)). Participant observation can be employed as a method to enhance the validity of a study, since it enables the researcher to gain a more comprehensive comprehension of the environment and phenomenon being investigated. In this study, observations were made by the researcher on aspects of wildlife, national park and livelihood of the local community of Kampung Bako (the main village next to BNP). This method involves interaction by the researcher with several individuals, namely park rangers, fishing community, and boat operators.

2.2. Study area

The study was conducted in the oldest and smallest Sarawak's national park, Bako National Park (BNP), Kuching (1.7167° N, 110.4667° E) from 24th August till 28th August 2020. [Figure 1](#) shows BNP which is located not far from Kuching city, which is 37 kilometers east of the state capital, Kuching. Our visit within 5 days and 4 nights at the BNP has shown some interesting observations to describe. The pictures taken are limited to the period and conditions during the short trip.

Figure 1: Geographical site of Bako National Park, Sarawak, Malaysian Borneo.



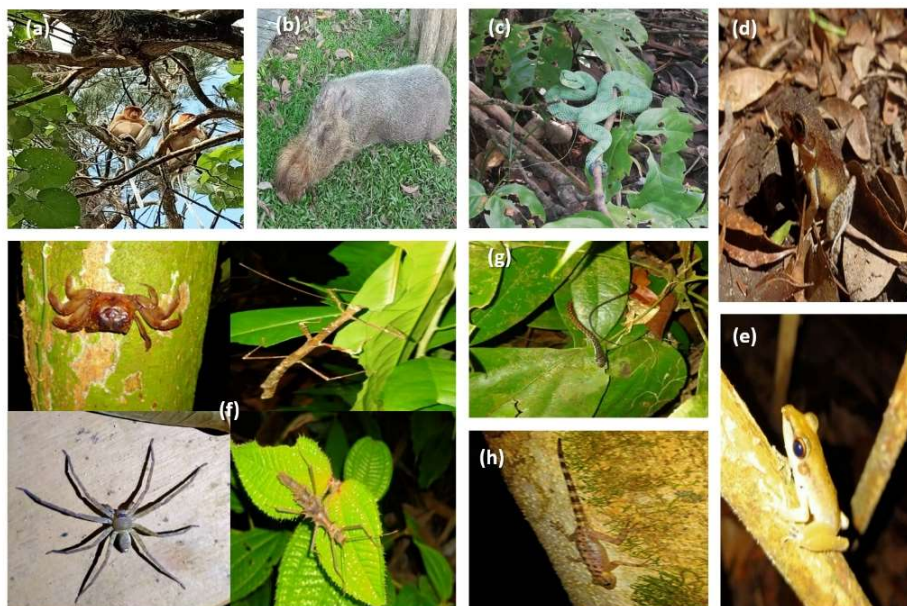
Source: Ibrahim et al. (2021)

3. Results and Discussion

3.1. Wild faunas enjoy freedom

Wildlife can be approached closer during our visit at BNP (Figure 2). It might happen because they have better privacy than before the pandemic.

Figure 2: Several species of fauna were seen during the short trip to BNP in the midst of this COVID-19 pandemic



These faunas feel comfortable without any human disturbance whereby they can mate and forage in the national park freely. The mitigation of human stresses in highly visited parks is expected to have positive effects on vulnerable species. Currently, protected areas seem to be secure, and in numerous locations, biodiversity is experiencing positive

effects due to decreased human activities. Nevertheless, this assertion may not hold true universally, particularly in cases where enforcement has diminished while threats have remained unchanged (Corlett et al., 2020). Research has seen disruptions, however, the long-term ramifications of this can only be determined with the passage of time. According to tourists and park rangers, the probability of seeing this endemic animal, the proboscis monkey (*Nasalis larvatus*) is quite low during the previous normal day. This is because the animal does not like noise. However, we are said to be lucky because we were able to see this animal up close, but still we have to keep a distance of five meters with the animal as outlined by the national park so that there is no human-wildlife conflict.

(a), (b), (c), and (d) are the Bornean endemic species found in BNP during the short trip. These species cannot be found in the West Malaysia (Peninsular Malaysia). (a) A bunch of proboscis monkeys (*N. larvatus*) can be easily seen at close range in the Bako National Park Headquarters building during this covid-19 pandemic season. (b) Bornean bearded pig (*Sus barbatus*) is not bothered by the pandemic situation. These animals are very tame and easily approached by tourists since pre-pandemic season. (c) Bornean keeled pit viper (*Tropidolaemus subannulatus*) is passive during the day and is easily found close to park accommodation. (d) Brown marsh frog (*Pulchrana baramica*) and (e) white-lipped frog (*Hylarana raniceps*) are species of frogs found during night trekking in BNP. (f) Species of arachnids and insects from Family Phasmatidae, Sparassidae, and Thomisidae found during guided night trekking with park rangers. (g) Paradise tree snake (*Chrysopelea paradisi*) and (h) Gecko was found during guided night trekking activity.

As for night trekking activity, there is no encouraging response because tourists who come here choose not to spend the night at BNP, while daytrip is preferable for them. This activity, which was common before the pandemic, was joined by foreign tourists such as from the US, Australia, United Kingdom, Germany and other countries. After 8 months since the global pandemic in January 2020, we were the first group of tourists who participate in night trekking activity. However, we did not have the opportunity to watch other vulnerable species such as western tarser (*Tarsius bancanus*), asian giant terrapin (*Heosemys grandis*) and endemic species such as Bornean blue flycatcher (*Cyornis superbus*) reported in previous research studies by Zahidin et al. (2016). It should be noted that these animals live freely in their original habitat (as part of in-situ conservation) not as in captive (ex-situ conservation) such as zoo where indeed visitors can see the animals at any time.

3.2. Local community livelihood face challenges

Figure 3 shows the circumstances of BNP in the midst of COVID-19 pandemic. The pandemic has significantly affected the economic well-being of the community. The COVID-19 epidemic has resulted in a notable decline in tourist numbers, with BNP currently catering exclusively to domestic visitors. As the COVID-19 pandemic spread worldwide, countries implemented different levels of lockdown measures, which significantly limited local movement and effectively banned international travel (Zambrano-monserrate et al., 2020). Thus, local community who were working in tourism sector (e.g., boatmen, boat operator, accommodation operator) have difficulty in earning a monthly income due to the very limited number of tourists in such area. As per the new legislation, tourists are required to pay a higher amount for boat fee to BNP, in accordance with the new standard. Several tourists expressed dissatisfaction with the

fee, which ranged from MYR120 to MYR200 (USD29.07 to USD48.45) per boat. In the past, tourists were able to secure a more affordable fare by exercising patience until the passenger capacity reached the maximum limit of 5 to 6 individuals per boat. The cost per individual was approximately MYR30 (USD7.27). Presently, they are obligated to bear the cost of a private boat as a result of time constraints and the presence of tourists. As boat operators, they were still negotiating with tourists for the boat fare to achieve a win-win situation for both parties. The online payment for booking purpose also acceptable which is more convenience method since this pandemic.

Figure 3: Circumstances of Bako National Park in the midst of COVID-19 pandemic



(a) Park ranger who guides us to watch the nocturnal wildlife and its hotspot. (b) Boatman carrying tourists from Bako Jetty Terminal to BNP Headquarters. (c) Boat fares from Bako Jetty Terminal to BNP Headquarters were negotiated with two boat operators to get relevant rates for us. (d) Receptionist of boat service counter at Bako Jetty Terminal. (e) Head of fishermen association in Kampung Bako (right) and park security (left). (f) Some skilled fishermen were collecting seafoods (e.g., cockles, and fishes) around Kampung Bako using trawl in the evening. (g) Park rangers who work at BNP Headquarters are used to welcoming foreign and local tourists. They were still working during this pandemic and their work scope is more focused on the facilities than tourists (e.g., maintenance of damaged walking trails). (h) Two tourists who had just arrived at BNP Headquarters by boat and chose to spend the night at the park accommodation for a few days for research purpose.

The local community's decision to transition from tour operators to fisherman serves as an illustrative case of the imperative to enhance community catastrophe resilience amidst the ongoing pandemic. The aforementioned idea can be characterised as the ability of a community to effectively adjust to changes, manage disruptions, and promptly and constructively address risks or emergencies (Coetzee et al., 2016). The fishing community in Malaysia has received several initiatives from both the government and private sector. These initiatives encompass the enhancement of food storage and distribution infrastructure, provision of alternative livelihood aid, establishment of fisheries associations, and the government's procurement of their catch (Ferrer et al., 2021).

According to the leader of the fishermen association in Kampung Bako, around 70% of the local population consists of fisherman, with the remaining 30% including individuals from other sectors such as government employees and private sector workers. Additionally, he conveyed that prior to the onset of the pandemic, the primary entrance of the BNP was consistently occupied by boat operators, park guides, and tourists. This also explains that tourism job as park guides, and boat operators have also highly affected in the midst of pandemic situation.

Fishermen also had problems in marketing their seafood at the Bako Wet Market during the pandemic because no visitors went there to buy it. If in the past, they had many customers who did not stop buying the catch, but now, they can only afford to sell the catch on a small scale that is to sell it to the villagers only.

3.3. Park rangers await the arrival of tourists

Park rangers have long not received many tourist visits at one time. They noted that tourists came in a small group of three to five individual in a day during this pandemic season. Park guest accommodations is also not accepting any bookings at the moment although it is still available at this time. This might be due to tourists who are not ready to travel and choose to stay at home to avoid the risk of pandemic infection. During the visit, tourism is almost paralysed because most Malaysians have not yet received a fully vaccination. However, as of 9th September 2021, about 71.3% of the 16,680,780 adults Malaysian have been fully vaccinated with Pfizer, AstraZeneca, and Sinovac vaccine brand ([COVID-19 Immunisation Task Force, 2021](#)). It is a good sign for the country to reopen the nation tourism sector like before in stages. Thus, the revenue from payments made by tourists can be increased through park entrance fee, park accommodation, and paid activities (e.g., night trekking).

3.4. Availability of local tourists only

All the tourists who came to BNP during the period are Malaysians who were mostly from Sarawak and Peninsular Malaysia. It is noted that there were several contractors or workers who spend the night at park accommodation for the purpose of trails maintenance and existing accommodation buildings. The tourism industry could still be continued at the national level at that time with strict compliance with standard operating procedures (SOPs) which issued by the Malaysian National Security Council (MKN). Instructions regarding SOPs vary according to the time and circumstances of this pandemic. Up to this date, Malaysia has yet to open up the tourism sector in general. However, recently the government through the Ministry of Tourism, Arts and Culture has announced that the reopening of the country's first tourist destination, Langkawi UNESCO Global Geopark (LUGGp) which begins on 16th September 2021 through the Travel Bubble initiative ([Ariffin, 2021](#)). Through the initiative, only Malaysians who have been fully vaccinated are allowed to visit the LUGGp. This indicates that Malaysia will soon reopen the tourism sector as a whole if the National Recovery Plan achieves certain targets towards reducing the number of cases of infection as well as the population that has been fully vaccinated.

4. Conclusion

This pandemic has arisen benefits and challenges to the tourism industry that have impacted biodiversity conservation and community well-being in BNP. The pandemic resulted in the occurrence of 'anthropause', which explicitly denoted a significant

worldwide deceleration of contemporary human endeavours, particularly travel (Rutz et al., 2020). On the positive side, wild faunas can live without stress from anthropogenic disturbances during this pandemic. It can enhance their population viability because they have better privacy than circumstances before the pandemic. In addition, the BNP management can also upgrade the infrastructure at moment where there is almost absence of tourists in the area. While from the negative perspectives, this pandemic gave huge stressed to the local livelihood with limited monthly income due to the drastically reduced number of tourists during this pandemic and marketing problems. With the gradual reopening of some public sectors, including tourism, the local economy of the BNP community expected to recover like previous despite only accepting the presence of domestic tourists. Biodiversity conservation programmes in this area can also be enhanced by the presence of certain fees in the park by tourists. Based on this study, it is clear that humans and biodiversity have complex and interdependent relationships with each other that need to emphasized by relevant stakeholders towards social sustainable development.

Ethics Approval and Consent to Participate

The study was approved by the Universiti Putra Malaysia Ethics Committee for Research involving Human Subjects (JKEUPM) (reference number: JKEUPM-2020-403). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Before being approved by JKEUPM, this study has obtained a research permit from the Sarawak Forestry Corporation (reference number: SFC.PL and RS/2020-006 and Park Permit No. WL23/2020) for a one-year period from 2020 to 2021. It has to comply to the First Schedule of the National Parks and Nature Reserves Regulations 1999 (Regulation 5). Before participants agreed to participate in this study, they were given an information sheet that explained the nature of the research in terms of methodology, benefits of the study, possible side effects and complications, and confidentiality. Informed consent for participation and publication was obtained from all participants in this study. All participants gave their informed written consent.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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