

## EDITORIAL

# Better Management Practices (BMP) towards a Human-Wildlife Co-existence

Dolly Priatna<sup>1\*</sup>, Chittaranjan Baruah<sup>2</sup>, D. K. Sharma<sup>3</sup>

<sup>1</sup>Graduate School of Environmental Management, Pakuan University, Jl. Pakuan PO Box 452, Bogor - 16143, Indonesia

<sup>2</sup>Postgraduate Department of Zoology, Darrang College (Gauhati University), Tezpur - 784001, India

<sup>3</sup>Department of Zoology, University of Science & Technology, Meghalaya - 793101, India

Over the last few decades, increasing human population, infrastructure development, and land-based economic development in many tropical countries in Asia have significantly reduced the area and quality of forests. Lim *et al.* (2017) and Chen *et al.* (2023) reported that forest conversion into plantations and infrastructure development are the main triggers of forest degradation and deforestation in Southeast Asia. This high rate of forest degradation and deforestation has caused a decline in wildlife populations and increased human-wildlife conflict (Borah *et al.*, 2020; Horgan & Kudavidanage, 2021). The intensity of human-wildlife conflict, which continues to increase from time to time, also results in economic losses for local communities living around forest areas, such as causing damage to agricultural crops, loss of livestock, crop failure, damage to house buildings, and can even cause fatalities of both in humans and wildlife (Subedi *et al.*, 2020; Sulistyono *et al.*, 2022). More specifically, negative interactions involving endangered protected wildlife, such as tigers, occur more often in forest areas adjacent to villages with low densities of prey (Lubis *et al.*, 2020). Interactions between humans and wildlife that cause losses will foster negative perceptions in the community of the presence of wildlife around their settlements, such as wildlife being considered as pests or enemies, which will ultimately reduce community support for wildlife conservation efforts. Looking at this phenomenon, there is a need for innovative efforts that can balance the interests of regional economic development, with social and environmental interests, especially the conservation of endangered protected wildlife.

Better Management Practices (BMP) are a practical guideline on how to improve management practices of a land-based business area in the context of preserving protected endangered wildlife (Sunarto *et al.*, 2008), as a vehicle for achieving a responsible and sustainable product. BMP for wildlife conservation have been widely studied, developed, as well as implemented in the oil palm sector for two decades ago in several Southeast Asian countries, such as Indonesia (Bateman *et al.*, 2010), India (Borah *et al.*, 2020), Malaysia (Ghani, 2020; Othman *et al.*, 2022), and in the Philippines (Tanalgo *et al.*, 2021). In fact, Chong & Norwana (2005) with the support of WWF-Malaysia have created a BMP document for mitigating and managing human-elephant conflicts in and around oil palm plantations in Indonesia and Malaysia. Likewise, its application in the industrial plantation forest sectors (Sunarto *et al.*, 2008; Wong *et al.*, 2022) and mining (OCSP, 2009), is starting to be encouraged in line with current market demands for products that have the label "green and sustainable".

Sunarto *et al.* (2008) stated that several BMP

components that can be developed to support the conservation of protected endangered wildlife in all land-based industrial sectors, include identifying and managing HCV (High Conservation Value) areas, mitigating human-wildlife conflicts, restoration and habitat protection, implementing land clearing practices without burning, integrated pest control, as well as minimizing and utilizing waste. On oil palm plantations in Malaysia, which are managed by the largest groups of certified sustainable palm oil producers in the world, they use various methods to implement BMP to mitigate human-elephant conflict, including electric fencing, cropping fences (crop-guarding), patrolling, elephant-proof trenching, improved fencing design, translocation, culling, elephant drive, conservation research and conservation awareness (Ghani, 2020). Furthermore, the result of study stated that the potential for coexistence with elephants could occur in plantations with oil palm trees over six years old, but in some other plantations human-elephant conflicts that result in plantation damage occur in areas where old oil palm trees grow. Meanwhile, BMP for mitigating human-elephant conflict implemented in Indonesia generally uses the MP2CE (monitoring, preventing, planting, controlling, and education) method, where this BMP is used as a tool used by stakeholders, especially land-based companies and local communities, to encourage efforts to protect and manage elephants in an integrated and sustainable manner (Sukmantoro & Syahrir, 2017).

As an example, a group of the world's largest pulp and paper companies operating in Indonesia, for the last 10 years they have been implementing various efforts and approaches to prevent and minimize human-wildlife conflict, including by managing protected areas as well as HCV and HCS (High Carbon Stock) areas and regular snare-trap removal, maintaining the integrity of natural forests through preventing illegal logging and encroachment, ensuring the availability of food sources including prey for carnivores, periodic monitoring wildlife presence, carrying out continuous awareness and education programmes, establishing and operating wildlife conflict mitigation team, as well as implementing community empowerment programmes to prevent human-wildlife conflict. All of these activities coordinated with relevant government agencies and with assistance from wildlife conservation fora and NGOs in encouraging cooperation between parties at the landscape level. However, human-wildlife conflicts in concession areas still occur. Efforts to mitigate and reduce human-wildlife conflict require the involvement of all stakeholders, both those directly and indirectly affected (IUCN, 2023). Even though there is still much

\*Corresponding Author's E-mail: [dollypriatna@unpak.ac.id](mailto:dollypriatna@unpak.ac.id)

that needs to be improved to pursue a co-existence, at least currently all concessions of the wood supply companies still provide additional habitat for 77 individual Sumatran tigers, 296 individual Sumatran elephants, and 190 individual Bornean orangutans (APP, 2022).

Indeed, it is not easy work to optimize the implementation of wildlife conservation's BMP which requires collaboration and support from stakeholders at various levels in the same landscape (Priatna 2019). Local communities and all people need to realize that they are using the same space as wildlife. Thus, understanding wildlife behaviour is the main asset for avoiding conflicts. According to Gross *et al.* (2021), local communities are one of the main stakeholders to achieve co-existence, but the economic benefits for communities from the presence of wildlife around them need to be developed. It is necessary to take sides from the central and regional governments in the conservation of endangered wildlife when making policies to regulate regional spatial planning and infrastructure development implementation. The central and regional governments must also be more serious in protecting the conservation areas and protected forests for which they are responsible, as well as carrying out strict law enforcement against perpetrators of forestry and wildlife crimes. Even though it is voluntary, it is vital to carry out HCV and HCS assessments before a land-based company operates, to find out indicative areas used as wildlife habitat within the concession. If those areas are permanently set aside and managed properly, they can function as a wildlife corridor as well as an additional habitat for wildlife outside the conservation area, where which is a very significant contribution from land-based industry to wildlife conservation (Priatna, 2019).

The concept of combining BMP and a landscape approach seems very suitable to answer the current problem of preserving wildlife, where their current habitat patches lie within other various land uses. Furthermore, if it can be realized, the concept of wildlife management employing this landscape approach can also be a solution for sustainable development, which can create a balance between economic and infrastructure development, with social interests, as well as environmental preservation, especially endangered wildlife.

## REFERENCES

- APP. 2022. *2022 APP Sustainability Report: Collaboration for Resilience*. Jakarta: PT. APP Purinusa Ekapersada.
- Bateman, I., Fisher, B., Fitzherbert, E., Glew, D., Naidoo, R. 2010. Tigers, markets and palm oil: market potential for conservation. *Oryx*, 44(02), 230-234.
- Borah B.C., Sarkar Prabal., Bhattacharya A. 2020. Efficacy of different traditional methods in mitigating human-elephant conflict in Rani-Garbhanga area of Assam, India. *Asian Journal of Conservation Biology*, 9 (2): 362-366
- Chen, S., Woodcock, C., Dong, L., Tarrío, K., Mohammadi, D., and Olofsson, P. 2023. Review of drivers of forest degradation and deforestation in Southeast Asia. *Remote Sensing Applications: Society and Environment*, 33, 101129. DOI: 10.1016/j.rsase.2023.101129
- Chong, D. K. F., and Norwana, A. A. B. D. 2005. Guidelines on the Better Management Practices for the Mitigation and Management of Human-Elephant Conflict in and around Oil-Palm Plantations in Indonesia and Malaysia, Version 1. Petaling Jaya: WWF-Malaysia.
- Ghani, N. A. ab., 2020. Developing an evidence-based policy and protocol for human elephant conflict in oil palm plantations : (a case study of Sime Darby Plantation Berhad). MRes Thesis. University of Nottingham.
- Gross, E., Jayasinghe, N., Brooks, A., Polet, G., Wadhwa, R., and Hilderink-Koopmans, F. 2021. *A Future for All: The Need for Human-Wildlife Coexistence*. Gland, Switzerland: WWF.
- Horgan, F. G., and Kudavidanage, E. 2021. *Translating Research into Wildlife Conservation Actions Through Multi-sector Collaboration in Tropical Asia*. In: C.C. Ferreira & C.F.C. Klutsch (eds.). *Closing the Knowledge-Implementation Gap in Conservation Science: Interdisciplinary Evidence Transfer Across Sectors and Spatiotemporal Scales*. Berlin: Springer Nature. Pp. 371-411.
- IUCN. 2023. IUCN SSC guidelines on human-wildlife conflict and coexistence. First edition. Gland, Switzerland: IUCN. <https://doi.org/10.2305/YGK2927>
- Lim, C. L., Prescott, G. W., De Alban, J. D. T., Ziegler, A. D., and Webb, E. L. 2017. Untangling the proximate causes and underlying drivers of deforestation and forest degradation in Myanmar. *Conservation Biology*, 31(6), 1362-1372. DOI: 10.1111/cobi.12984
- Lubis, M.I., Pusparini, W., Prabowo, S. A., Marthy, W., Tarmizi., Andayani, N., and Linkie, M. 2020. Unraveling the complexity of human-tiger conflicts in the Leuser Ecosystem, Sumatra. *Animal Conservation*, 23 (6), 1-9. DOI: 10.1111/acv.12591
- OCSF. 2009. *Best Management Practices for Orangutan Habitats Outside Protected Areas: Management of Orangutan Habitat and Populations in Mining Concessions*. Jakarta: USAID-OCSF.
- Othman, N., Mustapah, M. A., Quilter, A. G., and Dewan, A. 2022. Understanding barriers and benefits to adopting elephant coexistence practices in oil palm plantation landscapes in Lower Kinabatangan, Sabah. *Frontiers in Conservation Science*, 3, 989833. DOI: 10.3389/fcsc.2022.989833
- Priatna, D. 2019. *Konservasi Harimau di Bentang Alam Industri*. In: A. Prijono, M. Kholis, & L.D. Bahaduri (eds.). *AUM! Atlas Harimau Nusantara*. Jakarta: KLHK-GEF UNDP. Pp. 162-167.
- Subedi P., Joshi R., Poudel B., Lamichhane S. 2020. Status of Human-Wildlife conflict and Assessment of Crop Damage by Wild Animals in Buffer Zone Area of Banke National Park, Nepal. *Asian Journal of Conservation Biology*, 9(2): 196-206.
- Sukmantoro, W., and Syahir, M. Y. A. 2017. *Seri Modul WWF Indonesia: Modul MP2CE Untuk Mitigasi Konflik Gajah-Manusia Terpadu*. Jakarta: WWF-Indonesia.
- Sulistiyono, N., Marsudi, S., Ahda, M., Asmanijar, W., Tobing, G. L., and Zahirah, A. 2023. Economic Loss Value of Human-wildlife Conflict at the Management Section of National Park (MSNP) VI Besitang, Gunung Leuser National Park (GLNP). *IOP Conf. Ser.: Earth Environ. Sci.* 1188 012011.
- Sunarto, Widodo, E., and Priatna, D. 2008. *Rajut Belang: Better Management Practices Guideline for Oil Palm Plantations and Industrial Forestry Plantations in Supporting Tiger Conservation*. Pekanbaru: PHKA-WWF Indonesia- HarimauKita-ZSL.
- Tanalgo, K. C., Sritongchua, T., and Hughes, A. C. 2021. Seasonal Activity of Fruit Bats in a Monoculture Rubber and Oil Palm Plantation in the Southern Philippines. *Conservation*, 2021(1), 258-269.
- Wong, S. T., Guharajan, R., Petrus, A., Jubili, J., Lietz, R., Abrams, J. F., Hon, J., Alen, L. H., Ting, N. K. T., Wong, G. T. N., Tchin, L. T., Bijack, N. J. C., Kramer-Schadt, S., Wilting, A., and Sollmann, R. 2022. How do terrestrial wildlife communities respond to small-scale Acacia plantations embedded in harvested tropical forest?. *Ecology and Evolution*, 12(9), e9337.

