ABDIMAS TALENTA
Jurnal Pengabdian Kepada Masyarakat
Journal homepage: https://talenta.usu.ac.id/abdimas

Information Boards as Forest Conservation Campaign in Bahorok Research Center, Langkat Regency, North Sumatera Utara, Indonesia

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ARTICLE INFO

Article history:
Received : 06 April 2024
Revised : 11 April 2024
Accepted : 13 September 2024
Available online: 17 November 2024

E-ISSN: 2549-418X
P-ISSN: 2549-4341

How to cite:
Berliani, K., Elismani., Jumilawaty, E., Nurtjahja, K., Wahyuningsih, H., Siregar, E.S., Nurwahyuni, I., Tanjung, M., Priyani, N., Supriharti, D., Siregar, J.P. (2024). Information Boards as Forest Conservation Campaign in Bahorok Research Center, Langkat Regency, North Sumatera Utara, Indonesia. ABDIMAS TALENTA: Jurnal Pengabdian Kepada Masyrakat, 9(2), 115-120.

http://doi.org/10.32734/abdimastalenta.v9i2.16643

ABSTRACT

Yayasan Ekosistem Lestari (YEL) in Bahorok Research Station in Bahorok Sub-district, Langkat District, is a very important location for this work. The hilly terrain of the area provides a beautiful landscape and varied flora and fauna with the main attraction being the corpse flower (*Amorphophallus* sp). With a preserved natural environment and unique ecological features, this research station allows other parties to participate in protecting the area in various conservation campaign, one of which is the installation/establishment of conservation information boards. Conservation information boards can raise public awareness about the importance of protecting forests and their natural environment. Information on ecosystems, flora, fauna, management, and the importance of conservation can be conveyed through these information boards. Information boards are widely used as an educational tool for local communities and visitors to the forest at the research station. They can learn about forest ecology, the negative impacts of deforestation, and sustainable ways of utilizing forest resources. They can learn about forest ecology, the negative impacts of deforestation, and sustainable ways of utilizing forest resources. Information boards can also be used to invite community participation in conservation efforts, which is expected to improve the quality of knowledge and understanding of conservation areas for communities, researchers, and tourists. Therefore, the installation/establishment of conservation information boards needs to be carried out at Bahorok Research Station, Batu Katak as one of the campaign and solutions to maintain the natural conditions in the forest and river.

Keyword: Conservation, Flora and Fauna, Information Board, Research Station

1. Introduction

The diversity of biota that exists in various types of forests in Indonesia is one of the highest in the world. According to National Geographic Indonesia, Indonesia ranks second in land biodiversity after Brazil [1]. However, when land biodiversity is combined with its marine biodiversity, Indonesia becomes the most biodiverse country in the world. The diversity of climate, soil types, and other environmental elements results in the high diversity of ecosystems in Indonesia. Along with flora diversity, Indonesia also stands out with its striking fauna diversity. According to LIPI, Indonesia has 115 species of mammals, 1,500 species of birds, 600 species of reptiles, and 270 species of amphibians [2]. In addition, Indonesia is known for its abundant fauna [3]. Most of these fauna, both terrestrial and aquatic, are endemic species found only in Indonesia, as mentioned by [4] and [2].

North Sumatra is a province with rich natural resources and has become home to many unique species of birds and mammals. The area has ecosystems that support the presence of endemic species and high biodiversity.

From birds to mammals, North Sumatra offers a diverse ecological landscape that makes it a highly relevant research area for species inventories [5].

Bahorok Research Station in Bahorok District, Langkat Regency, is a very important location in this service. This is because the area has beautiful scenery accompanied by the presence of varied flora and fauna with the main attraction being corpse flowers (*Amorphophallus* sp). In addition, the area has type A (very wet) climatic conditions with an average rainfall of 2918 mm and an average temperature of 21.7°C - 24°C. Topography ranges from 165 - 450 meters above sea level, the condition of the hilly area is the dominant limestone area which is important for biodiversity. The natural environment in the area is still maintained and has unique ecological characteristics, this research station allows other parties to participate in protecting the area in various conservation efforts, one of which is the installation/establishment of conservation information boards.

Community groups, researchers, and tourists can continue to visit Bahorok Research Station happily if the natural conditions around the station are maintained with abundant biodiversity. However, information boards are not available in the area to maintain these conditions as scientific information and reminders to visitors. Based on the survey conducted at the Bahorok Research Station location, the implementation team and potential partners formulated that the area is in dire need of an information board about conservation and knowledge that can be easily read by visitors, for example on forest entry points.

The implementation team concluded that there are several problems faced by the Bahorok Research Station in maintaining the continuity of community visits, researchers, or tourists who still maintain ethics, order, and visitor management oriented towards fauna and flora conservation in the area. The service team observed that there was no conservation information board as a guide and information and reminder to visitors around the location of the Bahorok Research Station or at the entrance lanes that could be directly accessed and understood by visitors during their stay and research activities or traveling in the forest. Furthermore, based on the results of discussions with the management of the dedication team and the Bahorok Research Station, it was realized that there were no human resources from the station who were competent to design information boards containing conservation material and reminders for visitors and position information boards in the area so that they could be directly accessed and understood by visitors while in the forest and tourism activities in the Bahorok Research Station area.

2. Method

The implementation of this community service activity can be divided into several stages as follows: (a). Initial study stage. At this stage, the implementation team has conducted a survey of the Bahorok Research Station Area. The service team documented some of the findings when patrolling with field officers and noticed the condition of the area which was still natural, but there was no information board around the location related to forest conservation material. (b) Program and facility introduction stage. The team implementing the service program together with the Bahorok Research Station will communicate and discuss with management and field staff to design an initial plan for extension activities and the creation of conservation information boards. The service team explained and introduced to the management the objectives, achievement targets, and sustainable plans for this service program. (c) Partner training phase. The implementation team conducted counseling activities and discussions in advance with village communities around the Bahorok Research Station Forest area, about forest area conservation. The implementation team of the service program provided a briefing at the beginning of the activity to prepare technically and the readiness of the team consisting of lecturers and postgraduate students of departement biology faculity of natural science and mathematics University of sumatera utara, as well as the management of Bahorok Research Station field officers. Furthermore, the service participants continued their journey to the camp location of the Bahorok Research Station. The trip to the location takes approximately 1 hour from Batu Katak Village. Participants then installed the designed conservation information board (Figure 1) and provided scientific books to the Yayasan Ekosistem Lestari (YEL), which oversees the station. Riset Bahorok. (d) Feedback stage. The service program implementation team collected input from Bahorok Research Station field officers (partners) about experiences and changes after the implementation of skills training, and counseling and provided tips and solutions if obstacles were found from the community, researchers, tourists, and miners in the implementation of the conservation information board installation program in the Bahorok Research Station area.

Figure 1. Design of the conservation information board

3. Result and Discussion

Bahorok Research Station in Bahorok District, Langkat Regency has a beautiful landscape with varied flora and fauna in a hilly area with limestone areas that are important for biodiversity. The condition of the limestone area is not only important for biodiversity but also attractive to investors engaged in specialized fields such as cement mining. This makes the forest area as the location of the Research Station vulnerable to over-exploitation, so there needs to be a solution that indirectly provides conservation information to those visiting the forest area, whether the community, researchers, tourists, or miners.

The community service was attended by academics, both lecturers and students of Programs Study Master of Biology and Doctor of Biological Sciences Department Biology Faculty of Natural Sciences and Mathematics University of Sumatera Utara, Yayasan Ekosistem Lestari (YEL) which oversees the Bahorok Research Station Area, and the Batu Katak Village community. The activity began with counselling and discussion about forest and watershed conservation at the home of one of the Batu Katak Village residents. This was an interesting activity because all participants were enthusiastic about the discussion and created an emotional closeness to agree to protect forests and rivers.

The Community Service activity continued with a trip to the Bahorok Research Station camp which took approximately 1 hour from the village. This journey (Figure 2) passes through forests and rivers with muddy and slippery soil conditions. Nevertheless, all participants made it to their destination and spent the night at the camp. In the evening, the discussion on conservation issues resumed with the aim of exploring students' insights when providing answers and their understanding of various media and scientific literature (Figure 3). The next day, the community service continued with the installation of the conservation information board. The participants worked together to lift the conservation information board to the designated installation/establishment location. The installation/erection of conservation information boards was carried out at the Bahorok Research Station camp (Figure 4) and at the forest border with the Batu Katak Village community settlement (Figure 5) with the community, lecturers, and students.

After completing the installation of the conservation information board, Programs Study Master of Biology and Doctor of Biological Sciences Department Biology Faculty of Natural Sciences and Mathematics University of Sumatera Utara. represented by the Head of the Study Program Dr. Elimasni, M.Si donated scientific books from Biology lecturers to the management of the Bahorok Research Station (Figure 6). Academic circles, especially lecturers who participated in this service, hope that these books can provide insight and knowledge about the conservation and diversity of flora and fauna in Indonesia.

Figure 2. The journey to the location of the conservation information board installation at Bahorok Research Station, Batu Katak, Bahorok District, Langkat Regency

Figure 3. Discussion on wildlife conservation issues with the aim of exploring students understanding insights with reviews from various media and scientific literature.

Figure 4. The installation process of the conservation information board at Bahorok Research Station Camp, Batu Katak

Figure 5. The installation process of the conservation information board at Bahorok Research Station Camp, Batu Katak

Figure 6. Scientific book donation to Yayasan Ekosistem Lestari (YEL)

4. Conclusion

Programs Study Master of Biology and Doctor of Biological Sciences, Faculty of Mathematics and Natural Sciences University of Sumatera Utara has installed/established a conservation information board in the Bahorok Research Area, Batu Katak Village, Bahorok District, Langkat Regency, North Sumatra Province. This aims to provide information to the community, researchers, tourists and miners who pass through the forest with warnings and appeals on the board to be able to maintain the flora and fauna in it remain sustainable.

Programs Study Master of Biology and Doctor of Biological Sciences, Faculty of Mathematics and Natural Sciences University of Sumatera Utara hopes that this activity can provide opportunities for University of Sumatera Utara lecturers and students in particular to interact with the community and work with institutions/organizations so that they can apply biological science and can establish social networks with the community in Batu Katak. In addition, through the approach of moral messages contained in this conservation information board, it can be a trigger for the community to preserve the forest, for the benefit of now and the future.

5. Acknowledgements

We acknowledge the Yayasan Ekosistem Lestari (YEL) of the Bahorok Research Center for collaboration and for providing accommodation during this community service activity.

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