



Analysis of public misconceptions on the conservation of sumatran orangutans (*Pongo abelii* L, 1827) in Jantho Aceh Besar, Indonesia

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Abstract

Misconceptions are a critical factor affecting the success of wildlife conservation efforts. Currently, there is limited scientific information on public misconceptions about the conservation of Sumatran Orangutans (*Pongo abelii* L, 1827) in Kota Jantho District, Aceh Besar Regency. This study aims to identify public misconceptions regarding Sumatran Orangutan conservation in Kota Jantho District, focusing on the aspects of bioecology, conflict, and conflict mitigation, as well as assessing the level of misconceptions based on community characteristics. The research employs a quantitative approach with a descriptive design, using a survey method. The results reveal that the highest level of misconceptions (M) was found in the aspect of Sumatran Orangutan conflicts (14.84%), followed by misconceptions in bioecology (11.36%), with the lowest misconceptions in conflict mitigation (8.97%). Misconceptions were more prevalent among females (62.96%) and were highest among those with junior high school (45.71%) and higher education (45.71%) levels. In conclusion, misconceptions about Sumatran Orangutan conservation were identified among the Jantho community, with the highest misconceptions found among females and those with junior high school and higher education levels.

Keywords: Misconceptions, sumatran orangutan (*Pongo abelii*), human-wildlife conflict

Introduction

Aceh is one of the habitats for Sumatran Orangutans, alongside North Sumatra and the Riau-Jambi border. One of the conservation efforts for Sumatran Orangutans in Aceh is the release program initiated in 2011 at the Jantho Pine Forest Nature Reserve. The Sumatran Orangutans currently residing in the Jantho Pine Forest Nature Reserve are relocated animals that have lost their natural habitat, were confiscated from the public, or were rescued from illegal trade.

The community living around the Reintroduction Center is still not well-acquainted with Sumatran Orangutans and their role in the ecosystem (Ernilasari, 2023) [2]. This lack of understanding could lead to misconceptions among the community, arising from different levels of comprehension about the ecology, conflicts, and conflict mitigation concerning the Sumatran Orangutans in the Jantho Pine Forest Nature Reserve.

A misconception is a mistaken idea or view about a concept that an individual believes to be correct but does not align with the concept agreed upon and accepted as accurate by experts. Misconceptions are often resistant to change and persistent over time. These views are difficult to alter because individuals may derive concepts directly from their experiences and hold onto them as truths, even if those concepts are incorrect (Suhermiati, 2015) [15].

Research method

Approach and type of research

This study uses a quantitative approach and a descriptive research type. The method employed is a survey using purposive sampling technique.

Time and place of research

The research was conducted in Gampong Bueng and Jalin, Kota Jantho District, Aceh Besar Regency, in June 2024.

Population and sample

The population for this study consists of 417 residents of Gampong Bueng and Jalin. The sample size used is 78 individuals. The sampling technique employed is purposive sampling, with the criteria that respondents are residents of Jantho, over 17 years old, and in good health.

Data collection technique

Data collection was carried out using a questionnaire. The questionnaire items are grouped into three aspects: bioecology, conflict, and conflict mitigation of Sumatran Orangutans. Respondents answered each statement as either correct or incorrect, providing reasons and levels of confidence for each item.

Data analysis technique

Responses to the questionnaire items were analyzed to determine the presence of misconceptions according to the answer criteria and CRI values specified in Table 1. The answers were then classified into three categories: M (misconception), CK (concept knowledge), and LCK (lack of concept knowledge), and the percentages were calculated.

Table 1: Criteria for Concept Knowledge and Misconceptions

Answer Criteria	Low CRI (<2.5)	High CRI (>2.5)
Correct	Lack of Concept Knowledge (Guessing)	Well-Understood Concept
Incorrect	Lack of Concept Knowledge (Guessing)	Misconception

Source: Hasan (1999) [3]

Results and discussion

Identification of public misconceptions

The research findings indicate that the community in Gampong Bueng and Jalin, Kota Jantho District, exhibits

misconceptions regarding Sumatran Orangutan conservation issues. In addition to misconceptions, the study also identified two other categories of responses: concept knowledge and lack of concept knowledge. The percentages of these three categories differ and are detailed in Table 2.

Table 2: Percentages of Misconceptions and Concept Knowledge

No	Aspect Group	Percentage (%)			Total
		Misconceptions	Concept Knowledge	Lack of Concept Knowledge	
1	Orangutan Bioecology	11,36	75,09	13,55	100
2	Orangutan Conflict	14,84	69,60	15,57	100
3	Orangutan Conflict Mitigation	8,97	80,59	10,44	100

In Table 2, it is shown that the community has misconceptions about Sumatran Orangutan conservation issues. The highest level of misconceptions (M) is found in the aspect of Sumatran Orangutan conflict (14.84%), followed by the aspect of Sumatran Orangutan bioecology (11.36%), and the lowest misconceptions are found in the aspect of Sumatran Orangutan conflict mitigation (8.97%). The highest level of concept knowledge (TK) is observed in the aspect of Sumatran Orangutan conflict mitigation (80.59%), followed by Sumatran Orangutan bioecology (75.09%), with the lowest percentage of concept knowledge in Sumatran Orangutan conflict (69.60%). The highest level of lack of concept knowledge (TTK) is found in the aspect of Sumatran Orangutan conflict (15.57%), followed by Sumatran Orangutan bioecology (13.55%), and the lowest lack of concept knowledge is in the aspect of Sumatran Orangutan conflict mitigation (10.44%). This indicates that Sumatran Orangutan conservation issues are still not well understood by the community, especially regarding Sumatran Orangutan bioecology and conflict.

However, the highest percentage of concept knowledge is found in the aspect of Sumatran Orangutan conflict mitigation (80.59%), suggesting that the community has a better understanding of conflict mitigation compared to other aspects.

Aspect of misconceptions

The research findings on Sumatran Orangutan conservation issues reveal that respondents exhibit misconceptions across all aspects. These misconceptions arise from an understanding of certain aspects that do not align with scientific concepts. A comparison of misconceptions across each aspect is shown in Figure 1.

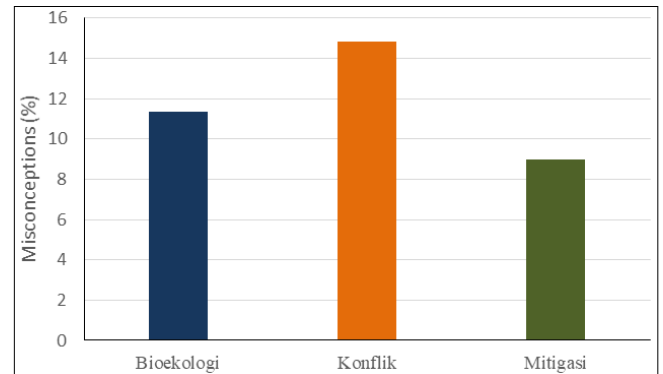


Fig 1: Comparison of Misconceptions across Aspects

Based on Figure 1, the aspect of conflict shows the highest level of misconceptions (14.84%), followed by the aspect of bioecology (11.36%), with the lowest misconceptions observed in the aspect of conflict mitigation (8.97%).

Misconceptions by gender

The study found that misconceptions are higher among females compared to males across all aspects: bioecology, conflict, and conflict mitigation of Sumatran Orangutans.

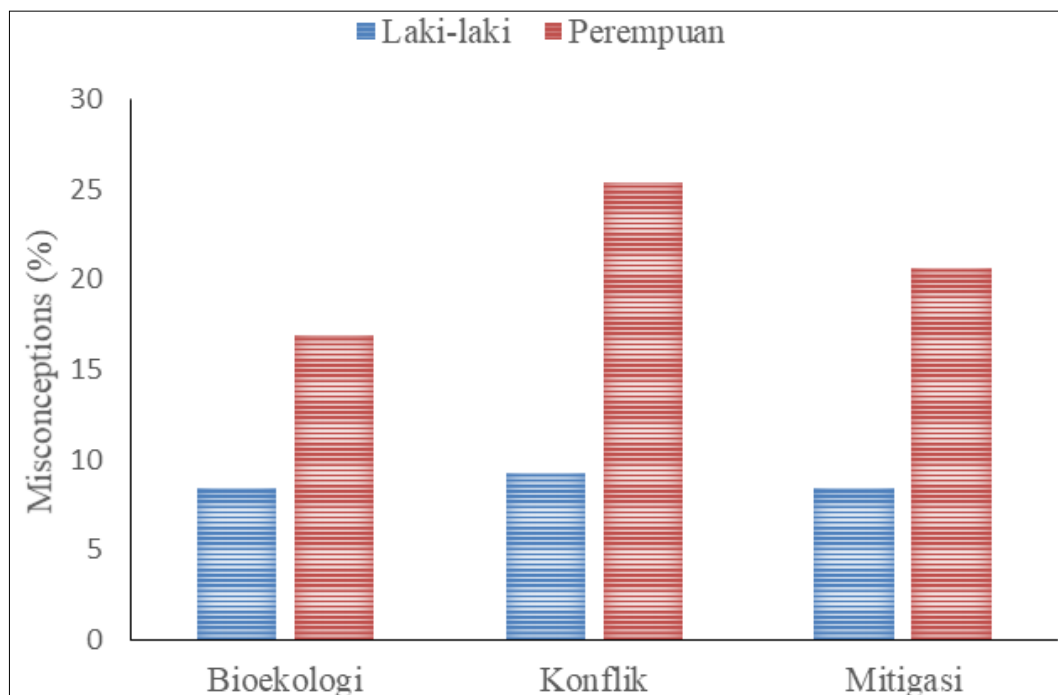


Fig 2. Comparison of Misconceptions by Gender

In Figure 2, the highest level of misconceptions (M) among males is found in the aspect of Orangutan conflict (9.24%), followed by the aspects of Orangutan bioecology and conflict mitigation. For females, the highest level of misconceptions (M) is observed in the aspect of Orangutan conflict (25.40%), followed by the aspect of conflict mitigation, with the lowest percentage in the aspect of Orangutan bioecology.

Misconceptions by education level

The research data show that misconceptions occur across all education levels. The highest level of misconceptions is found in the aspect of Orangutan conflict among those with higher education. The lowest level of misconceptions is observed at the high school level, specifically in the aspect of Sumatran Orangutan conflict mitigation. A comparison of misconceptions across all education levels is shown in Figure 3.

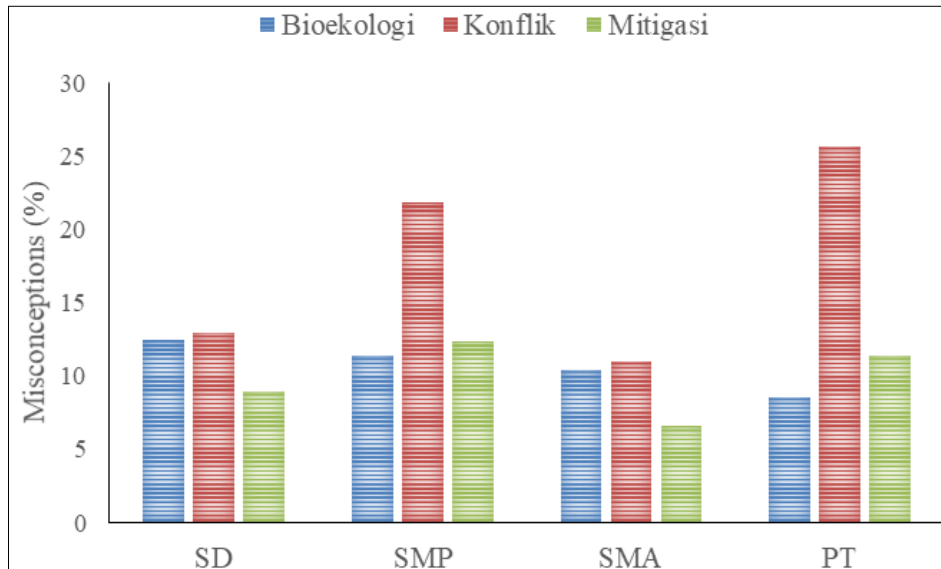


Fig 3. Misconceptions by Education Level

In Figure 3, the highest level of misconceptions (M) at the elementary school level is found in the aspect of Orangutan conflict (12.95%), followed by Orangutan bioecology, with the lowest percentage in the aspect of conflict mitigation. At the junior high school level, the highest misconceptions (M) are observed in the aspect of Orangutan conflict (21.90%), followed by conflict mitigation, with the lowest in Orangutan bioecology.

At the senior high school level, the highest misconceptions (M) are in the aspect of Orangutan conflict (10.99%), followed by Orangutan bioecology, with the lowest in conflict mitigation. For higher education, the highest misconceptions (M) are in the aspect of Orangutan conflict (25.71%), followed by conflict mitigation, with the lowest in Orangutan bioecology.

Discussion

Sumatran orangutan conservation issues

The highest level of misconceptions is found in the aspect of Sumatran Orangutan conflict. One cause of these misconceptions is the limited local knowledge passed down through generations, leading to very restricted understanding of Orangutan conflicts. Some interactions between people and Orangutans result in the perception that Orangutans are not threatening or harmful due to minimal severe conflicts in Jantho. Orangutans are occasionally found in plantations, but they do not damage crops as the plants grown are not their preferred food. When damage does occur, it is not significant. Additionally, the lack of information and education on Orangutan conflicts contributes to higher misconceptions.

Factors contributing to misconceptions

Misconceptions can arise from various external or internal factors. The study revealed that respondents varied in their knowledge of Sumatran Orangutan conservation, with some understanding it well, some unaware, and others holding misconceptions. Four main factors contributing to misconceptions were identified:

- Limited local knowledge:** Orangutans reintroduced in Jantho in 2011 were not previously coexisting with the local community, leading to minimal local knowledge about them. Information is often derived from management sources, direct encounters, or word-of-mouth, which can influence the level of misconceptions.
- Gender differences:** Most females in Gampong Bueng and Jalin are housewives or farmers who do not engage directly with Orangutan habitats. They rely on indirect sources of information, which often leads to the spread of inaccurate information and exacerbates misconceptions. Women's limited involvement in conservation activities compared to men, who may work directly with NGOs and other stakeholders, also affects their awareness and understanding.
- Education level:** The highest level of misconceptions occurs at the junior high and higher education levels. Despite higher education, not all students receive comprehensive information about Orangutans. Misconceptions can persist regardless of education level, influenced by lack of interest or awareness. Misconceptions are not confined by age, gender, or education level (Asberger, 2021) ^[1].

Conclusion

Based on the research conducted, the following conclusions can be drawn:

- 1. Identification of misconceptions:** Misconceptions about the conservation of Sumatran Orangutans (*Pongo abelii* L., 1827) were identified. The highest level of misconception (M) was found in the aspect of Sumatran Orangutan conflict, followed by the aspect of Sumatran Orangutan bioecology, and the lowest level of misconception was in the aspect of conflict mitigation.
- 2. Misconceptions by demographic characteristic:** The highest level of misconception based on gender was found among females, while the highest level of misconception based on education was found among those with junior high school and higher education.

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