



Ethnozoology of the Albino Buffalo (*Bubalus* sp.) in the Traditional Rituals of the Surakarta Sunanate Palace

Berlin Happy Winike Christi^{1*}

¹ Study Program of Biology, Faculty of Military Mathematics and Natural Sciences, The Republic of Indonesia Defense University. Komplek Indonesia Peace and Security Center (IPSC) Sentul, Bogor 116810, Indonesia.

* Correspondence: berlinhappywc@gmail.com

Abstract

The albino buffalo (*Bubalus* sp.), locally known as Kebo Bule Kyai Slamet, holds a significant cultural and spiritual position within the traditions of the Surakarta Sunanate Palace. This study aims to examine the ethnozoological dimensions of the albino buffalo, including its historical background, symbolic meaning, daily management practices, and socio-cultural dynamics. A qualitative approach was employed using semi-structured interviews with palace servants (abdi dalem), cultural scholars, and local community members. Data were analyzed using thematic descriptive analysis. The findings reveal that the albino buffalo is not merely livestock but a living cultural symbol representing cosmological balance, royal legitimacy, and communal identity in Javanese society. Ritual involvement, particularly during the 1st Suro procession, reinforces its sacred status. Knowledge of buffalo management is transmitted intergenerationally through oral tradition and direct involvement. Despite modernization and tourism influences, preservation efforts continue through customary regulations, ritual practices, and cultural education. This study highlights the importance of ethnozoological perspectives in understanding human–animal relationships within traditional societies.

Keywords: albino buffalo, cultural heritage, ethnozoology, Javanese culture, traditional ritual

1. Introduction

Ethnozoology, a sub-discipline of ethnobiology, examines the dynamic relationships between human societies and animal species within cultural, ecological, and symbolic frameworks (Yuniati et al. 2020). Rather than perceiving animals solely as biological resources, ethnozoology emphasizes their roles as cultural agents embedded in belief systems, ritual practices, traditional knowledge, and socio-political structures. In many traditional societies, animals are integrated into cosmology, mythology, and ceremonial life, forming part of what is now widely recognized as biocultural heritage. Indonesia, with its vast cultural and biological diversity, provides rich contexts for ethnozoological studies, particularly within Javanese court traditions where symbolic systems remain strongly preserved.

Javanese culture is characterized by a complex cosmological worldview that emphasizes harmony between the macrocosm (universe) and microcosm (human world) (Abdullah 2016). Within this philosophical framework, animals often function as mediators between visible and invisible realms. The Surakarta Sunanate Palace (Keraton Kasunanan Surakarta), one of the major centers of Javanese royal culture, maintains a variety of traditions in which animals play significant ceremonial and symbolic roles. Among these, the albino buffalo (*Bubalus* sp.), popularly known as Kebo Bule Kyai Slamet, occupies a particularly prominent position.

Historically, the albino buffalo is associated with the reign of Pakubuwono II in the 18th century (Rudianto et al. 2020). Oral traditions recount that the buffalo lineage originated from a sacred royal possession that symbolized protection and legitimacy of the kingdom. Over time, the albino buffalo became institutionalized within palace rituals, especially during the annual 1st Suro procession, which marks the

Javanese New Year and coincides with the Islamic month of Muharram (Safitri et al. 2019). In this procession, the albino buffalo leads the parade of sacred heirlooms (pusaka), symbolizing guardianship, continuity, and spiritual balance (Paramesti et al 2023).

Biologically, the albino buffalo differs from ordinary buffalo due to reduced melanin pigmentation, resulting in pale or reddish-white skin coloration. However, within the palace context, its uniqueness is not interpreted merely as a genetic variation but as a signifier of sacredness. The attribution of the honorific title “Kyai” further elevates the buffalo’s status, placing it within a category typically reserved for respected elders or sacred objects (Husodo et al. 2025). This transformation from livestock to cultural symbol illustrates how human perception and belief systems can redefine biological entities into carriers of collective identity.

From an ethnozoological perspective, the albino buffalo represents more than ritual symbolism. It reflects a system of traditional ecological knowledge involving breeding, feeding practices, health management, and hierarchical caretaking roles within the palace institution (Ayuputri 2023). The buffalo is managed by specific palace servants (Abdi Dalem Sрати Mahesa), whose responsibilities are transmitted intergenerationally (Husodo et al. 2025). This localized knowledge system demonstrates how animal management practices are embedded within cultural structures rather than separated as purely technical activities.

In addition, the presence of the albino buffalo influences social and economic dynamics around the palace (Hapsari and Kusuma 2024). During ritual events and daily visitation, local community members interact with the buffalo, often seeking blessings or participating in feeding activities. Small-scale economic activities, such as selling vegetables for visitors to feed the buffalo, indicate the integration of sacred tradition with contemporary livelihood strategies. This intersection raises important questions regarding the negotiation between preservation of sacred values and adaptation to modern tourism pressures.

Despite its strong cultural foundation, the continuity of albino buffalo traditions faces several challenges, including modernization, declining youth engagement in palace service, limited population size, and vulnerability to disease (Buana and Sudrajat 2025). Documenting and analysing this phenomenon through an ethnozoological lens are therefore essential for safeguarding intangible cultural heritage while recognizing the biological and ecological dimensions of the species. This study aims to explore the ethnozoological significance of the albino buffalo in the Surakarta Sunanate Palace by examining its historical background, symbolic meanings, traditional management practices, community perceptions, and contemporary preservation challenges. Through qualitative analysis, this research seeks to contribute to broader discussions on human–animal relationships and the conservation of biocultural heritage in Indonesia.

2. Materials and Methods

This study was designed to explore the ethnozoological dimensions of the albino buffalo (*Bubalus* sp.) within the cultural context of the Surakarta Sunanate Palace. A qualitative descriptive approach was employed to comprehensively document and analyze the interactions between humans and the albino buffalo as reflected in ritual practices, traditional knowledge systems, and socio-cultural values. The research combined participatory observation, semi-structured interviews, and document analysis to obtain in-depth information from key cultural actors.

2.1. Study Area and Time

The research was conducted at the Surakarta Sunanate Palace complex, Central Java, Indonesia. The study was carried out from December 2025 to January 2026, coinciding with routine palace activities and allowing direct observation of buffalo management practices and community interactions (Figure 1). The palace complex serves not only as a historical royal residence but also as a living cultural center where traditional ceremonies, rituals, and customary practices are continuously performed. The albino buffalo (*Bubalus* sp.), known as Kebo Bule Kyai Slamet, is maintained within the palace environment under the supervision of appointed palace servants (Abdi Dalem). The cultural

landscape of the palace reflects a strong integration between Javanese cosmology, Islamic influence, and royal tradition, making it an appropriate site for ethnozoological investigation.



Figure 1. Interaction between visitors and the albino buffalo during routine feeding activities within the palace complex

2.2. Procedures

This research employed a qualitative descriptive approach using participatory and exploratory methods to understand the ethnozoological dimensions of the albino buffalo. Data collection was conducted through direct observation, in-depth interviews, and documentation. Ethnozoological data were obtained through open-ended, semi-structured, and in-depth interviews with selected informants. Informants were determined using purposive sampling based on their knowledge, role, and involvement in palace traditions. The key informants included: (1) an Abdi Dalem Sрати Mahesa responsible for the daily care and supervision of the albino buffalo, (2) a cultural scholar knowledgeable about the history and symbolic meaning of Kebo Bule Kyai Slamet, and (3) a local community member engaged in economic activities around the palace. Snowball sampling was further applied to identify additional relevant sources of information when necessary. Interview questions covered historical background, symbolic meaning, ritual functions, traditional knowledge of feeding and health management, breeding practices, transmission of knowledge, and perceived socio-economic impacts. Interviews were conducted in Indonesian and Javanese languages, recorded with consent, and later transcribed for analysis.

2.3. Data Analysis

The data collected consisted of qualitative and limited quantitative information. Qualitative data included narratives on historical origins, symbolic interpretations, ritual roles, traditional management practices, and community perceptions. These data were analyzed using thematic analysis, involving data reduction, coding, categorization, and interpretation to identify recurring patterns and key themes related to human–animal relationships. Triangulation was applied by comparing information obtained from different informants and observational findings to ensure data validity and reliability.

3. Results and Discussion

3.1. Cultural Significance and Historical Continuity

The albino buffalo has been part of palace tradition since the reign of Pakubuwono II (1725), where it was regarded not merely as livestock but as a royal possession symbolizing authority and continuity of power. Informants consistently emphasized that the buffalo's presence represents a tangible link between past and present palace governance, reinforcing historical legitimacy through ritual continuity. Its participation in ceremonial processions reflects the Javanese cosmological worldview that prioritizes balance between the physical and metaphysical realms, where symbolic actors are required to maintain universal harmony. The conferment of the honorific title "Kyai" elevates the buffalo into a sacred cultural category typically reserved for revered elders or heirlooms, thus institutionalizing its spiritual status within palace hierarchy. Biologically, its albino phenotype—characterized by pale reddish-white skin due to reduced melanin—is interpreted culturally as a sign of purity and distinction rather than as a genetic anomaly. This reinterpretation demonstrates how biological traits can be culturally transformed into markers of sacred legitimacy. Through sustained ritual involvement across centuries, the albino buffalo has become a living cultural archive that embodies collective memory and historical continuity within the Surakarta court tradition.

3.2. Symbolic Meaning and Spiritual Dimension

The albino buffalo symbolizes purity, safety, and divine blessing. During the 1st Suro procession, it leads the sacred heirlooms, acting as a symbolic guardian (Pradipta 2022). Many community members believe that elements associated with the buffalo—such as soil from its enclosure—carry blessings (ngalap berkah) (Wardhani et al. 2021). However, cultural scholars note that the sacredness attributed to the buffalo is not solely based on mystical power but is constructed through collective belief systems reproduced over generations. The buffalo thus operates as a symbolic mediator between royal authority and public spirituality, bridging institutional power and communal faith. Its presence reinforces social cohesion by providing a shared focal point for ritual participation and spiritual reflection. In this sense, the albino buffalo exemplifies how animals can function as symbolic agents within broader systems of cultural meaning and religious expression.

3.3. Traditional Management and Local Knowledge

The daily management of the albino buffalo is entrusted to the Sрати Mahesa (buffalo keeper), whose responsibilities extend beyond routine animal care to include safeguarding cultural integrity. Feeding practices rely primarily on fresh grass supplemented with locally available crops such as corn, cassava, and water spinach, reflecting adaptive use of regional ecological resources. Regular bathing and enclosure maintenance are conducted not only for hygiene but also to preserve the buffalo's dignified appearance as a sacred cultural representative. Prior to ritual participation, special preparation is undertaken, including additional grooming and regulated rest periods to ensure ceremonial readiness. Knowledge regarding feeding schedules, behavioral observation, and basic health assessment is transmitted orally and through direct apprenticeship, often within families who have served the palace across generations. This intergenerational transmission illustrates a localized ethnozoological knowledge system embedded within palace hierarchy and customary norms. Health management tends to be reactive rather than preventive, with veterinary intervention sought when illness occurs, and sick buffaloes are temporarily excluded from ritual events to maintain ceremonial sanctity. Such practices demonstrate how biological management is closely intertwined with symbolic and institutional considerations.

3.4. Human-Animal Interaction and Socioeconomic Impact

The albino buffalo plays a significant role in shaping social interaction within and around the palace complex, particularly during weekends and ritual events when visitor numbers increase substantially. Observations indicate that visitors often engage in symbolic acts such as feeding the buffalo, which strengthens emotional attachment and participatory involvement in palace tradition. Local vendors benefit economically by selling vegetables for feeding activities, thereby creating micro-scale livelihood opportunities connected to cultural heritage. This integration of sacred tradition and informal economic activity demonstrates the dynamic relationship between ritual symbolism and contemporary socio-economic realities. Nevertheless, commercialization introduces a dual dynamic: while it enhances economic sustainability, it may also contribute to the gradual reinterpretation of the buffalo as a tourist attraction rather than a sacred entity. Such shifts in perception reflect broader modernization pressures affecting traditional institutions. Therefore, the albino buffalo functions not only as a ritual symbol but also as an economic and social catalyst within the palace's cultural ecosystem.

3.5. Preservation and Challenges

Efforts to preserve the albino buffalo tradition involve a combination of customary regulation, ritual reinforcement, and controlled breeding practices aimed at maintaining lineage continuity. The prohibition against selling or slaughtering the buffalo reflects its elevated cultural status and ensures its protection as living heritage. Ritual repetition, particularly during the 1st Suro procession, reinforces symbolic meaning and transmits cultural values to younger generations. However, several challenges threaten sustainability, including limited population size, vulnerability to disease, and the decreasing number of young individuals willing to serve as palace caretakers. Additionally, shifting societal values influenced by modernization may weaken communal attachment to traditional institutions. Balancing sacred preservation with tourism-driven exposure remains a critical concern for palace authorities. From an ethnozoological perspective, the albino buffalo exemplifies how animals can serve as cultural anchors within dynamic social systems, requiring integrated strategies that respect both biological sustainability and symbolic continuity.

4. Conclusions

The albino buffalo (*Bubalus* sp.) at the Surakarta Sunanate Palace represents a complex ethnozoological phenomenon integrating biological uniqueness, symbolic meaning, and socio-cultural function. It embodies royal legitimacy, cosmological harmony, and communal identity within Javanese tradition. Traditional management practices reflect intergenerational knowledge transmission, while ritual involvement sustains its sacred status. Despite modernization pressures, preservation efforts continue through customary regulation and cultural reinforcement. This study underscores the importance of ethnozoological research in documenting and safeguarding biocultural heritage in Indonesia.

Supplementary Materials: This journal does not provide hosting for supplementary materials on its website. Therefore, supplementary materials related to this study, including interview transcripts, field documentation, and additional observational data, have not been deposited in a public repository. The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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