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Ethno-ornithology of Temuan Community in Ledang, Johor

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Abstract: Ethno-ornithology is the study of the relationship between people and birds. It is a natural scientific approach that explains the relationship between people's knowledge and the use of birds in their culture. Temuan community is one of the aborigine ethnics in Malaysia. They practice lifestyles that closely associated with nature. Therefore, this study aimed to investigate the ethno-ornithology knowledge and practice by Temuan Community lived around the Gunung Ledang National Park, Johor, Malaysia. A set of questionnaires was distributed to 40 respondents from the Temuan community to gather the information of birds used in their daily activities. In addition, the information was also obtained from the interview session with the head of the village (Tok Batin). The identification of the birds obtained from the questionnaire and interview was further confirmed by using reliable resources. A total of 29 bird species was successfully identified. Temuan community used birds in their daily life in many ways such as, food, pet, folklore, entertainment, and many more. Understanding ethno-ornithology between local community and avifauna is good as it helps conservationists to keep track of bird species they use and identify the sustainable ways of this practice that align with the conservation of avifauna species.

Keywords: Ethno-ornithology, bird, aborigine, Temuan community

1. Introduction

Ethno-ornithology refers to indigenous knowledge of birds or the relationship between people and birds [1]. The terms derived from the Greek word "*ethnos*" meaning relating to race, people, nation, class, caste, or tribe and culture whereas "*logy*" means the study of. It is a branch of ethno-zoology and so of the wider field of ethnobiology which explores how people of various times and places seek to understand the lives of the birds around them [2]. According to [3], ethno-ornithology is an interdisciplinary subject and combination of anthropological, cognitive, and linguistic perspectives with natural scientific approaches to the explanation and interpretation of people's knowledge and use of birds.

Avifauna or birds is a special creature as it occupies a special place in the lives of many peoples and cultures around the world [4][5][6][7]. Because of its enchanting beauty, it is kept as a companion or pet by many peoples. Besides that, it is utilized as food sources, in rituals, traditional medication [8], as an ornament, seasonal or time predictors [3][9]. The incredible use of birds in human life is amazingly undeniable, however, overexploitation of birds may cause reduction and threaten bird's population.

Understanding the knowledge of people's-bird-related cultural beliefs and traditions is paramount as it contributes to the survival or decline of different bird species, consequently affecting their conservation [10][11]. Malaysia is rich with many kinds of natural heritage and one of it is the existence of indigenous people in its country consisting of three main ethnic groups that are known as the Negritos (Semang), the Senoi and the Proto-Malays. Temuan community belongs to Proto-Malays ethnic group is comparatively large tribe and well-known for their knowledge and usage of medicinal plants but much of this knowledge have yet to be recorded and published by the scientific community [12].

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Therefore, we aimed to investigate the ethno-ornithology knowledge and practice by Temuan Community lived around the Gunung Ledang National Park, Johor, Malaysia.

2. Methodology

2.1 Study Area

Gunung Ledang National park (2.3733° N, 102.6078° E) (Fig.1) is a tropical mountain rainforest located on the border of Johor and Malacca states. It is the highest peak in Johor state with an elevation of 1276 m from sea level. The study was conducted in three aborigine villages located around the Gunung Ledang National Park which are Kampung Tanah Gembur, Kampung Sungai Mering and Kampung Air Tawas.

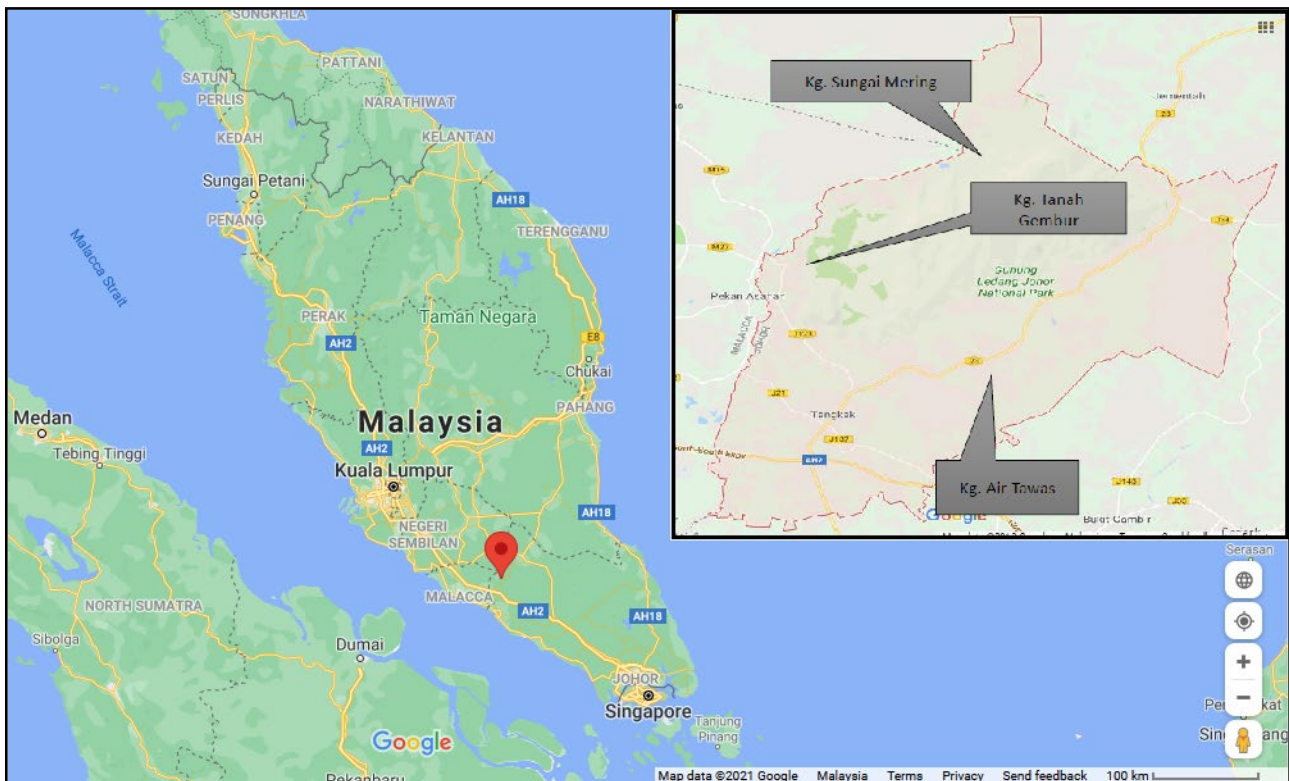


Fig. 1 - Location of study areas

2.2 Survey and Interview

A set of semi-structured questionnaire were distributed to 40 respondents from Temuan community consisting of two parts of questions, part 1 - demography of respondents and part 2 - uses of birds in Temuan community life. Besides questionnaires, an interview was also conducted with the head of the village to gather more information especially their ethno-ornithology and traditional knowledge. We choose head of the village as our primary informant because he is among the elder generation in the village, and we believed that he knew more about their culture compared to the young/new generation. According to [13][14], purposive or rational sampling is suitable for this type of research where the researcher is interested in informants who have the best knowledge concerning the research topic or when special information or data is required [1][15]. In addition, Prior Informed Consent (PIC) and Access and benefit-sharing (ABS) forms were also given to the respondents before the survey and interview session to acknowledge their contribution to this study.

2.3 Identification of the Bird

We analysed the information gathered from the questionnaires and interview in order to identify the bird species mentioned by Temuan people. From the characteristics of the bird described by them, we identify the bird species by using field guide [16]. The identification was then further confirmed with Temuan community by showing them the picture of the birds identified. Double confirmation of the bird identified is important because common name used by Temuan people and researcher is different from each other.

3. Result

3.1 Demography

Table 1 shows the demography results of respondents.

Gender	
Male	25
Female	15
Age	
≤ 18 years old	4
19 - 25 years old	5
26 - 39 years old	10
≥ 40 years old	21
Religion	
Islam	5
Christian	15
Others	20

3.2 Uses of birds

A total of 29 bird species was successfully identified from the survey and interview conducted. Table 2 shows the bird species identified and their uses in Temuan community' culture and Fig.2 shows the summary of bird uses by Temuan Community.

Table 2 - Bird species identified and their uses in Temuan community' culture

No	Local Name	English name	Scientific name	Uses	IUCN status
1.	Ayam Hutan	Red Junglefowl	<i>Gallus gallus</i>	Folklore, food and pet	Least concern
2.	Ayam Kampung	Domesticated fowl	<i>Gallus gallus domesticus</i>	Pet and food	Least concern
3.	Burung Butbut	Greater Coucal	<i>Centropus sinensis</i>	Food	Least concern
4.	Burung Ciak Rumah	Eurasian Tree Sparrow	<i>Passer montanus</i>	Food	Least concern
5.	Burung Hantu Ketuk Ketampi	Buffy Fish-owl	<i>Ketupa ketupu</i>	Pet	Least concern
6.	Burung Hantu Pungguk Jelapang	Barn Owl	<i>Tyto alba</i>	Pet	Least concern
7.	Burung Hantu Sayap Panjang	Short-eared owl	<i>Asio flammeus</i>	Belief and food	Least concern
8.	Burung Helang Gempal	Common Buzzard	<i>Buteo buteo</i>	Food, belief	Least concern
9.	Burung Helang (Burung Kucing)	Barred Eagle owl	<i>Bubo sumatranus</i>	Entertainment	Least concern
10.	Burung Helang Kekicau-Riang Ubin Merah	Chestnut-crowned Laughingthrush	<i>Garrulax erythrocephalus</i>	Belief	Least concern
11.	Burung Hijau	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Food	Least concern
12.	Burung Gagak	House Crow	<i>Corvus splendens</i>	Belief and folklore	Least concern
13.	Burung Kelicap Jantung Gunung	Streaked Spiderhunter	<i>Arachnothera magna</i>	Belief and entertainment	Least concern
14.	Burung Kelicap Sepah Raja	Crimson Sunbird	<i>Aethopyga siparaja</i>	Food and entertainment	Least concern

15.	Burung Kelicap Tekak Hitam	Black-throated Sunbird	<i>Aethopyga saturata</i>	Food	Least concern
16.	Burung Kementeng (burung chawi)	Javan Oriole	<i>Oriolus cruentus</i>	Belief	Least concern
17.	Burung Kuang	Malaysian Peacock- pheasant	<i>Polyplectron malacense</i>	Entertainment and Belief	Vulnerable
18.	Burung Layang- Layang	Waterfall Swift	<i>Hydrochous gigas</i>	Belief	Near threatened
19.	Burung Merbah Gunung	Flavescent bulbul	<i>Pycnonotus flavescens</i>	Belief	Least concern
20.	Burung Merbok Balam	Zebra Dove	<i>Geopelia striata</i>	Food and pet	Least concern
21.	Burung Merbok Leher Bercincin	Ring-necked dove	<i>Streptopelia capicola</i>	Food and pet	Least concern
22.	Burung Murai Kampung	Oriental Magpie Robin	<i>Copsychus saularis</i>	Food, entertainment and belief	Least concern
23.	Burung Pekaka Dusun (Raja Udang)	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Belief	Least concern
24.	Burung Punai Tanah	Emerald Dove	<i>Chalcophaps indica</i>	Belief and food	Least concern
25.	Burung Puyuh	Barred Buttonquail	<i>Turnix suscitator</i>	Food	Least concern
26.	Burung Ruak-Ruak	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Food	Least concern
27.	Burung Tekukur	Spotted Dove	<i>Spilopelia chinensis</i>	Pet, food and belief	Least concern
28.	Burung Tiung	Common Myna	<i>Acridotheres tristis</i>	Food and pet	Least concern
29.	Burung Tuwu	Asian Koel	<i>Eudynamis scolopaceus</i>	Belief	Least concern

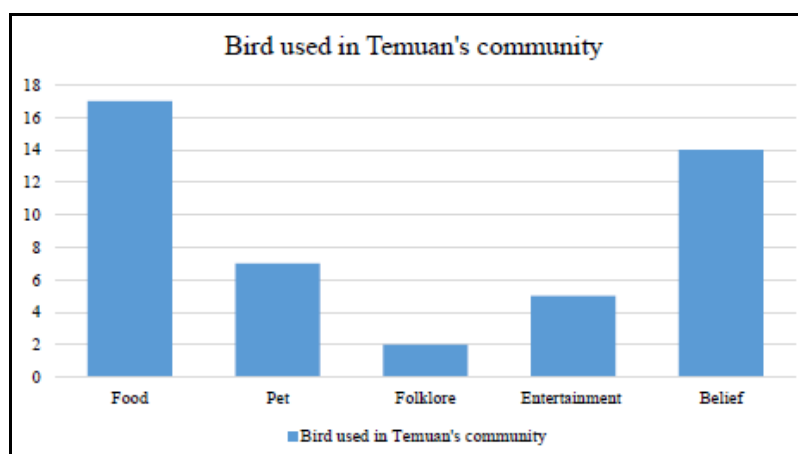


Fig. 2 - Summary of bird uses by Temuan community

4. Discussion

Most of the information gathered from the survey and interview is from male and elder people. Male are more knowledgeable about forest products compared to females as they are the ones who is responsible to collect the natural resources from the forest including birds for their family uses. In terms of ethno-ornithology knowledge, elder people give more information about the uses of birds in their life and culture compare to the younger people. Young people of the Temuan community stated that most of the information was passed down to them from their elderly. This cultural transmission from the elderly to the young generation is crucial as it determines whether the traditional knowledge will remain in the community for a long time until no one ever remembers the knowledge and it will erode days by days. The erosion of traditional knowledge by local people also occurs because of modernization/ urbanization [17]. Most of the Temuan community still believe in their ancestor's beliefs and they still practice it in their daily life.

In terms of uses of birds, majority of respondent stated that bird is used as their sources of food (16 out of 29 bird species listed in Table 2). Although the bird is one of their food sources, from the interview, the Temuan community believes that they should not consume all the captured individual birds. Few will be released to ensure the species can

still sustain in its natural habitat. Among all the birds, Barred Buttonquail (*Turnix suscitator*) and White-breasted Waterhen (*Amaurornis phoenicurus*) are their favorite because both species are easily found around their settlement. All the birds recorded as food are listed as the least concern. This proved that the Temuan community has high awareness about the conservation of birds as they will not consume birds that are hard for them to see such as Malaysian Peacock-pheasant (*Polyplectron malacense*). They mentioned that for them to see this bird, they need to go deeper into the forest. Other than rarity, ‘taboos’ also play a role for food selection. For example, they believe that they should not overeat Red Junglefowl (*Gallus gallus*) as this species will bring bad luck to those who overeat the species. In a positive way, this ‘taboos’ play a major role in bird conservation. It enables people to conserve biodiversity out of respect of traditional norms [18]

The second highest use of birds in the Temuan community is in the culture/belief. They believe that birds play roles as an indicator of time, for signs of good and bad luck. For example, Asian Emerald dove (*Chalcophaps indica*), kingfisher (*Halcyon smyrnensis*), Black-and-crimson Oriole (*Oriolus cruentus*), and Asian Koel (*Eudynamis scolopaceus*) will bring bad luck to them if the birds sing nearby their house. Moreover, Malaysian Peacock-pheasant (*Polyplectron malacense*) and oriental magpie-robin (*Copsychus saularis*) are used as indicators of time. Malaysian Peacock-pheasant (*Polyplectron malacense*) will sing 4 times a day indicating morning, afternoon, and late evening time. Besides that, the Temuan community also believes that if they hang the foot of a Short-eared owl (*Asio flammeus*) in front of their house door, this will chase the bad spirit away from their house. A similar situation reported by [19] in which Indonesia people believed that Barn Owl (*Tyto alba*) will bring bad luck and disease if they stop by their house.

Temuan community also kept birds as their pet. Seven out of 29 species listed in Table 2 were kept as birds including owl, myna, and dove. They choose birds as pets because of their beauty and also their ability to entertain the owner. This is supported by [20] who stated that birds are often caught because of their charm, particularly docility, beauty, and ability to imitate sounds, including human voices. Unfortunately, their popularity as pets has widely been recognized as one of the primary factors in sharp population declines among many species [21][22][23][24].

From the survey, the majority of the Temuan community did not use birds as a source of treatment for medicinal purposes. Previously, they used Greater Coucal (*Centropus sinensis*) as the medicine to treat broken bones but nowadays the practice has been discontinued because the population of the birds has been decreased and this will threaten the bird population. Temuan people will give domesticated fowl or Ayam Kampung (*Gallus gallus domesticus*) to the midwife in return for taking care of the wife during the postnatal period. This species acts as a symbol of blood replacements for the wife after giving birth. Consumption of birds for food and medicine has facilitated the transmission of serious and widespread zoonoses, such as tuberculosis or rabies. Avian influenza (Influenza A) viruses are responsible for highly contagious acute illness in humans, pigs, horses, marine mammals, and birds, occasionally resulting in devastating epidemics and pandemics [25].

5. Conclusion

This study proved that the Temuan community in Ledang, Johor still practiced ethno-ornithology knowledge in their life. They use birds for various purposes such as food, belief, pet, and many more. Temuan community has high conservation awareness for bird species. Most of the birds used are least concerned. Only Malaysian Peacock-pheasant (*Polyplectron malacense*) and Waterfall Swift (*Hydrochous gigas*) are listed as near threatened and vulnerable. Both species are not used as food and pet which means that they do not consume the birds. They believed that it is their responsibility to conserve the threatened bird species. Furthermore, the ethno-ornithology knowledge practiced by the Temuan community was passed down to their younger generation and this prevents their traditional knowledge from being eroded by modernization or urbanization.

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