

Inventory of wildlife and endemic animal trade in Manokwari regency, West Papua

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Abstract: This study aims to inventory the trade of wildlife and endemic animals in Manokwari Regency, West Papua, to provide an overview of the economic value and types of animals traded. The method used is a survey method with purposive sampling, based on the presence of respondents who trade animals. Data were then analyzed descriptively from related reports. The results showed that there were 6 species of animals traded in West Manokwari District. The animals come from two classes: aves and mammals. There are four individuals of *Mino dumontii*, three individuals of *Electus roratus*, two individuals of *Cacatua galerita*, and two individuals of *Lorius lory*. While the mammal class has one individual of *Spilocus maculatus*, and one individual of *Sus scrofa*. Of the six types of animals, there are three species of wildlife including *Mino dumontii*, *Cacatua galerita*, and *Sus scrofa*. While the Papuan endemic animals found consisted of *Electus roratus*, *Lorius lory*, and *Spilocus maculatus*. This study is expected to assist authorities in identifying actions that need to be taken to reduce the negative impacts of wildlife and endemic trade in Manokwari Regency, West Papua Province.

Keywords: Conservation, Papua's endemic animals, the hunt, wildlife

Abstrak: Penelitian ini bertujuan untuk menginventarisasi perdagangan satwa liar dan satwa endemik di Kabupaten Manokwari, Papua Barat, guna memberikan gambaran tentang nilai ekonomi dan jenis satwa yang diperdagangkan. Metode yang digunakan yaitu metode survey dengan pengambilan sampel secara *purposive sampling*, berdasarkan adanya responden yang melakukan perdagangan satwa. Data kemudian dianalisis secara deskriptif dari laporan-laporan terkait. Hasil penelitian menunjukkan bahwa terdapat 6 jenis satwa yang diperdagangkan di Distrik Manokwari Barat. Satwa tersebut berasal dari dua kelas yaitu kelas aves dan mamalia. Terdapat empat individu *Mino dumontii*, tiga individu *Electus roratus*, dua individu *Cacatua galerita*, dan dua individu *Lorius lory*. Sedangkan kelas mamalia terdapat satu individu *Spilocus maculatus*, dan satu individu *Sus scrofa*. Dari enam jenis satwa, terdapat tiga spesies satwa liar diantaranya *Mino dumontii*, *cacatua galerita*, dan *sus scrofa*. Sedangkan satwa endemik yang ditemukan terdiri dari *Electus roratus*, *Lorius lory*, dan *Spilocus maculatus*. Temuan ini diharapkan dapat menjadi dasar bagi pengambilan keputusan konservasi yang lebih baik dalam upaya pelestarian dan pengelolaan perdagangan satwa di wilayah Kabupaten Manokwari.

Kata kunci: Konservasi, hewan endemik Papua, perburuan, satwa liar

INTRODUCTION

Indonesia's biodiversity, including the West Papua region, is one of the richest in the world. Indonesia has the second highest level of biodiversity in the world after Brazil (National Geographic Indonesia, 2019; Suryana & Antara, 2021). There are many species of wildlife and endemics that can be found in Indonesia. Wildlife is a type of animal that lives

in the wild without human intervention in its life process. These animals can be found in various natural habitats, such as forests, seas, grasslands, and various other geographical areas. Endemic animals, on the other hand, refer to animals that can only be found in certain geographical areas. Endemic animals usually develop and adapt to the unique ecological conditions in their native range. One famous example of an endemic animal is the *Kuskus*, which can only be found in Papua and its surroundings. Endemic animals have a higher conservation value because their existence is limited to a certain area, making them vulnerable to extinction due to habitat change, over-exploitation, and illegal trade.

Animals play an important role in preserving the balance of ecosystems around the world. They contribute to various aspects such as population regulation, seed dispersal, and biodiversity conservation. However, despite their importance, animals are often captured by humans and traded. Capture and trade of animals generally occur for economic reasons, where the benefits obtained depend on the development of the animal trade chain (Nijman et al., 2019). The pattern of animal trade will increase directly proportional to human population and economic growth, causing the consumptive needs of animals to increase (Gaulke & Fritz, 1998). Trade activities are now one of the main factors leading to species extinction and reduced animal biodiversity in Indonesia (Harris et al., 2017; Harrison et al., 2016).

Animal trade in Indonesia is a very serious problem because the country has several species of animals that are endangered due to trade, such as Bornean orangutans, Sumatran tigers, Sumatran rhinos, komodo dragons, birds of paradise, and others (Naiborhu, 2021). Not only does the trade damage ecosystems, it also worsens the conservation of endangered species. Indonesia, home to thousands of endemic species, including in West Papua, is particularly vulnerable to this trade. Many species are the main targets of the trade, whether for consumption, pets, or traditional medicine or art. As a result, these species are threatened with extinction, and the impact is felt in greater damage to local biodiversity.

One of the most obvious impacts of environmental change caused by the wildlife trade is the decline in the number and variety of wild animals (Almond et al., 2020). Currently estimated at seven teragrams (tg; 106 tons) of carbon, the global biomass of wild mammals is six times lower than the 40 tg recorded 100,000 years ago during the late pleistocene (Bar-On et al., 2018) and the decline is still accelerating. The main causes of current and future wildlife population declines are habitat loss and degradation, overexploitation, eutrophication, the spread of exotic species, climate change and their interactions with each other, as well as impacts cascading through trophic webs (Bakker & Svenning, 2018; Barnosky et al., 2016; Galetti et al., 2018). Increasing extinction rates in other species groups are a result of declining wild animal populations and functional diversity (Donoso et al., 2020).

Mangunjaya et al. (2014) explained that the Papua and West Papua regions have high biodiversity due to the diversity of ecosystem types such as coastal, lowland, low mountain

to high mountain. Papua is also one of the five regions that are centers of avifauna (Iyai et al., 2020; Pattiselanno et al., 2019). The more than 700 species of avifauna found in the Papua region are categorized into four groups: 40 seabirds, 56 birds that migrate from north of the equator, 34 waders, and 578 species that breed on land and in freshwater (Iyai et al., 2020). Endemic animals in West Papua are increasingly threatened by trade. This is because government regulations on animal protection have not accommodated trade provisions, leading to rampant illegal trade in Papuan animals (Kawulur et al., 2024). Some of Papua's endemic species that are the object of illegal trade are pig-snouted turtles in Asmat (Triantoro et al., 2017); deer, wild boar, *mambruk* birds, and tree kangaroos in Tamberauw (Madubun et al., 2024). In Manokwari District, West Papua, there is also a trade in wildlife and endemics. There are 5 (five) classes of animalia traded in Manokwari, namely aves, reptiles, mammals, mollusks, and crustaceans (Fatem et al., 2021).

Research on wildlife and endemic animal trade inventories is essential to provide a snapshot of the state of the animal trade. By documenting the types of animals involved in the illegal trade, as well as the routes and scale of the trade, this research can provide a basis for formulating more effective protection policies for local ecosystems. In addition, the results of this study are expected to assist authorities in identifying actions that need to be taken to reduce the negative impacts of wildlife and endemic animal trade in the Manokwari Regency area of West Papua Province.

METHOD

The research was conducted in February - March 2024 in Manokwari Regency, West Manokwari District. The sampling location was determined by purposive sampling method, based on the presence of respondents who conduct animal trade. The data used were primary and secondary data. Primary data included species, number of animals, and selling price. Primary data was collected through observation and interviews with animal traders. The interviews were semi-structured. Secondary data were data on the conservation status of animals obtained from the international union for conservation of nature (IUCN). The data will be presented in tables and analyzed descriptively. The variables to be analyzed include the type of wildlife and endemic animals traded, the origin of the animal suppliers, and the conservation status of the traded animals.

RESULTS AND DISCUSSION

The wildlife and endemic animal trade inventory study was conducted at several locations where wildlife trade was found in Manokwari Barat District, Manokwari Regency. These locations included Wosi, Marina, Amban, and Sanggeng markets. There were 2 classes of animalia found in this study, namely aves and mammals.

Table 1. Inventory results of wildlife and endemics traded in Manokwari Regency

No	Local Name	Scientific Name	Conservation Status IUCN	Endemic Status	Number of Individuals	Selling Price / individual (IDR)
1	Burung jalak (Yellow faced-myna)	<i>Mino dumontii</i>	Least concern	-	4 Individuals	250.000
2	Nuri bayan	<i>Eclectus roratus</i>	Least concern	Papua endemic	3 Individuals	130.000
3	Kakatua koki	<i>Cacatua galerita</i>	Least concern	-	2 Individuals	250.000
4	Kasturi kepala hitam	<i>Lorius lory</i>	Least concern	Papua endemic	2 Individuals	500.000
5	Kuskus tutul	<i>Spilocuscus maculatus</i>	Least concern	Papua endemic	1 Individual	500.000
6	Babi hutan	<i>Sus scrofa</i>	Least concern	-	1 Individual	1.000.000

Based on Table 1, it can be seen that there are 6 species of animals traded in West Manokwari District. The animals come from two classes, namely aves and mammals. There are four species from the aves class, including *Mino dumontii* totaling four individuals, *Eclectus roratus* three individuals, *Cacatua galerita* two individuals, and *Lorius lory* two individuals. While the mammal class has two individuals, namely *Spilocuscus maculatus* 1 individual, and *Sus scrofa* 1 individual. Of the six types of animals, there are three wildlife species, namely *Mino dumontii*, *cacatua galerita*, and *sus scrofa*. While endemic animals found are *Eclectus roratus*, *Lorius lory*, and *Spilocuscus maculatus*. The animals from the aves class were all alive when traded. The mammal class that was sold alive was *Spilocuscus maculatus*. While *Sus scrofa* was not alive and had been cut into several parts.

Overall, the status of traded animals according to the international union for conservation of nature (IUCN) is least concern (LC). Least concern status indicates that these species have been evaluated and are still quite widespread (Hanif, 2015). However, the role of conservation of LC animals remains important to balance the ecosystem, prevent potential changes in status, and maintain genetic diversity. Animals, both as individuals and in groups, are part of the ecosystem and play a role in preserving the natural order of processes. In the food pyramid, animals are the primary consumers, second, third, and so on. Therefore, these creatures will depend on each other for their existence, and a decrease in any one of their numbers will adversely affect the sustainability of the food web and hinder efficient energy exchange and cycling (Mangunjaya et al., 2017).

The type of animal with the highest number is in the aves class with a total of 11 species, and followed by the mammal class of 2 species. The high species of the aves class is because aves are one of the classes with the highest level of species diversity in *Gunung Meja* Nature Park, Manokwari (Morip et al., 2022). According to Pattiselanno et al. (2011) in *Gunung Meja* Nature Park (TWAGM) there are 45 bird species from 22 families. The level of connection between the community and this place is also very high due to its easy accessibility and its position within Manokwari city. This is indicated by the fact that the area is directly adjacent to four villages: Amban, Pasir Putih, Padarni, and Manowari Timur (Morip et al., 2022).

The ease of access to Gunung Meja Nature Park has led to an increase in local community activity to capture and trade endemic Papuan birds for both local consumption and trade outside the region. This is due to its charm and economic benefits. According to Hasui et al. (2024), geographical range or environmental suitability influences species fragmentation in a habitat. Large animals such as aves and mammals are often the focus of conservation strategies and public awareness campaigns (Berti et al., 2020). They can also serve as ambassador species, acting as an umbrella for the multiple benefits of ecosystem protection.

Based on interviews with animal traders, it was found that all wildlife and endemic species sold come from Manokwari Regency. The traders obtain the animals by setting snares in the forest. The snares are set to catch birds, but spotted cuscuses get entangled. Kuskus are marsupials, endemic to Papua, Papua New Guinea and Australia. According to Fatem et al. (2021), Hunting is carried out using conventional weapons such as arrows, spears, and contemporary weapons such as air rifles. Meanwhile, the transportation of animals to the trading place is generally done by land using cars and by sea using ferries. Interviews revealed that sales are made directly by poachers without going through a collector. The hunting system that occurs can result in losses related to socio-economic and ecological factors, whether using environmentally friendly methods and hunting equipment or using methods that are less environmentally friendly.

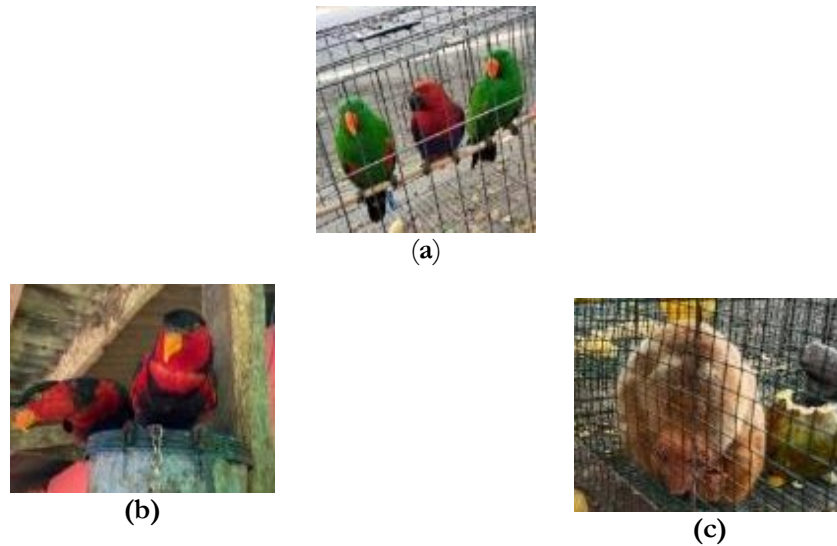


Figure 1. Traded endemic animals: (a) *Nuri Bayan* (*Eclectus roratus*); (b) *Kasturi Kepala Hitam* (*Lorius lory*); (c) *Kuskus Tutul* (*Spiloglossus maculatus*).

These environmentally destructive hunting methods have the potential to reduce the number of natural animals such as birds and cuscuses. Reduced numbers of animals in the wild lead to changes in forest composition as a result of food chains, physical disturbances, or obstruction of the seed dispersal process by seed-dispersing birds or cuscuses (Luskin et al., 2019; Tagg et al., 2020). Wildlife is usually traded by local communities to fulfill their financial needs and not for commercial gain. Poachers and traders may be given the opportunity to engage in this activity because of the income it brings. There are reports that this trade is still ongoing, albeit at a lower intensity and with less visibility, despite the known conservation status of some protected species. Nonetheless, given that West Papua Province is now recognized as a Sustainable Province with a protected function, this practice may be brought under control. Therefore, it is crucial to consider various factors when prioritizing conservation efforts, such as sustainable development goals, biodiversity conservation and restoration, climate change mitigation and adaptation, and protection of ecosystem services (Malhi et al., 2022).

CONCLUSION

This study concludes that in Manokwari Barat Sub-district, Manokwari Regency, West Papua Province, there is a trade in wild and endemic animals. The wild and endemic animals sold come from the aves and mammals classes with a composition of 3 endemic animal species and 3 wildlife species. According to IUCN data, the conservation status of all

traded animals is Least Concern, but conservation is still needed to balance the ecosystem, prevent potential changes in status, and maintain the level of genetic diversity of animals.

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