# CHAPTER I. INTRODUCTION

## 1.1 Background

Indonesia is a country with six species of small wild cats. Its diversity on each island is different, five species in Sumatra, five species in Borneo, and one species in Java. Small wild cats have an important role in occupying a position as apex predators in the middle trophic. Researches regarding small wild cats are limited and only receive around 1% of conservation funding compared to more popular big cats such as tigers and leopards (Mugerwa et al. 2020). Small wild cats face the same threats as large wild cats from human activities such as habitat fragmentation. According to Izawa et al. (2009), rapid and appropriate conservation action is needed to protect small wild cats against threats arising from the increase of human needs.

Sunda leopard cat (*Prionailurus javanensis*; Desmarest, 1816) is one of Indonesia's small wild cats. Sunda leopard cat is a new species that is genetically separated from asian leopard cat (*Prionailurus bengalensis*; Kerr, 1792) in mainland Asia (Kitchener et al., 2017; Dhendup, 2022). Based on the results of genetic and phylogeographic structure analysis, sunda leopard cats which are spread around Indonesia, Malaysia (Sarawak), and Philippines are genetically separated from asian leopard cats (Patel et al., 2017). Sunda leopard cats have relatively smaller body size with less thick fur than asian leopard cats (Mohamed et al., 2013). Sunda leopard cats have narrower and lower skulls (Sicuro & Oliveira, 2015) Renewed research on sunda leopard cats is needed as additional data on new species (Irawan et al., 2020).

The asian leopard cats status is listed as Least Concern by IUCN RedList on August 5, 2022. However, there has been no recent status update for sunda leopard cat by the IUCN RedList (Ghimirey et al. 2022). This separation is in line with the statement of Kitchener et al. (2017), in the taxonomic revision of Felidae 2017. In addition, according to the CITES Trade Database (2023), sunda leopard cat has been included in the Appendix II category so hunting and wild trade are prohibited. This cat faces a serious threat of extinction from poaching and the illegal pet trade (Nijman et al., 2019).

The sunda leopard cat is an active nocturnal animal with an active time range recorded in the plantation from 18.00-06.00 WIB. These cats have a variety of prey types such as Rodentia, Aves, and Amphibians with Rodentia making up 75% of the total diet (Putra, 2016). Sunda leopard cats are small wild cats commonly found in forest edge areas adjacent to human-modified areas. As reported by Dhendup (2022) and Van der Meer et al. (2023), these cats can be found in unprotected areas, agriculture, plantations (oil palm and sugar cane), and live close to areas of human dominance (rural settlements). These cats are thought to nest in bushes that are rarely traveled by humans and actively forage in agriculture or plantation areas. According to research by Chen et al. (2016) in Taiwan, these cats actively search for prey in agricultural areas by avoiding humans in the area. The type of prey and behavior of this cat is very supportive for living in areas with human activity.

Agricultural areas emerged as a result of human efforts to meet daily needs by utilizing biological resources. According to Andriansyah et al. (2019), land clearing from forest to agricultural area is a form of effort to improve people's lives. This land

clearing has an impact on animal habitats that become separated. According to (DeStefano and DeGraaf, 2003), land clearing for agriculture and settlements has continued to grow since long ago with various threats. However, experts are beginning to think that agricultural and residential areas, which were once considered man-made, are now part of the natural ecology of rural ecology. Animals in these areas benefit from having enough space, resources, and protection to adapt. Some animals have even made rural areas their primary habitat rather than their native habitat.

The presence of animals in a habitat is strongly influenced by the availability of sufficient resources to fulfill life needs. The presence of animals in agricultural areas makes rural ecology a unique ecosystem. For example, many little egrets are found in rice fields looking for food (DeStefano and DeGraaf, 2003). The presence of animals in agricultural areas can be done with ecological and social approaches. Ecological approaches such as directly observing the tracks left behind and using auxiliary tools such as camera traps and social approaches by conducting interviews with local people who move close to animal habitats. This idea is supported by Arida et al. (2018), who found that determining the presence of nocturnal animals can be challenging and may require paying attention to signs of their activity.

Batu Taba Village, located in the Ampek Angkek Sub-district of Agam District, West Sumatra Province, encompasses an area of 376 hectares. Within this expanse, it comprises 118 hectares of rice fields and 56.9 hectares of dry farmland. Notably, this village lacks forested areas and relies on two small rivers originating from Mount Marapi to irrigate its rice fields. Remarkably, the rice fields account for

one-third of the village's total land area (Gusneli, 2023). Rice cultivation in Batu Taba Village unfolds with a unique pattern: various rice fields do not synchronize in terms of planting seasons, resulting in the coexistence of rice plants at different growth stages throughout the village. This diverse agricultural landscape, predominantly shaped by rice farming, may create a conducive environment for the presence of sunda leopard cats. The presence of sunda leopard cat in rice fields is supported by information from farmers and communities around agricultural area of Batu Taba Village. Previous research in other rice field show there is the presence of sunda leopard cats in Lubuk Alung Sub-district by using a camera trap (Ma'ruf, 2020).

Shanida et al. (2018) conducted a parallel study focusing on the distribution of sunda leopard cats within the non-conservation forest area of Cianjur. Their research yielded numerous findings of sunda leopard cats through observations, track records, fecal samples, and camera trap documentation across diverse habitat types. Additionally, Srivathsa et al. (2015) estimated population sizes of leopard cats in Western Ghats using camera surveys. This research provides critical information on the conservation of leopard cats and the need for habitat buffers.

Lorica and Heaney (2013) researched the distribution of tracks from sunda leopard cats in sugar cane plantation areas within the Philippines. The results showed that the sunda leopard cat had remarkable adaptability in the agricultural area of sugar cane by preying on rats that were pests of sugar cane. Significantly, traces of these cats' activity were discovered near areas frequented by humans, bolstered by supplementary insights shared by the local community. Moreover, Lorica and Oliver

(2006) conducted interviews with farmers and communities around sugar cane plantations in Negros, Philippines regarding the presence of sunda leopard cats. It was found that this cat is not only limited to forest but also inhabited plantation areas located far removed from the forested habitat.

Based on this description, the researcher intends to determine the presence and farmer's perception of sunda leopard cats in agricultural areas in Batu Taba Village, Agam District through this research. The presence of sunda leopard cats can be known by looking through camera traps, activity signs and extracting information from the perceptions of farmers and communities around the agriculture. This research is expected to provide information on the presence of sunda leopard cats in agricultural areas and become a scientific reference in further research on sunda leopard cats in Indonesia, especially in West Sumatra.

### 1.2 Problem Formulation

Based on the description above, the problems to be answered in this study can be formulated, namely:

1. What is the status of sunda leopard cat presence in agricultural area of Batu Taba Village?
2. How do farmers perceive the presence of sunda leopard cat in agricultural area of Batu Taba Village?

## 1.3 Research Objectives

The objectives of this study are:

1. To determine the status of the presence of sunda leopard cats in the agricultural area of Batu Taba Village.
2. To find out the farmers' perceptions of the presence of sunda leopard cats in the agricultural area of Batu Taba Village.

## 1.4 Benefits of Research

The results of this study are expected to serve as a foundation for compiling further research on the sunda leopard cat in agriculture. Furthermore, this research is anticipated to serve as a valuable point of reference in developing conservation plans regarding sunda leopard cats and other small carnivores inhabiting agricultural areas across Indonesia.