

# **Habitat Characteristics of Sumatran Elephants (*Elephas maximus sumatranus*) in Buluh Cina Nature Park, Kampar Regency, Riau**

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## **Abstract**

Bulu Cina Nature Park (TWA) is conservation area located in Kampar Regency, Riau. Selection habitat characteristics of Sumatran Elephants can be done by considering various factors such as canopy cover, food availability, water availability as a drinking source. The study aimed to determine habitat characteristics of Sumatran Elephants (*Elephas maximus sumatranus*) in Buluh Cina Nature Park (TWA). This research was conducted in July - August 2024. Data collection in observing habitat characteristics of Sumatran Elephant using purposive sampling method and analyzed qualitatively. Buluh Cina Nature Park (TWA) has a land elevation of 35 above sea level with a land slope of about 15% or 8°. Habitat characteristics in Buluh Cina Nature Park (TWA) are composed of secondary forest areas that still have various types of plants (*Calamus manan* (Rattan), *Phyllostachys aurea* (Bambu Pancing), *Ipomea lacunose* (Bintang Putih) and *Carex sylvatica* (Grasses)) and can be used as the main food for elephants. TWA Buluh Cina area has moderate canopy cover that is used as a place for elephants to take shelter from the sun and there are many puddles (where elephants wallow) and water sources.

Keywords: Sumatran Elephants, characteristics, habitat, Bulu Cina Nature Park (TWA)

## **Introduction**

Buluh Cina Village is one of the villages located in Siak Hulu Sub-district, Kampar Regency, Riau Province. Buluh Cina Village is Tourism Village that has the beauty of tropical forests and has the beauty of seven lakes. Nature tourism presented in Buluh Cina is in the form of beautiful forests, lakes, diverse flora and fauna, one of which is the Sumatran Elephant. The seven lakes in Buluh Cina Village include Tanjung Putus Lake, Baru Lake, Pinang Luar Lake, Pinang Dalam Lake, Tuok Tonga Lake, Tanjung Balam Lake, and Rengas Lake (Tazri *et al.* 2021).

Bulu Cina Nature Park (TWA) is a conservation area under the supervision of the Riau Natural Resources Conservation Center (BBKSDA). Bulu Cina Nature Park (TWA) is a community land donated to the government without compensation and then managed by BBKSDA based on Riau Governor Decree No. Kpts.468/IX/2006. The establishment of Buluh Cina Wildlife Reserve was ratified based on the Minister of Forestry's decision No. 3587/Menhut-VII/KUH/2014 on May 2, 2014. Area of Bulu Cina Nature Park (TWA) is 963.33 hectares with various types of flora and fauna, one

of which is the Sumatran Elephant (BBKSDA Riau, 2018).

Sumatran Elephant (*Elephas maximus sumatranus*) is one of elephant species that live in Indonesia. Difference between Sumatran Elephants and other Asian Elephants is number of ribs. Sumatran Elephants consist of 20 pairs while other Asian elephants consist of 19 pairs (Anita *et al.* 2018). Existence of elephants is currently experiencing extinction. Extinction occurs due to human actions and natural disasters. Based on the conservation status of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, Sumatran Elephant is included in Critically Endangered species and Appendix I based on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Sumatran Elephants are one of key species in the wild that must be preserved, because elephants have an important role in maintaining balance of the ecosystem.

According to the Big Indonesian Dictionary (KBBI 2016), characteristic is something that has a distinctive nature. Habitat characteristics are defined as a habitat that has certain characteristics chosen by an organism to survive. In an effort to survive, an organism needs supporting factors in order to adapt to a particular habitat. Elephant habitat is very influential in the survival of Sumatran elephants. Elephants have sensitivities that make them selective in choosing their habitat (Abullah *et al.* 2013). But, over time the existence of elephants is decreasing due to the loss of the original habitat of the elephant (Winarno *et al.* 2024). Therefore, it is necessary to know the characteristics of elephants and know the strategies so that elephants can adapt in limited habitats and resources. This observation was carried out to find out the characteristics of the elephant habitat in Buluh Cina Wildlife Park which is able to become a habitat for the Sumatran Elephants.

### Research Method

The research was conducted in July-August 2024 at Buluh Cina Nature Park (TWA), Siak Hulu District, Kampar Regency, Riau (Figure 1).

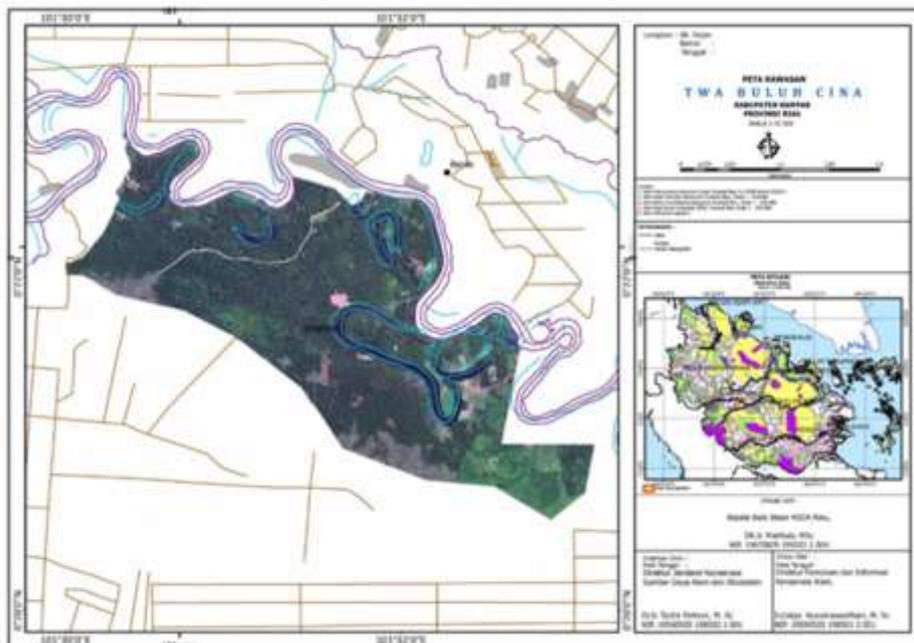


Figure 1. Maps of Buluh Cina Nature Park (TWA) Kampar Regency, Riau

### Materials and Tools

Materials and tools used are Two domesticated Elephants, Smartphone, Stationery, books, Avenza Maps and ArcGis.

### Research Procedures

Planning for data collection activities of observing Sumatran elephant habitat characteristics with mahots (keepers) and Sumatran elephant responsibility coordinators. Data collection in observation habitat characteristics of Sumatran Elephant, which uses the Purposive Sampling method, where data will be taken by exploring locations that are the home range of Sumatran Elephants (*Elephas maximus sumatranus*). Variables will observer 7 variables such as forest types, canopy cover, forage availability, tree availability for mineral sources, tree availability for body scrubbing, altitude, slope and distance to water source. Data will be analyzed descriptively.

### Results and Discussion

The result of the research is that there are footprints and feces of Sumatran elephants along the delivery route. The forest was chosen to be the elephant's habitat (Figure 4.1). During the observation, the path taken has been tracked to know the distance where the elephant rests at night and the distance of the elephant when in the forest (Figure 4.2). Based on the results obtained, it shows that Sumatran Elephants life in Buluh Cina Nature Park (TWA) in secondary forest types (Figure 2).

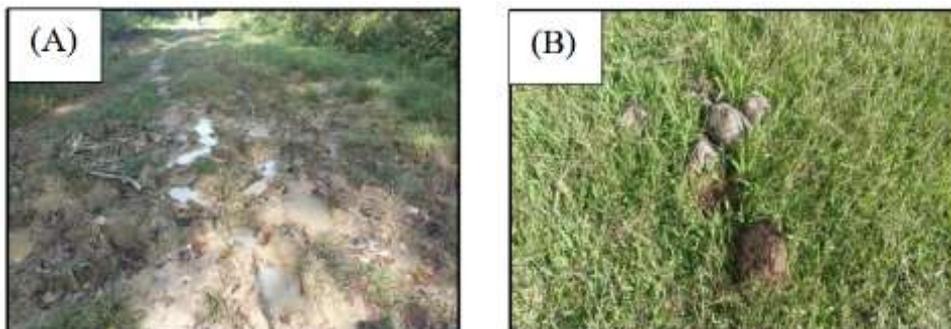


Figure 2. Observation of elephant tracks (A) Elephant footprints; (B) Elephant feces

The observed forest is a forest that has experienced the effects of humans, such as logging and fires. Secondary forests are forests formed due to human activities such as logging, which results in a decrease in biodiversity (Karmilasanti & Fajri 2020). Secondary forests that are still preserved will still be able to support plenty of food for elephants. In addition to observing habitat type, there is canopy cover, food availability, and the availability of plants that contain water.

The canopy cover preferred by elephants is moderate, which means that the canopy cover found is not too dense and not too sparse (Figure 3). Canopy cover is used by elephants for shelter from sun. This is what determines canopy cover is one of the assessments in this observation. The presence of canopy cover will make the elephant comfortable. Canopy cover is proportion of the forest floor that includes the vertical projection of the tree crown (Hermawan et al. 2019). Elephants need areas that have good crown cover as a shelter because elephants are one of the wild animals that cannot

stand the heat of the sun (Gezali et al. 2018) So from this it is known that the forest can be used as a natural habitat for elephants placed in Buluh Cina Nature Park (TWA).

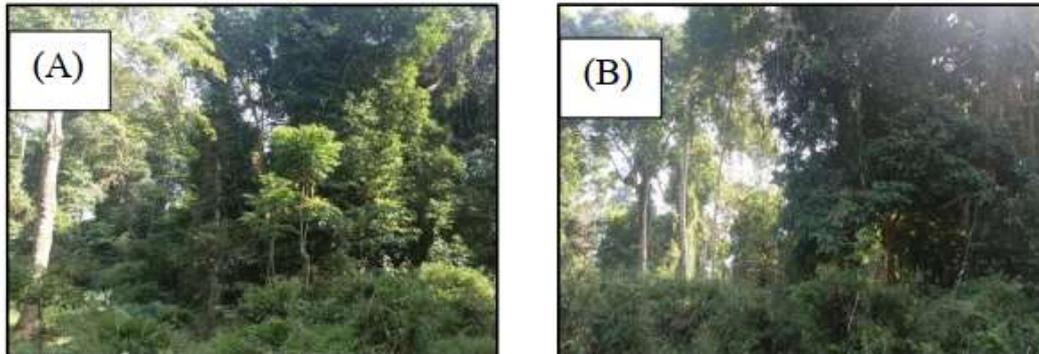


Figure 3. Elephant habitat conditions (A) Secondary forest; (B) Less dense canopy cover

The availability of food found in the habitat has a lot of food availability. Food availability is important for elephants to supply nutrition for elephants. However, not all types of plants are eaten by elephants. Elephants are one of the animals that consume various types of plants and are needed in large quantities. Food is chosen by elephants consisting of grass, shrubs, tree leaves, bark, aquatic plants and fruit (Sugiyanto et al. 2017).

The availability of food is important in determining habitat of Sumatran Elephants. Elephants need food in large quantities so that if the food available in the forest is insufficient, manager of Buluh Cina Nature Park (TWA) provides supplies from outside. Additional feed provided by manager of Buluh Cina Nature Park (TWA) can be in the form of fruits (pineapple, banana, etc.). Elephant pudding made by manager of Buluh Cina Nature Park (TWA) from pellets, bran, water, corn, brown sugar, salt, and rice. Based on the results of interviews with elephant keepers, elephant pudding is given to elephants once a month which is useful for endurance of elephants body. According to Lekagul & McNeely (1977), Sumatran Elephants need a sufficient amount of food in form of green plants because the digestion of elephants is not perfect, so they need to feed about 200-300 kg of biomass per day for an adult elephant or about 5-10% of the elephant's weight.

The types of plants consumed by elephants are *Calamus manan* (Rattan), *Phyllostachys aurea* (*Bambu Pancing*), *Ipomea lacunose* (Bintang Putih) and *Carex sylvatica* (Grasses) (Figure 4). In observations made around elephant habitat, no plants containing minerals were found. The availability of mineral-containing plants is something that elephants need. This is because elephants need mineral salts to carry out their exploring activities. Minerals needed by elephants are calcium, magnesium and potassium. Elephants that experience mineral deficiencies will search for these minerals in the soil. Elephants will eat thorny rattan stems to injure their mouths and lick the soil to fulfill their need for minerals (Resphaty et al. 2015).

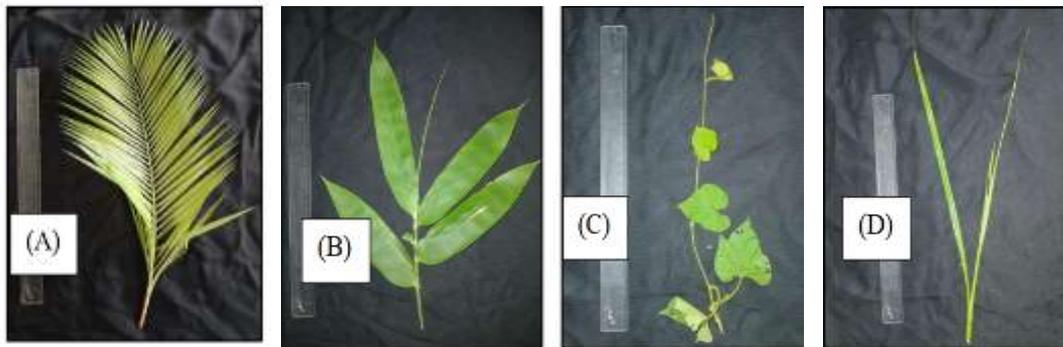


Figure 4. Types of plants consumed by elephants; A). *Calamus manan* (Rattan), B). *Phyllostachys aurea* (*Bambu Pancing*), C). *Ipomea lacunose* (*Bintang Putih*) and D). *Carex sylvatica* (*Grasses*)

Another thing that needs to be considered is availability of body scrubbing trees for elephants. Body scrubbing trees are needed as a form of elephant behavior in caring for themselves by protecting their skin from ectoparasitic insect bites (Afifah 2021). Insects are similar to flies that are parasitic and can suck the blood of elephants (Rakhmawati 2014). In addition, altitude and slope of the land is one of variables support the survival of Sumatran elephants. Buluh Cina Nature Park (TWA) has a flat topographic condition with a land elevation of 35 ASL and a land slope of about 15% or 8°. This is something that is favored by elephants because the elephant's body is large so it requires areas that tend to be flat in order to move freely (Abdullah et al. 2013).

Elephant's distance from water source must also be taken into account. Buluh Cina Nature Park (TWA) can find two water source locations on path taken. Distance of the elephants to first water source is 1.04 km and the second location is 0.22 km. This is good place for elephant habitat, because the location of the water source can be reached by the elephant. The distance of elephants to water sources is taken important, because the main factor for elephants in maintaining life is to be able to drink, process food, and clean the body (wallowing) (Rohman et al. 2019).

### Conclusion

The conclusion of this research is Buluh Cina Nature Park (TWA) is a secondary forest area and has various types of plants so that elephants have a lot of food. Buluh Cina Nature Park (TWA) has a middle canopy cover that serves as a place for elephants to take shelter from the sun and there are also puddles as a place for elephants to wallow and drink water. Buluh Cina Nature Park (TWA) has a land elevation of 35 ASL with a land slope of about 15% or 8°. There are some things that are not obtained by elephants such as plants that contain minerals and several other things. These are provided to the elephants by the resort managers so that the elephants can survive.

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