The role of environment restoration on microclimate sustainability in Perumahan Cemara Asri Medan

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Abstract. The outdoor recreation built meaning, function, values, and norms to landscape activity in one area. Besides, it created a comfortable nuance for the visitors and the residents at Perumahan Cemara Asri, Medan, due to maintaining the microclimate in this area. The Landscape of Taman Burung in Perumahan Cemara Asri Medan is outdoor recreation located in the center of urban residence. It maintains a microclimate for the residents and visitors. Hence they feel comfortable. The presence of prohibition boards in outdoor recreation informs the essential meaning and value of outdoor recreation. This study aimed to analyze the role of the verbal and visual signs toward microclimate maintenance at Taman Burung Cemara Asri, Medan. It was a qualitative study, and the ethnography method was applied to collect and analyze the data. The data were verbal and visual signs in outdoor recreation at Taman Burung Taman Burung Cemara Asri, interview, and participant observation. It is known that the verbal and visual signs have an important role for human activity (visitors and residents) related to their behavior in treating the environment well. Maintaining the condition of the physical elements of the micro-climate creates comfort for visitors and residents at Taman Burung Cemara Asri Medan.

1. Introduction
The climatic conditions in outdoor recreation are important for visitors to get comfortable while at the location. Climate and weather are important factors in tourists' decision-making. Thus, there is an effort to create microclimate maintenance in outdoor recreation to make the visitors feel comfortable in the urban [1]. The existence of outdoor recreation is strongly influenced by elements that support a good microclimate. Outdoor recreation is closely related to local microclimate conditions, so it is important to understand the factors that influence microclimate conditions in creating a comfortable environment. These factors can be broadly divided into two, namely climatic factors and physical factors. Especially for climatic factors, which affect the microclimate in outdoor spaces, are air temperature, humidity, wind speed, precipitation, and radiation [2]. Due to the imperfect physical condition of the area, the owner makes efforts to support these five factors to convey a message to visitors and residents to participate in maintaining this condition. For example, the visitors are
prohibited from parking their motorbikes on the tree roots. This prohibition is often found in writing and images/symbols or a combination of both in a banner, poster, or banner. The posts and pictures are generally written in Indonesian with the hope that multi-ethnic visitors can understand the message conveyed [3].

The owner, Mr. Anif Shah, was concerned about the life of animals and plants in Taman Burung Cemara Asri. Taman Burung Cemara Asri is a form of Animal Park. The formation of this bird park began with many birds nesting in the swampy complex that had not been built. Migratory birds have also been found moving from Siberia and have now adapted to the climate in Medan. Taman Burung Cemara Asri is a form of Animal Park. The formation of this Bird Park began with many birds nesting in the swampy complex that had not been built. The manager of the Perumahan Cemara Asri Medan, Haji Anif Shah, allowed this, even spreading catfish seeds in the swamp where the birds nest as their food. Finally, more and more birds are nesting here. The number of birds here continues to grow every day to reach 5,000 birds of various types. Migratory birds have also been found moving from Siberia and have now adapted to the climate in Medan. History and memory explore economic, political, and social events that impact landscape vision and perceptions of the placement of people in planned settings [4]. "The goodness of nature feels so close, when humans are present as friends." The sentence was read when opening the book The Amazing Wings by H. Anif Shah.

The objective of this study was to expose the role of verbal and visual signs at Taman Burung Cemara Asri toward human compliance related to microclimate maintenance in outdoor recreation. One of the subject dimensions of human behavior is posed cues (creation of baseline data images, videos, speech samples, biometric data) result of baseline data giving extremities of behavior expression, such as neural face sleepy/alert face. This would set a scale for each individual, which would help to measure the degree of expression of a behavior [5].

2. Methods
The location of the study was in Taman Burung Cemara Asri. It is on Jalan Boulevard Timur No. 28A, Cemara Asri, Kecamatan Percut Sei Tuan, Kabupaten Deli Serdang, Sumatera Utara 20371. This research is qualitative, and the ethnographic method is used to collect and analyze the data. This analysis also discusses the multidisciplinary unity of landscape architects and landscape anthropologists to explain the role of verbal and visual signs in outdoor recreation on microclimate sustainability in Perumahan Cemara Asri Medan [6].

Figure 1. The location of Taman Burung Cemara Asri.
This study was the qualitative method. An ethnography model was applied to collect the data to the analysis [7] [8]. The data were verbal and visual signs in billboards, posters, flags, banners to conserve flora and fauna. The study was taken for three months, from June to August 2021.

3. Results and Discussion
The role of trees and water are the primary sources in maintaining the microclimate in the Taman Burung Cemara Asri Medan. Several types of trees that grow in this location include the Angsana tree (*Pterocarpus indicus*), mahogany, Norfolk spruce, shrimp fir, palm, breadfruit, and banana. The Angsana tree is the oldest and dominant tree in this area, while other trees such as cypress, banana, and breadfruit are planted trees. The breadfruit tree grew because the owner likes the tree. After all, it has memories from childhood. The function of various vegetation has formed the space to make the Taman Burung Cemara Asri shady and comfortable. Mahogany (*Swietenia mahagoni*) vegetation around the Taman Burung Cemara Asri, breadfruit trees (*Artocarpus altilis*). In addition to woody vegetation types, banana trees (*Musa paradisiaca*) and coconut trees (*Cocos nucifera L.*) are also planted so that the impression of a rural landscape is created around these tourist attractions [9].

![Figure 2. Angsana trees around the fish pond](image)

Some of the benefits of trees in a location, such as in outdoor recreation, are maintaining the climate because it protects from light, dust, stores water, and provides wind filtering. The ecological functions provided by plants are very important for the health of ecosystems in urban and rural areas [10]. Trees modify the climate and conserve the energy use of buildings in three main ways: a) shade reduces the amount of heat absorbed and stored by buildings. b) evapotranspiration converts water into water vapor and cools the air. c) tree canopies slow down winds, thereby reducing the amount of heat lost from the house, especially on objects with high conductivity (e.g., window panes). Furthermore, water at the Taman Burung Cemara Asri Medan is dominated by a large fish pond. This fish pond is surrounded by Angsana and Breadfruit trees. The presence of trees and water causes lower air temperature, sufficient humidity, adequate wind conditions, and precipitation. Green spaces are normally considered to help improve outdoor comfort by reducing air temperature [11].
To maintain the condition of the trees and water, prohibition signs were placed containing messages not to damage and endanger the situation of these two sources. The pool area is divided into two models, namely (1) fenced and equipped with paving blocks, (2) not fenced. Its formation and change were directly related to the material environment and the function of space in the city [12, 13].

![Fenced pool](image)

The visitors who enter this location are allowed to go around the park by car and motorcycle. For areas that have been fenced and paving blocks, visitors will park their vehicles in the parking locations that have been provided. In this area, visitors are warned not to disturb birds and fish, damage plants, and litter. The verbal sign as follow:

1. *Dilarang mengganggu burung/ikan dan merusak tanaman di areal ini* (Do not disturb birds/fish and damage plants in this area)
2. *Dilarang buang sampah ke kolam dan sekitarnya* (It is forbidden to litter into the pool and its surroundings)
Figure 4. Verbal signs in the banner at the unfenced pool.

In the area without a fence, the visitors are warned not to park their vehicles near the fish pond. It can damage the plants. The prohibition as follow: *Dilarang parkir* (Do not parking)

Figure 5. Verbal signs in the banner at the unfenced pool.

Based on figure 5, the sign was posted to warn the visitors not to park in this area to keep the plants around the fish ponds and tree roots. Verbal and visual signs in outdoor recreation use Bahasa Indonesia. They have the effect of pursuing the visitors to obey the messages regarding maintaining microclimate at Taman Burung Cemara Asri Medan. Since the signs were posted in posters and banners, the visitors primarily understood the message and followed it. Those who break the rule will be warned orally by the keeper, and it is such an shameful thing. The signs are for the visitors and the vendors who sell food, beverages, snacks, and pellet (fish bait). Verbal and visual signs in posters and banners are imperative sentences, especially commands in Bahasa Indonesia. The words and visible signs choices are common to understand by people in Indonesia generally. The use of the word *perhatian* (attention), *jangan* (don’t), and *dilarang* (forbidden). For visual signs, the symbol slash (/) refers to word “no” or “don’t” such as in do not park.

4. Conclusions

Based on the result, the prohibition boards at *Taman Burung Cemara Asri Medan* have put in particular areas categorized based on everyday things and protect the imperfect site. The prohibition relating to simple things covered the verbal and visual signs to warn the visitors not to disturb animals, damage the plants, and not litter. The prohibition regarding imperfect areas warns the visitors not to damage the root tree as a protection for the tree as one of the main factors in creating the microclimate in *Taman Burung Cemara Asri Medan*. It is known that the verbal and visual signs have an important role in controlling human activity in *Taman Burung Cemara Asri Medan* to participate in keeping the environment in outdoor recreation well toward the microclimate.

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