

## Pengaruh Kerapatan Vegetasi terhadap Variabilitas Cuaca di Kota Denpasar, Provinsi Bali = The Effect of Vegetation Density on the Variability of Weather Elements in Denpasar City, Bali Province

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### Abstrak

Penurunan luas RTH dan kerapatan vegetasinya dapat menimbulkan perubahan variabilitas unsur cuaca. Variabilitas unsur cuaca adalah perbedaan variabel unsur cuaca antara satu tempat dengan tempat lainnya. Unsur cuaca yang paling dipengaruhi oleh keberadaan vegetasi adalah suhu udara, kelembapan udara, serta kecepatan angin. Penelitian ini bertujuan untuk mengetahui distribusi spasial dari kerapatan vegetasi, suhu udara, kelembapan relatif, dan kecepatan angin di Kota Denpasar, serta menganalisis hubungan antara kerapatan vegetasi terhadap variabilitas unsur cuaca di Kota Denpasar. Kerapatan vegetasi didapatkan dari citra satelit Landsat 8 yang diolah dengan metode NDVI, sedangkan unsur cuaca didapatkan dari pengukuran langsung. Ditemukan bahwa kota Denpasar terbagi menjadi empat kelas kerapatan vegetasi dengan luasan: 43,8 km<sup>2</sup> (34,3%) berkerapatan jarang; 48,8km<sup>2</sup> (38,2%) berkerapatan sedang; 13,1 km<sup>2</sup> (10,3%) berkerapatan rapat; dan 21,9km<sup>2</sup> (17,2%) berkerapatan sangat rapat. Umumnya nilai suhu udara yang tinggi ditemukan di penggunaan lahan yang terbuka dengan kerapatan vegetasi jarang hingga sedang. Di wilayah penelitian ditemukan kecenderungan hubungan antara kelembapan dan kecepatan angin dengan garis pantai. Hubungan antara kerapatan vegetasi dengan suhu udara maupun kelembapan udara berkekuatan sedang, masing-masing di angka -0.473 dan 0.468. Hubungan antara kerapatan RTH dan kecepatan angin bersifat sangat lemah.

.....The decrease in the area of green open space and the density of the vegetation can cause changes in the variability of weather elements. Variability of weather elements is the difference in variable weather elements from one place to another. The weather elements that are most affected by the presence of vegetation are air temperature, air humidity, and wind speed. This study aims to determine the spatial distribution of vegetation density, air temperature, relative humidity, and wind speed in Denpasar City, and to analyze the relationship between vegetation density and the variability of weather elements in Denpasar City. Vegetation density was obtained from Landsat 8 satellite imagery which was processed using the NDVI method, while the weather elements were obtained from direct measurements. It was found that the city of Denpasar is divided into four classes of vegetation density with an area of: 43.8 km<sup>2</sup> (34.3%) sparse density; 48.8km<sup>2</sup> (38.2%) medium density; 13.1 km<sup>2</sup> (10.3%) is dense; and 21.9km<sup>2</sup> (17.2%) is very dense. Generally, high air temperature values are found in open land use with sparse to moderate vegetation density. In the research area, it was found that there was a tendency for a relationship between humidity and wind speed with the coastline. The relationship between vegetation density and air temperature and air humidity is moderate, at -0.473 and 0.468, respectively. The relationship between green open space density and wind speed is very weak.