

Sebaran Suhu Permukaan Daratan dan Hubungannya Terhadap Frekuensi Hujan Konvektif di Tangerang Raya = Distribution of Land Surface Temperature and Its Relationship to Convective Rainfall Frequency in Tangerang Raya

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Abstrak

Tren kenaikan suhu permukaan daratan akibat pemanasan global berdampak pada kondisi iklim di level mikro yakni perkotaan. Kenaikan suhu permukaan daratan berdampak pada semakin cepatnya laju evaporasi badan air dan transpirasi dari tumbuh-tumbuhan. Tingginya kadar uap air di atmosfer memicu terjadinya potensi hujan ekstrem di wilayah-wilayah yang mengalami pemanasan. Fenomena hujan ekstrem yang terbentuk dari hasil pemanasan permukaan bumi dikenal dengan istilah hujan konvektif. Penelitian ini dilakukan untuk mencari hubungan antara suhu permukaan daratan dengan frekuensi hujan konvektif dengan rentang tahun pengamatan 10 tahun yakni 2013 – 2022. Tujuan penelitian ini adalah menganalisis sebaran suhu permukaan daratan dan dampak kenaikannya terhadap frekuensi hujan konvektif di Tangerang Raya. Analisis data dalam penelitian ini dilakukan dengan analisis spasial dan korelasi. Hasil penelitian didapatkan sebaran suhu permukaan daratan di Tangerang Raya ditunjukkan dengan semakin tinggi nilai suhu permukaan daratan diikuti dengan penutup lahan berupa permukiman dan industri sedangkan semakin rendah nilai suhu permukaan daratan maka nilai tersebut menunjukkan wilayah penutup lahan berupa vegetasi. Kemudian hasil uji korelasi menunjukkan suhu permukaan daratan dan frekuensi hujan konvektif memiliki hubungan dengan 2 stasiun hujan di sisi selatan Tangerang Raya yang beradius 30 km dari laut. Hubungan tersebut berupa semakin tinggi luasan areal suhu permukaan daratan kelas sangat tinggi maka akan semakin tinggi frekuensi hujan konvektif. Hubungan antara kedua variabel memiliki nilai korelasi sebesar 0,597 dan koefisien determinasi sebesar 0,357.

.....The increase in land surface temperature due to global warming has an impact on micro-level climate conditions, particularly in urban areas. The increase in land surface temperature has an impact on the accelerated rate of evaporation of water bodies and transpiration from plants.. The high humidity in the atmosphere triggers the potential for extreme rainfall in regions experiencing warming. The phenomenon of extreme rainfall formed as a result of surface warming is known as convective rainfall. This research was conducted to investigate the relationship between land surface temperature and the frequency of convective rainfall over a 10-year observation period, from 2013 to 2022. The objective of this study is to analyze the distribution of land surface temperature and its impact on the frequency of convective rainfall in Tangerang Raya. Data analysis in this research was performed using descriptive, spatial, and correlation analyses. The research findings reveal the distribution of land surface temperature in Tangerang Raya, indicating that higher land surface temperature values are associated with land covers such as settlements and industries, while lower values indicate areas covered by vegetation. The correlation analysis results show a relationship between land surface temperature and the frequency of convective rainfall in two rain stations on the southern side of Tangerang Raya, located within a 30 km radius from the sea. This relationship indicates that as the extent of high-temperature land surface area increases, the frequency of convective rainfall also increases. The correlation value between the two variables is 0.597, with a coefficient of determination of

0.357.