

URBAN HEAT ISLAND



Urban areas experiencing significantly higher temperatures compared to surrounding suburban areas, with the urban heat island effect becoming increasingly severe. In the past, Taiwan's heat island intensity ranged between 2°C and 2.5°C. On June 29, 2020, Taipei recorded a high temperature of 38.9°C, breaking the previous record for June. Furthermore, on July 24, 2020, Taipei recorded an even higher temperature of 39.7°C, marking the highest temperature in 124 years at the Taipei Weather Station. The urban heat island phenomenon in Taiwan is pronounced, and with the progression of global warming, the Physiologically Equivalent Temperature (PET) shows a yearly upward trend (Figure). The worsening outdoor thermal conditions in cities make adapting to the impacts of urban heat islands a pressing issue.

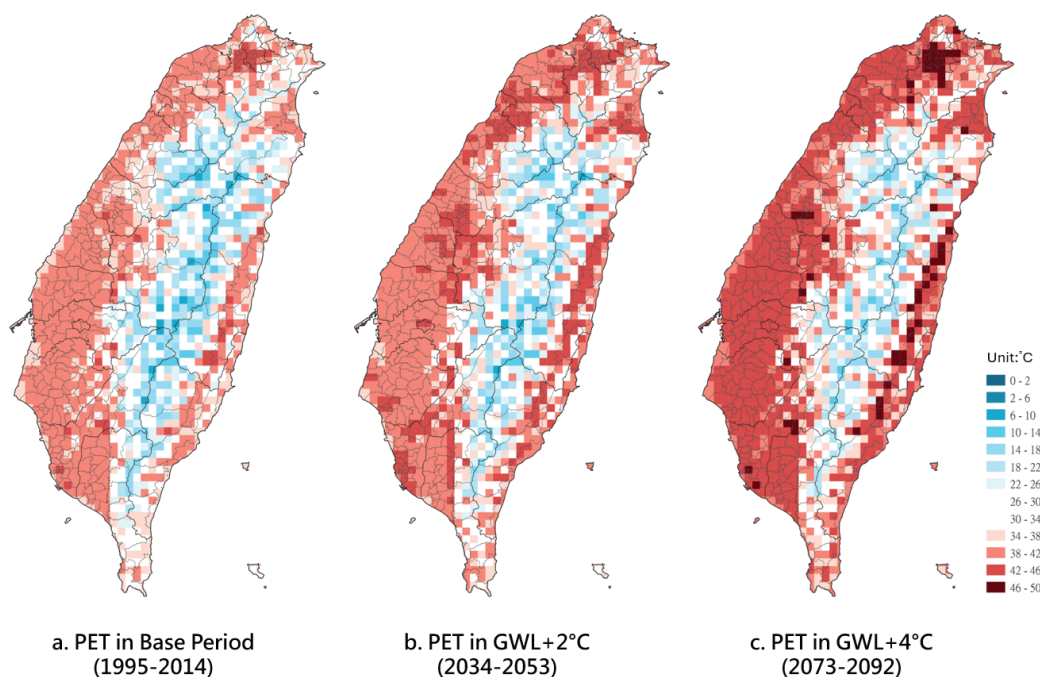


Figure
PET Distribution Map for Taiwan (Average of July 14:00)

Note:

In Figure a, b, and c indicate the average PET at 2 pm on the month of July for Taiwan using the climate change projection data for the baseline period and the RCP8.5 global warming scenarios GWL 2°C and GWL 4°C. The figure reveals that the temperature in highly developed downtown areas is substantially higher than that in suburban areas. The pronounced urban heat island phenomenon in Taiwan has resulted in a yearly upward trend in the PET.

