

臺北市低溫資訊的防災應用

Disaster Prevention Applications of Low-Temperature Information in Taipei City

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摘 要

增溫情境下，臺北盆地是熱點之一，也使冬季更加縮短：延後開始、提前結束。當民眾習於冬季常態高溫，更需留意低溫或劇烈降溫對於敏感族群的影響。12月至次年2月期間，若未來一週內中央氣象署預報臺北地區受大陸冷氣團等級以上低溫影響(臺北日最低氣溫 $\leq 14^{\circ}\text{C}$)、或有劇烈降溫情形時，臺灣大學天氣團隊會發布相關提醒資訊予臺北市政府防災人員參考。

統計臺北氣象站1991-2020年冬季逐日最低溫，1月23日至2月6日的平均最低溫皆低於 14°C ，是全年最冷期間。近年陽明山區降雪(冰霰)事件中，鞍部測站(海拔837m)溫度皆低於 0°C ，且有較充沛潮濕層；對應臺北低溫在 8°C 以下，2016年寒流事件臺北低溫更達到 4°C ，使臺北盆地鄰近的山區都有降雪。由於局部氣溫預報仍有不確定性，故藉由氣溫差異之機率統計，可以初步評估條件是否有利陽明山區降雪(冰霰)或路面結冰之機會，並提供資訊與防災單位參考。

關鍵字：低溫、大陸冷氣團、寒流、機率統計

Abstract

The warming scenario indicates Taipei Basin is one of the hotspots, with a shorter winter with a delayed start and an earlier end. As people become accustomed to higher winter temperatures, attention must be given to the impact of low temperatures or sudden drops in temperature on vulnerable groups. During the period from December to February, if the Central Weather Administration forecasts that Taipei will be affected by continental cold air masses or lower temperatures (daily minimum temperature $\leq 14^{\circ}\text{C}$) in the coming week or if there is a sudden temperature drop, the National Taiwan University weather group will issue relevant advisories to the Taipei City Government's disaster prevention and response personnel as necessary.

Statistics from the Taipei Weather Station for daily minimum temperatures during winter from 1991 to 2020 show that the average minimum temperature from January 23 to February 6 is below 14°C , making it the coldest period of the year. In recent years, snowfall (or sleet) events in the Yangmingshan area have occurred when the temperature at the Anbu Station (837 meters above sea level) was below 0°C , with a sufficient moist layer present. Correspondingly, Taipei's temperature was below 8°C , and during the 2016 cold wave, Taipei's temperature dropped to 4°C , causing snowfall in the surrounding mountainous areas of the Taipei Basin. Due to uncertainties in local temperature forecasts, the statistical probability of temperature differences can provide a preliminary assessment of the likelihood of snowfall (or sleet) or road icing in the Yangmingshan area, offering valuable information to disaster prevention units.

Keywords: low temperature, continental cold air mass, cold surge, probability-and-statistics.