第二節　　二零一九年熱帶氣旋概述

2.1　二零一九年的熱帶氣旋回顧

2.1.1 北太平洋西部(包括南海區域)的熱帶氣旋

二零一九年有28個熱帶氣旋影響北太平洋西部及南海區域（即由赤道至北緯45度、東經100至180度所包括的範圍），少於1961-2010年約30個的長期年平均數目。全年有16個熱帶氣旋達到颱風或以上強度，略多於1961-2010年約15個的長期年平均數目，其中有七個熱帶氣旋更達到超強颱風程度(中心附近最高持續風速達到每小時185公里或以上)。

圖2.1是二零一九年在北太平洋西部及南海區域熱帶氣旋數目之逐月分佈。

二零一九年內有六個熱帶氣旋在中國登陸，其中一個在香港300公里內的華南沿岸登陸，一個橫過台灣。四個熱帶氣旋登陸朝鮮半島，五個登陸日本，四個橫過菲律賓及六個登陸越南。十一月的超強颱風夏浪(1923)（圖2.3）是二零一九年北太平洋西部及南海區域最強的熱帶氣旋，其中心附近最高持續風速估計為每小時250公里，而最低海平面氣壓為905百帕斯卡（表4.1）。

2.1.2 香港責任範圍內的熱帶氣旋

在二零一九年的28個熱帶氣旋中，有15個出現在香港責任範圍（即北緯10至30度、東經105至125度），略少於 1961-2010年約16個的長期年平均數目（表2.1），當中有五個在香港責任範圍內形成。年內，香港天文台總共發出349個供船舶使用的熱帶氣旋警告表4.2）。

2.1.3 南海區域內的熱帶氣旋

二零一九年共有九個熱帶氣旋影響南海區域（即北緯10至25度、東經105至120度），較1961-2010年約12個的長期年平均數目少，當中有五個在南海上形成。

2.1.4 影響香港的熱帶氣旋

二零一九年香港的颱風季節始於七月二日，當天隨著熱帶低氣壓木恩(1904)在南海北部上形成，天文台發出一號戒備信號。九月三日熱帶低氣壓劍魚(1914)繼續遠離香港，本港風力減弱，二零一九年颱風季節隨著天文台當天取消所有熱帶氣旋警告信號而結束。

年內共有五個熱帶氣旋影響香港（圖2.2），略少於1961-2010年約六個的長期年平均數目(表2.2)。這五個熱帶氣旋分別為七月的熱帶低氣壓木恩(1904)、七月至八月的熱帶風暴韋帕(1907)、八月的強烈熱帶風暴白鹿(1911)及熱帶風暴楊柳(1912)、以及九月的熱帶低氣壓劍魚(1914)。韋帕影響香港期間，天文台在七月三十一日曾發出八號烈風或暴風信號，是年內發出的最高熱帶氣旋警告信號，韋帕亦是一九六一年以來距離香港最遠而需發出八號烈風或暴風信號的熱帶風暴。熱帶低氣壓劍魚引致天文台發出三號強風信號。

2.1.5 熱帶氣旋的雨量

二零一九年熱帶氣旋為香港帶來的雨量（即由熱帶氣旋出現於香港600公里範圍內至其消散或離開香港600公里範圍之後72小時期間天文台總部錄得的雨量）共為856.9毫米（表4.8.1），約佔年內總雨量2396.2毫米的百分之35.8，比1961-2010年長期年平均值的728.8毫米多約18%。

強烈熱帶風暴白鹿 (1911)為天文台總部帶來269.6毫米的雨量(表4.8.1)，是年內雨量最多的熱帶氣旋。

2.2 每月概述

這一節逐月介紹二零一九年北太平洋西部及南海區域的熱帶氣旋概況。影響香港的各熱帶氣旋及傷亡報告則詳述於第三節。

一月

二零一九年一月並無熱帶氣旋在北太平洋西部及南海區域上形成。有關熱帶氣旋帕布(1901)的概況，請參閱二零一八年的熱帶氣旋年報。

二月

熱帶低氣壓蝴蝶(1902)於二月十九日在關島之東南偏東約1 810公里的北太平洋西部上形成，向西漂移並迅速增強。蝴蝶於二月二十一日轉向西北方向移動，兩日後發展為超強颱風。蝴蝶於二月二十五日達到其最高強度，中心附近最高持續風速估計為每小時210公里，是自一九六一年以來在北太平洋西部二月最強的熱帶氣旋。隨後蝴蝶向北緩慢移動並開始減弱，最後於二月二十八日在北太平洋西部上減弱為一個低壓區。

三月至五月

二零一九年三月至五月並無熱帶氣旋在北太平洋西部及南海區域上形成。

六月

熱帶低氣壓聖帕(1903)於六月二十七日在大阪之西南偏南約400公里的北太平洋西部上形成，向東北偏東方向移動，其中心附近最高持續風速估計為每小時55公里。翌日聖帕在日本以東的海域演變為一股溫帶氣旋。

根據報章報導，與聖帕相關的暴雨嚴重影響日本九州地區的陸空交通。

七月至八月

熱帶低氣壓木恩(1904)於七月二日下午在海口之東南約240公里的南海北部上形成，大致向西移動。木恩於七月三日早上橫過海南島後，進入北部灣並稍為增強，達到其最高強度，中心附近最高持續風速估計為每小時55公里。其後木恩採取西北路徑橫過北部灣，七月四日早上在越南北部減弱為一個低壓區。

根據報章報導，木恩對海南島海陸空交通造成嚴重影響。

熱帶低氣壓丹娜絲(1905)於七月十五日下午在馬尼拉之東北偏東約1 120公里的北太平洋西部上形成，初時向西移動，七月十七日轉向東北偏北移動。丹娜絲於七月十八日上午增強為熱帶風暴，翌日達到其最高強度，中心附近最高持續風速估計為每小時85公里。七月二十日丹娜絲繼續採取東北偏北路徑橫過朝鮮半島，並逐漸減弱，最後於七月二十一日在朝鮮半島以東的海域演變為一股溫帶氣旋。

根據報章報導，與丹娜絲相關的暴雨在菲律賓造成最少四人死亡。

熱帶低氣壓百合(1906)於七月二十四日上午在硫黃島之西南偏西約430公里的北太平洋西部上形成，大致向北移動。七月二十六日早上百合增強為熱帶風暴並達到其最高強度，中心附最高持續風速估計為每小時65公里。其後百合逐漸減弱，七月二十七日下午在日本本州減弱為一個低壓區。

熱帶低氣壓韋帕(1907)於七月三十日下午在香港以南約510公里的南海北部上形成，晚間至翌日早上向北緩慢移動。韋帕於七月三十一日早上增強為熱帶風暴，其後達到最高強度時，中心附近最高持續風速估計為每小時85公里。韋帕於當日下午開始加速向西北偏西移向海南島，八月一日清晨韋帕移速減慢，以逆時針方向在海南島東北部沿岸徘徊，早上再度加速向北移動，晚上向西橫過雷州半島。八月二日韋帕橫過廣西沿岸至北部灣一帶，並逐漸減弱，翌日晚上在越南北部減弱為一個低壓區。

根據報章報導，韋帕在澳門造成六人受傷。韋帕亦為越南北部帶來暴雨，引致廣泛地區水浸，共造成最少10人死亡，11人失蹤。

熱帶低氣壓范斯高(1908)於八月二日清晨在硫黃島之東南偏東約1 370公里的北太平洋西部上形成，採取西北路徑移向日本九州一帶，並逐漸增強。范斯高於八月五日晚間增強為颱風，並達到其最高強度，中心附近最高持續風速估計為每小時130公里。翌日范斯高橫過日本九州並逐漸減弱。隨後范斯高向北橫過朝鮮半島，最後於八月七日晚上在朝鮮半島以東的海域演變為一股溫帶氣旋。

根據報章報導，范斯高吹襲日本九州期間帶來狂風暴雨，造成最少一人死亡及三人受傷，超過17 000戶停電。

熱帶低氣壓利奇馬(1909)於八月四日清晨在馬尼拉以東約1 180公里的北太平洋西部上形成，大致向西北移向台灣以東海域，並逐漸增強。利奇馬於八月七日增強為颱風，翌日進一步發展為超強颱風並達到其最高強度，中心附近最高持續風速估計為每小時205公里。隨後兩天利奇馬橫過東海，並逐漸減弱。利奇馬於八月十日清晨在浙江沿岸登陸，其後轉向偏北方向橫過華東沿岸地區並減弱為熱帶風暴。八月十二日利奇馬在渤海緩慢移動，翌日下午演變為一股溫帶氣旋。

根據報章報導，受利奇馬影響，浙江、上海、江蘇、山東、安徽、福建、河北、遼寧、吉林九省市暴雨成災，共造成最少56人死亡和14人失蹤、逾一千四百萬人受災及直接經濟損失超過五百一十五億元人民幣。利奇馬引致的暴雨在台灣造成至少兩死11傷。利奇馬吹襲琉球群島期間亦造成最少四人受傷和15 000多戶停電。

熱帶低氣壓羅莎(1910)於八月六日早上在硫黃島之東南偏南約800公里的北太平洋西部上形成，移動緩慢並迅速增強。羅莎於八月九日增強為強颱風並達到其最高強度，中心附近最高持續風速估計為每小時155公里。隨後羅莎開始減弱，八月十二日開始加速向西北移動。羅莎於八月十四日轉向北移向日本九州至四國一帶。羅莎於八月十五日先後橫過日本四國及本州西部，翌日在本州以北的海域演變為一股溫帶氣旋。

根據報章報導，羅莎吹襲日本期間帶來狂風暴雨，造成最少三人死亡及55人受傷，逾800航班取消。

熱帶低氣壓白鹿(1911)於八月二十一日下午在高雄之東南偏東約1 460公里的北太平洋西部上形成，初時向西移動。翌日白鹿增強為熱帶風暴，下午開始採取西北路徑移向台灣南部。當晚白鹿進一步增強為強烈熱帶風暴，八月二十三日晚上達到其最高強度，中心附近最高持續風速估計為每小時105公里。白鹿於八月二十四日橫過台灣南部，其後採取

西北偏西路徑橫過台灣海峽。翌日早上白鹿在福建登陸並減弱為熱帶風暴，日間繼續移入內陸，八月二十六日凌晨在廣東內陸減弱為低壓區。

根據報章報導，白鹿吹襲台灣期間造成至少一人死亡和九人受傷，逾10萬戶停電。福建亦有至少44萬戶停電，陸空交通受影響。

熱帶低氣壓楊柳(1912)於八月二十七日早上在馬尼拉以東約590公里的北太平洋西部上形成，向西北偏西迅速移動，當晚橫過呂宋。翌日楊柳繼續迅速向西橫過南海中部並增強為熱帶風暴，並在八月二十九日凌晨達其最高強度，中心附近最高持續風速估計為每小時85公里。八月三十日凌晨楊柳在越南北部登陸，日間在中南半島減弱為低壓區。

根據報章報導，楊柳吹襲菲律賓期間，一人被巨浪捲走而死亡。楊柳在海南島誘發龍捲風，造成至少八人死亡和兩人受傷。楊柳在越南亦造成至少六人死亡和兩人失蹤。

九月至十月

熱帶低氣壓劍魚(1914)於九月一日早上在香港之東南約480公里的南海北部上形成，向西橫過南海北部。日間劍魚稍為增強，其中心附近最高持續風速估計為每小時55公里。劍魚於九月二日早上橫過海南島東南部後轉向西南方向移動。劍魚於九月三日在越南中部沿岸一帶徘徊打轉，翌日在越南中部沿岸海域減弱為一個低壓區。

根據報章報導，劍魚吹襲越南期間造成至少六人死亡和十人失蹤。

熱帶低氣壓玲玲(1913)於九月二日早上在高雄之東南約1 000公里的北太平洋西部上形成，大致向北移向台灣以東海域，並迅速增強。玲玲於九月五日在日本宮古島附近增強為超強颱風，達到其最高強度，中心附近最高持續風速估計為每小時205公里。隨後玲玲先後橫過東海和黃海，於九月七日登陸朝鮮半島北部，最後於九月八日在中國東北部演變為一股溫帶氣旋。

根據報章報導，玲玲掠過日本宮古島期間帶來狂風暴雨，造成最少五人受傷。玲玲吹襲韓國期間造成最少三人死亡和24人受傷，超過16萬戶停電。玲玲亦在朝鮮造成最少五人死亡及三人受傷。

熱帶低氣壓法茜(1915)於九月四日清晨在硫黃島之東南偏東約2 120公里的北太平洋西部上形成，向西北移向日本以南海域，並逐漸增強。法茜於九月八日增強為強颱風並達到其最高強度，中心附近最高持續風速估計為每小時175公里。隨後法茜逐漸轉向東北方向移動，九月九日清晨掠過東京附近並減弱。法茜於九月十日在日本以東海域上演變為一股溫帶氣旋。

受法茜正面吹襲，關東地區多處錄得破紀錄的風速。根據報章報導，法茜吹襲日本期間造成最少四人死亡和150人受傷，關東地區有超過93萬戶停電，東京亦有至少350宗水浸報告。關東地區的海陸空交通大受影響，至少283航班取消，來往成田機場的交通一度中斷，約17 000名旅客滯留在機場。

熱帶低氣壓琵琶(1916)於九月十五日早上在硫黃島之東南約1 350公里的北太平洋西部上形成，向西北方向移動並逐漸增強。琵琶於當晚增強為熱帶風暴並達到其最高強度，中心附近最高持續風速估計為每小時65公里。翌日琵琶迅速減弱，下午在海上減弱為一個低壓區。

熱帶低氣壓塔巴(1917)於九月十八日早上在台北之東南偏東約840公里的北太平洋西部上形成，初時移動緩慢。塔巴於九月二十一日早上增強為颱風，達到其最高強度，中心附近最高持續風速估計為每小時120公里。當日塔巴加速向北橫過東海。塔巴於九月二十二日轉向東北移動，翌日早上在日本本州以北的海域上演變為一股溫帶氣旋。

根據報章報導，塔巴吹襲日本期間造成至少兩人死亡和56人受傷。塔巴在韓國亦造成至少一人死亡、26人受傷。

熱帶低氣壓米娜(1918)於九月二十七日下午在馬尼拉以東約1 750公里的北太平洋西部上形成，向西北至西北偏西移動並逐漸增強。米娜於九月二十九日增強為颱風，翌日轉向偏北方向移動，橫過台灣以東海域並達到其最高強度，中心附近最高持續風速估計為每小時145公里。隨後米娜移向華東沿岸並逐漸減弱。米娜於十月一日晚上橫過華東沿海一帶並減弱為強烈熱帶風暴。翌日米娜轉向東北方向移動，橫過朝鮮半島南部，最後於十月三日在朝鮮半島以東的海域上演變為一股溫帶氣旋。

根據報章報導，米娜吹襲台灣期間共造成最少12人受傷，超過六萬戶停電。受米娜影響，浙江最少有三人死亡及一人失蹤，直接經濟損失達18億元人民幣。米娜在韓國亦造成最少12人死亡、11人受傷和兩人失蹤。

熱帶低氣壓海貝思(1919)於十月五日在關島以東約1 930公里的北太平洋西部上形成，向西移動並迅速增強。海貝思於十月七日發展為超強颱風及達到其最高強度，中心附近最高持續風速估計為每小時230公里。隨後四天海貝思逐漸轉向北至西北偏北移向日本以南海域。海貝思於十月十二日掠過東京及關東地區，當晚減弱為颱風，最後於十月十三日在北海道以東的海域上演變為一股溫帶氣旋。

受海貝思正面吹襲，日本關東地區多處錄得破紀錄的雨量。其中十月十二日在神奈川縣箱根錄得922.5毫米的日雨量，是日本有記錄以來最高的日降雨量。根據報章報導，海貝

思吹襲日本期間帶來狂風暴雨，引致廣泛地區水浸及大範圍電力中斷，造成最少98人死亡、468人受傷及七人失蹤，逾40萬戶停電。關東地區的海陸空交通癱瘓。

熱帶低氣壓浣熊(1920)於十月十八日清晨在馬尼拉之東北偏東約1 100公里的北太平洋西部上形成，初時移動緩慢並迅速增強，翌日晚上轉向東北偏北移向琉球群島一帶。浣熊於十月二十日增強為強颱風並達到其最高強度，中心附近最高持續風速估計為每小時165公里。隨後浣熊逐漸減弱，翌日傍晚在日本本州以南海域上演變為一股溫帶氣旋。

熱帶低氣壓博羅依(1921)於十月十九日早上在關島之東南偏東約1 350公里的北太平洋西部上形成，大致向西北方向移動並迅速增強。博羅依於十月二十二日下午增強為超強颱風並達到其最高強度，中心附近最高持續風速估計為每小時205公里。隨後兩天博羅依轉向東北方向移動，並逐漸減弱，最後於十月二十五日下午在日本以東海域上演變為一股溫帶氣旋。

熱帶低氣壓麥德姆(1922)於十月二十九日早上在南沙之東北偏東約210公里的南海南部上形成，大致向西移向越南南部並逐漸增強。麥德姆於翌日晚上增強為強烈熱帶風暴，並達到其最高強度，中心附近最高持續風速估計為每小時90公里。麥德姆於十月三十一日橫過越南南部，當日黃昏在中南半島減弱為一個低壓區。

十一月至十二月

熱帶低氣壓夏浪(1923)於十一月二日晚上在關島以東約1 390公里的北太平洋西部上形成，向西北移動並逐漸增強。夏浪於十一月五日增強為超強颱風並達到其最高強度，中心附近最高持續風速估計為每小時250公里。隨後三日夏浪逐漸轉向北至東北移動並減弱，最後於十一月九日在海上演變為一股溫帶氣旋。

熱帶低氣壓娜基莉(1924)於十一月五日早上在南沙以北約380公里的南海南部上形成，初時移動緩慢，在南海南部徘徊。娜基莉於十一月七日早上增強為強烈熱帶風暴，翌日下午達到其最高強度，中心附近最高持續風速估計為每小時110公里。隨後娜基莉向西移向越南中部。最後娜基莉於十一月十一日在越南中部減弱為低壓區。

根據報章報導，娜基莉吹襲越南期間共造成最少兩人死亡。

熱帶低氣壓風神(1925)於十一月十一日晚上在關島以東約2 220公里的北太平洋西部上形成，大致向西至西北偏西移動並逐漸增強。風神於十一月十五日早上增強為颱風並開始向東北轉向。風神於當晚進一步增強為強颱風並達到其最高強度，中心附近最高持續風速估計為每小時165公里。風神於十一月十七日再轉向東南移動，並迅速減弱，當晚在海上減弱為低壓區。

熱帶低氣壓海鷗(1926)於十一月十三日早上在馬尼拉之東南偏東約890公里的北太平洋西部上形成，初時大致向西北至西北偏北移向呂宋以東海域。海鷗於十一月十五至十六日移速減慢，並在呂宋以東海域徘徊。海鷗於十一月十七日清晨增強為熱帶風暴，並大致向西北移向呂宋海峽一帶。海鷗於十一月十九日早上進一步增強為颱風，並達到其最高強度，中心附近最高持續風速估計為每小時120公里。海鷗翌日轉向西南偏南方向移動並登陸呂宋北部。海鷗登陸後迅速減弱，最後於十一月二十日下午在呂宋減弱為低壓區。

熱帶低氣壓鳳凰(1927)於十一月二十日清晨在馬尼拉以東約800公里的北太平洋西部上形成，移向台灣以東海域並逐漸增強。鳳凰於十一月二十一日增強為強烈熱帶風暴，並達到其最高強度，中心附近最高持續風速估計為每小時110公里。隨後鳳凰迅速減弱，最後於十一月二十三日淩晨在台灣以東海域減弱為低壓區。

熱帶低氣壓北冕(1928)於十一月二十六日清晨在關島之東南偏東約830公里的北太平洋西部上形成，向西北偏西方向移動並逐漸增強。北冕於十一月二十九日增強為颱風，向西移向菲律賓以東海域。北冕於十二月二日晚上進一步增強為超強颱風，並達到其最高強度，中心附近最高持續風速估計為每小時185公里。翌日北冕橫過菲律賓中部進入南海，並迅速減弱。北冕於十二月五日轉向西南移動，晚上在南海南部減弱為低壓區。

根據報章報導，北冕為菲律賓帶來狂風暴雨，造成最少17人死亡、兩人失蹤及322受傷。受北冕影響，呂宋東南部廣泛地區停電。馬尼拉機場亦被迫關閉，超過500班航班取消。

熱帶低氣壓巴蓬(1929)於十二月二十二日清晨在雅蒲島之東南約410公里的北太平洋西部上形成，向西北偏西方向移動並逐漸增強。巴蓬於十二月二十四日下午增強為颱風並橫過菲律賓中部，翌日上午達到其最高強度，中心附近最高持續風速估計為每小時145公里。受乾燥的東北季候風影響，巴蓬進入南海後於十二月二十七日移速減慢，在南海中部迅速減弱，最後於十二月二十八日下午在南海中部減弱為低壓區。

根據報章報導，巴蓬吹襲菲律賓期間帶來狂風暴雨，造成最少57人死亡、六人失蹤及369人受傷、逾320萬人受災，超過53萬間房屋受損。

備註：人命傷亡及財物損毀數據是根據報章報導輯錄而成。

Section 2 TROPICAL CYCLONE OVERVIEW FOR 2019

2.1 Review of tropical cyclones in 2019

2.1.1 Tropical cyclones over the western North Pacific (including the South China Sea)

In 2019, a total of 28 tropical cyclones occurred over the western North Pacific (WNP) and the South China Sea (SCS) bounded by the Equator, 45°N, 100°E and 180°, less than the long-term (1961 - 2010) average figure of around 30. During the year, 16 of the tropical cyclones attained typhoon intensity or above, slightly more than the long-term average (1961 - 2010) of about 15, with seven of them reaching super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre).

Figure 2.1 shows the monthly frequencies of the occurrence of tropical cyclones in WNP and SCS in 2019.

During the year, six tropical cyclones made landfall over China, with one of them crossing the south China coast within 300 km of Hong Kong and one crossing Taiwan. Four tropical cyclones made landfall over the Korean Peninsula, five made landfall over Japan, four traversed the Philippines and six made landfall over Vietnam. With an estimated maximum sustained wind speed of 250 km/h and a minimum sea-level pressure of 905 hPa near the centre (Table 4.1), Super Typhoon Halong (1923) in November (Figure 2.3) was the most intense tropical cyclone over the WNP and the SCS in 2019.

2.1.2 Tropical cyclones in Hong Kong's area of responsibility

Amongst the 28 tropical cyclones in 2019, 15 of them occurred inside Hong Kong's area of responsibility (i.e. the area bounded by 10°N, 30°N, 105°E and 125°E), slightly less than the long-term annual average figure of around 16 (Table 2.1). Five of them developed within Hong Kong's area of responsibility. Altogether, 349 tropical cyclone warnings to ships and vessels were issued by the Hong Kong Observatory in 2019 (Table 4.2).

2.1.3 Tropical cyclones over the South China Sea

Nine tropical cyclones affected SCS bounded by 10°N, 25°N, 105°E and 120°E in 2019, less than the long-term annual average of around 12. Five of them formed within SCS.

2.1.4 Tropical cyclones affecting Hong Kong

In 2019, the typhoon season in Hong Kong started on 2 July when Tropical Depression Mun (1904) formed in the northern part of the South China Sea, necessitating the issuance of the Standby Signal No. 1. The typhoon season ended with the cancellation of all tropical cyclone warning signals on 3 September when Tropical Depression Kajiki (1914) moved away from Hong Kong and local winds were weakened that day.

Five tropical cyclones affected Hong Kong during 2019 (Figure 2.2), slightly less than the long-term (1961-2010) average of about six in a year (Table 2.2). They were Tropical Depression Mun (1904) in July, Tropical Storm Wipha (1907) in July to August, Severe Tropical Storm Bailu (1911) and Tropical Storm Podul (1912) in August, and Tropical Depression Kajiki (1914) in September. Wipha necessitated the issuance of the No.8 Gale or Storm Signal on 31 July which was the highest

tropical cyclone warning signal issued in 2019. Wipha is also the farthest tropical storm necessitating the issuance of the No.8 Gale or Storm Signal in Hong Kong since 1961. Tropical Depression Kajiki necessitated the issuance of the Strong Wind Signal No. 3 in Hong Kong.

2.1.5 Tropical cyclone rainfall

Tropical cyclone rainfall (total rainfall recorded at the Hong Kong Observatory Headquarters from the time when a tropical cyclone comes within 600 km of Hong Kong to 72 hours after it has dissipated or moved more than 600 km away from Hong Kong) in 2019 was 856.9 mm (Table 4.8.1). This accounted for approximately 35.8 % of the year's total rainfall of 2396.2 mm and was about 18 % above the 1961-2010 long-term average of 728.8 mm.

Severe Tropical Storm Bailu (1911) brought 269.6 mm of rainfall to the Hong Kong Observatory Headquarters (Table 4.8.1) and was the wettest tropical cyclone in 2019.

2.2 Monthly overview

A monthly overview of tropical cyclones in 2019 is given in this section. Detailed reports on tropical cyclones affecting Hong Kong, including reports of damage, are presented in Section 3.

JANUARY

No tropical cyclone formed over the western North Pacific and the South China Sea in January 2019. For the overview of tropical cyclone Pabuk (1901), please refer to the tropical cyclone annual report 2018.

FEBURARY

Wutip (1902) formed as a tropical depression over the western North Pacific about 1 810 km east-southeast of Guam on 19 February. It intensified rapidly when drifting westwards. Wutip turned to move northwestwards on 21 February and developed into a super typhoon two days later. Wutip reached its peak intensity on 25 February with an estimated maximum sustained wind of 210 km/h near its centre, which is the most intense tropical cyclone over the western North Pacific in February since 1961. Wutip then turned to track northwards slowly and started to weaken, before finally degenerating into an area of low pressure over the western North Pacific on 28 February.

MARCH TO MAY

No tropical cyclone formed over the western North Pacific and the South China Sea from March to May 2019.

JUNE

Sepat (1903) formed as a tropical depression over the western North Pacific about 400 km south-southwest of Osaka on 27 June. It moved east-northeastwards with an estimated sustained wind of 55 km/h near its centre. Sepat evolved into an extratropical cyclone over the seas east of Japan on 28 June.

According to press reports, the territorial rain associated with Sepat severely affected the land and air traffic of Kyushu in Japan.

JULY TO AUGUST

Mun (1904) formed as a tropical depression over the northern part of the South China Sea about 240 km southeast of Haikou on the afternoon of 2 July and moved generally westwards. After moving across Hainan Island on the morning of 3 July, Mun entered Beibu Wan and intensified slightly, reaching its peak intensity with an estimated sustained wind of 55 km/h near its centre. Moving northwestwards across Beibu Wan, Mun weakened into an area of low pressure over the northern part of Vietnam on the morning of 4 July.

According to press reports, Mun disrupted sea, land, air transportation in Hainan Island.

Danas (1905) formed as a tropical depression over the western North Pacific about 1 120 km east-northeast of Manila and moved westwards at first. It turned to move north-northeastwards on 17 July. Danas intensified into a tropical storm on the morning of 18 July, reaching its peak intensity next day with an estimated sustained wind of 85 km/h near its centre. It continued to track north-northeastwards across the Korean Peninsula on 20 July and weakened gradually. Danas finally evolved into an extratropical cyclone over the sea areas east of the Korean Peninsula on 21 July.

According to press reports, the torrential rain associated with Danas caused at least four deaths in the Philippines.

Nari (1906) formed as a tropical depression over the western North Pacific about 430 km west-southwest of Iwo Jima on the morning of 24 July and moved generally northwards. It intensified into a tropical storm on the morning of 26 July, reaching its peak intensity with an estimated sustained wind of 65 km/h near its centre. Nari then weakened gradually and degenerated into an area of low pressure over Honshu of Japan on the afternoon of 27 July.

Wipha (1907) formed as a tropical depression over the northern part of the South China Sea about 510 km south of Hong Kong on the afternoon of 30 July. It drifted northwards slowly during that night and next morning. Wipha intensified into a tropical storm on the morning of 31 July, later reaching its peak intensity with an estimated maximum sustained wind of 85 km/h near its centre. It started to pick up speed to move west-northwest towards Hainan Island in the afternoon. Wipha slowed down on the early morning of 1 August, making an anti-clockwise loop around the northeastern coast of Hainan Island. It picked up its speed to move northward again in the morning and then moved westward across the Leizhou Peninsula that night. Wipha moved across the coast of Guangxi and the vicinity of Beibu Wan on 2 August and weakened gradually. It degenerated into an area of low pressure over the northern part of Vietnam the next night.

According to press reports, at least six people were injured in Macao during the passage of Wipha. Wipha also brought torrential rain to the northern part of Vietnam, which triggered extensive flooding. At least 10 people were killed and 11 were reported missing.

Francisco (1908) formed as a tropical depression over the western North Pacific about 1 370 km east-southeast of Iwo Jima on the small hours of 2 August. It took on a northwest course towards the vicinity of Kyushu of Japan and intensified gradually. Francisco intensified into a

typhoon on the night of 5 August, reaching its peak intensity with an estimated sustained wind of 130 km/h near its centre. It swept across Kyushu of Japan the next day and weakened gradually. Francisco then moved northward across the Korean Peninsula and finally evolved into an extratropical cyclone over the sea areas east of the Korean Peninsula on the night of 7 August.

According to press reports, Francisco brought torrential rain and squalls to Kyushu of Japan during its passage, leading to at least one dead and three injuries. There were more than 17 000 households without electricity supply.

Lekima (1909) formed as a tropical depression over the western North Pacific about 1180 km east of Manila on the small hours of 4 August. It tracked generally northwest towards the sea areas east of Taiwan and intensified gradually. Lekima intensified into a typhoon on 7 August and further developed into a super typhoon the next day, reaching its peak intensity with an estimated sustained wind of 205 km/h near its centre. Lekima moved across the East China Sea and weakened gradually in the following two days. Lekima made landfall over the coast of Zhejiang on the small hours of 10 August. It then turned northwards across the coastal region of eastern China and weakened into a tropical storm. Lekima moved slowly over the Bohai Sea on 12 August and evolved into an extratropical cyclone the next afternoon.

According to press reports, Lekima wreaked havoc with torrential rain in nine provinces and cities including Zhejiang, Shanghai, Jiangsu, Shandong, Anhui, Fujian, Hebei, Liaoning and Jilin. There were at least 56 deaths and 14 missing. Over 14 million people were affected with direct economic loss exceeding 51.5 billion RMB. Under the influence of torrential rain brought by Lekima, there were at least two deaths and 11 injuries in Taiwan. At least four people were also injured in Ryukyu Islands during the passage of Lekima. Electricity supply to over 15 000 households was affected.

Krosa (1910) formed as a tropical depression over the western North Pacific about 800 km south-southeast of Iwo Jima on the morning of 6 August. While moving slowly, it intensified rapidly and developed into a severe typhoon on 9 August, reaching its peak intensity with an estimated sustained wind of 155 km/h near its centre. Krosa then started to weaken and picked up its speed to move northwards towards the vicinity of Kyushu and Shikoku of Japan on 14 August. After moving across Shikoku and the western part of Honshu of Japan on 15 August, Krosa finally evolved into an extratropical cyclone over the sea areas north of Honshu the next day.

According to press reports, Krosa brought torrential rain and squalls during its passage to Japan, leading to at least three deaths and 55 injuries. Over 800 flights were cancelled.

Bailu (1911) formed as a tropical depression over the western North Pacific about 1 460 km east-southeast of Gaoxiong on the afternoon of 21 August and drifted westwards at first. Bailu intensified into a tropical storm on 22 August and started to take on a northwesterly course towards the southern part of Taiwan in the afternoon. Bailu further intensified into a severe tropical storm that night. It reached its peak intensity on the night of 23 August with an estimated maximum sustained wind of 105 km/h near its centre. After sweeping across the southern part of Taiwan on 24 August, Bailu moved across the Taiwan Strait. It made landfall over Fujian the next morning and weakened into a tropical storm. Bailu moved further inland during the day and weakened into an area of low pressure over inland Guangdong on the small hours of 26 August.

According to press reports, Bailu brought at least one death and nine injuries to Taiwan during its passage. Over 100 000 households were without electricity supply. In Fujian, electricity supply to over 440 000 households was also interrupted. Air and land transportations were affected.

Podul (1912) formed as a tropical depression over the western North Pacific about 590 km east of Manila on the morning of 27 August. Drifting west-northwestwards quickly, it moved across Luzon that night. Podul continued to move westwards quickly across the central part of the South China Sea and intensified into a tropical storm on 28 August. Podul reached its peak intensity on the small hours of 29 August with an estimated maximum sustained wind of 85 km/h near its centre. Podul made landfall over the northern part of Vietnam on the small hours of 30 August and finally weakened into an area of low pressure over the Indo-China during the day.

According to press report, one person was killed by strong waves during the passage of Podul in the Philippines. Podul also triggered a tornado in Hainan Island, killing at least eight people and leaving two others injured. Podul also left at least six deaths and two missing in Vietnam.

SEPTEMBER TO OCTOBER

Kajiki (1914) formed as a tropical depression over the northern part of the South China Sea at about 480 km southeast of Hong Kong on the morning of 1 September and moved westwards across the northern part of the South China Sea. Kajiki intensified slightly during the day with an estimated maximum sustained wind of 55 km/h near its centre. It turned to track southwestwards after moving across the southeastern part of Hainan Island on the morning of 2 September. Kajiki lingered over the vicinity of the coast of central Vietnam on 3 September and finally degenerated into an area of low pressure over the coastal waters of central Vietnam the next day.

According to press reports, Kajiki left at least six deaths and ten missing in Vietnam during its passage.

Lingling (1913) formed as a tropical depression over the western North Pacific about 1 000 km southeast of Gaoxiong on the morning of 2 September. It tracked generally northwards towards the sea areas east of Taiwan and intensified rapidly. It developed into a super typhoon near Miyakojima of Japan on 5 September and reached its peak intensity with an estimated sustained wind of 205 km/h near its centre. Lingling moved across the East China Sea and then the Yellow Sea afterwards. It made landfall over the northern part of the Korean Peninsula on 7 September. Lingling finally evolved into an extratropical cyclone over the northeastern part of China on 8 September.

According to press reports, Lingling brought torrential rain and squalls to Miyakojima of Japan during its passage, leading to at least five injuries. In the Republic of Korea, Lingling caused at least three deaths and 24 injuries, and more than 160 000 households without electricity supply. Lingling also left at least five people dead and three others injured in DPR Korea.

Faxai (1915) formed as a tropical depression over the western North Pacific about 2 120 km east-southeast of Iwo Jima on the small hours of 4 September. It tracked northwestwards towards the sea areas south of Japan and intensified gradually. Faxai intensified into a severe typhoon on 8 September and reached its peak intensity with an estimated sustained wind of 175 km/h near its centre. It then turned to move northeastwards gradually. Faxai skirted past

near Tokyo on the small hours of 9 September and weakened. It evolved into an extratropical cyclone over the sea areas east of Japan on 10 September.

Facing the direct hit of Faxai, record-breaking wind speeds were registered in many places of Kanto of Honshu. According to press reports, Faxai brought torrential rain and squalls to Japan during its passage, leaving at least four deaths and 150 injuries. There were over 930 000 households without electricity supply in Kanto of Honshu and at least 350 flooding reports in Tokyo. Transportation services in Kanto of Honshu were paralyzed with at least 283 flights cancelled. The traffic to Narita International Airport was also suspended, forcing over 17 000 passengers to stay at the airport.

Peipah (1916) formed as a tropical depression over the western North Pacific about 1 350 km southeast of Iwo Jima on the morning of 15 September. It moved northwestwards and intensified gradually. Peipah developed into a tropical storm on the night of 15 September and reached its peak intensity with an estimated sustained wind of 65 km/h near its centre. Peipah weakened rapidly the next day and degenerated into an area of low pressure over sea on the afternoon.

Tapah (1917) formed as a tropical depression over the western North Pacific about 840 km east-southeast of Taibei on the morning of 18 September and drifted slowly at first. Tapah intensified into a typhoon on the morning of 21 September and reached its peak intensity with an estimated sustained wind of 120 km/h near its centre. Tapah picked up speed to move north across the East China Sea that day. It turned to move northeastwards on 22 September and evolved into an extratropical cyclone over the sea areas north of Honshu, Japan the next morning.

According to press reports, Tapah caused at least two deaths and 56 injuries in Japan during its passage. Tapah also left at least one death and 26 injuries in the Republic of Korea.

Mitag (1918) formed as a tropical depression over the western North Pacific about 1 750 km east of Manila on the afternoon of 27 September and moved towards northwest to west-northwest and intensified gradually. Mitag developed into a typhoon on 29 September. It turned to move northwards across the sea areas east of Taiwan the next day and attended its peak intensity with an estimated maximum sustained wind of 145 km/h near its centre. Mitag then moved towards the east China coast and weakened gradually. It moved across the east China coastal waters on the night of 1 October and weakened into a severe tropical storm. Mitag turned to move northeast across the southern part of the Korean Peninsula the next day. It finally evolved into an extratropical cyclone over the seas east of the Korean Peninsula on 3 October.

According to press reports, Mitag brought at least 12 injuries and over 60 000 households without electricity supply in Taiwan during its passage. Under the influence of Mitag, there were at least three deaths and one missing in Zhanjiang, with direct economic loss of around 1.8 billion RMB. Mitag also caused at least 12 deaths, 11 injuries and two missing in the Republic of Korea.

Hagibis (1919) formed as a tropical depression over the western North Pacific about 1 930 km east of Guam on 5 October. It move westwards and intensified rapidly. Hagibis developed into a super typhoon on 7 October and reached its peak intensity with an estimated sustained wind of 230 km/h near its centre. Hagibis then turned to move north to north-northwest gradually towards the sea areas south of Japan in the following four days. It swept across Tokyo and Kanto region on 12 October and weakened into a typhoon that night. Hagibis finally evolved into an extratropical cyclone over the sea areas east of Hokkaido, Japan on 13 October.

Facing the direct hit of Hagibis, record-breaking rainfall were registered in many places of Kanto region of Japan. The daily rainfall of 922.5 mm recorded in Hakone of Kanagawa on 12 October is the highest record in Japan. According to press reports, Hagibis brought torrential rain and squalls to Japan which triggered extensive flooding and power outage, leaving at least 98 deaths, 468 injuries and seven others missing. There were over 400 000 households without electricity supply. Transportation services in Kanto region were paralyzed.

Neoguri (1920) formed as a tropical depression over the western North Pacific about 1 100 km east-northeast of Manila on the small hours of 18 October. It moved slowly at first and intensified rapidly. Neoguri turned to move north-northeast towards the vicinity of the Ryukyu Islands the next night. It intensified into a severe typhoon on 20 October and reached its peak intensity with an estimated sustained wind of 165 km/h near its centre. Neoguri then weakened gradually and evolved into an extratropical cyclone over sea areas south of Honshu, Japan the next evening.

Bualoi (1921) formed as a tropical depression over the western North Pacific about 1 350 km east-southeast of Guam on the morning of 19 October. It tracked generally northwestwards and intensified rapidly. Bualoi intensified into a super typhoon on the afternoon of 22 October and reached its peak intensity with an estimated sustained wind of 205 km/h near its centre. It turned to track northeast and weakened gradually in the following two days. Bualoi finally evolved into an extratropical cyclone over sea areas east of Japan on the afternoon of 25 October.

Matmo (1922) formed as a tropical depression over the southern part of the South China Sea about 210 km east-northeast of Nansha on the morning of 29 October. It moved generally westward towards the southern part of Vietnam and intensified gradually. Matmo intensified into a severe tropical storm the next night and reached its peak intensity with an estimated sustained wind of 90 km/h near its centre. Matmo moved across the southern part of Vietnam on 31 October and then degenerated into an area of low pressure over Indo-China in the evening.

NOVEMBER TO DECEMBER

Halong (1923) formed as a tropical depression over the western North Pacific about 1 390 km east of Guam on the night of 2 November. It tracked northwestwards and intensified gradually. Halong developed into a super typhoon on 5 November and reached its peak intensity with an estimated sustained wind of 250 km/h near its centre. Halong then turned to move north to northeastwards gradually and weakened in the following three days. It finally evolved into an extratropical cyclone over the seas on 9 November.

Nakri (1924) formed as a tropical depression over the southern part of the South China Sea about 380 km north of Nansha on the morning of 5 November. It moved slowly at first and lingered over the southern part of the South China Sea. Nakri developed into a severe tropical storm on the morning of 7 November and reached its peak intensity on the afternoon of 8 November with an estimated sustained wind of 110 km/h near its centre. Nakri turned to move west towards the central part of Vietnam afternoon and finally degenerated into an area of low pressure over the central part of Vietnam on 11 November.

According to press reports, Nakri brought at least two deaths during its passage to Vietnam.

Fengshen (1925) formed as a tropical depression over the western North Pacific about 2 220 km east of Guam on the night of 11 November. It generally moved west to west-northwest and intensified gradually. Fengshen intensified into a typhoon on the morning of 15 November and started to turn northeastwards. It further intensified into a severe typhoon that night and reached its peak intensity with an estimated sustained wind of 165 km/h near its centre. Fengshen turned to move southeast on 17 November and weakened rapidly. It degenerated into an area of low pressure over sea areas that night.

Kalmaegi (1926) formed as a tropical depression over the western North Pacific about 890 km east-southeast of Manila on the morning of 13 November. It generally move northwest to north-northwest towards the seas east of Luzon at first. Kalmaegi slowed down on 15 and 16 November, and lingered over the seas east of Luzon. It intensified into a tropical storm on the small hours of 17 November and tracked generally northwest towards the vicinity of Luzon Strait. Kalmaegi further intensified into a typhoon on the morning of 19 November and reached its peak intensity with an estimated sustained wind of 120 km/h near its centre. Kalmaegi turned to move south-southwest and made landfall over the northern part of Luzon the next day. Kalmaegi weakened rapidly after landfall and finally degenerated into an area of low pressure over Luzon on the afternoon of 20 November.

Fung-wong (1927) formed as a tropical depression over the western North Pacific about 800 km east of Manila on small hours of 20 November. It moved towards the seas east of Taiwan and intensified gradually. Fung-wong developed into a severe tropical storm on 21 November and reached its peak intensity with an estimated maximum sustained wind of 110 km/h near its centre. Fung-wong weakened rapidly afterwards and finally degenerated into an area of low pressure over the sea areas east of Taiwan on the small hours of 23 November.

Kammuri (1928) formed as a tropical depression over the western North Pacific about 830 km east-southeast of Guam on the small hours of 26 November. It moved west-northwest and intensified gradually. Kammuri developed into a typhoon on 29 November and moved west towards the sea areas east of the Philippines. Kammuri further developed into a super typhoon on the night of 2 December and reached its peak intensity with an estimated maximum sustained wind of 185 km/h near its centre. It moved across the central part of the Philippines and entered the South China Sea on 3 December, and then weakened rapidly. Kammuri turned to move southwestwards on 5 December and finally degenerated into an area of low pressure over the southern part of the South China Sea that night.

According to press reports, Kammuri brought torrential rain and squalls to the Philippines, leading to at least 17 deaths, two missing and 322 injuries. Under the influence of Kammuri, there was widespread power outage across the southeastern part of Luzon. Manila Airport was also closed with over 500 flights cancelled.

Phanfone (1929) formed as a tropical depression over the western North Pacific about 410 km southeast of Yap on the early morning of 22 December. It moved west-northwest and intensified gradually. Phanfone intensified into a typhoon on the afternoon of 24 December and crossed the central part of the Philippines. It reached its peak intensity with an estimated maximum sustained wind of 145 km/h near its centre in the next afternoon. After entering the South China Sea, Phanfone slowed down on 27 December and weakened rapidly over the central part of the South China Sea under the influence of the dry northeast monsoon. Phanfone finally degenerated into an area of low pressure over the central part of the South China Sea on the afternoon of 28 December.

According to press reports, Phanfone brought torrential rain and squalls to the Philippines during its passage, leading to at least 57 deaths, six missing and 369 injuries, with more than 3.2 million people affected and over 530 000 houses damaged.

Note: Casualties and damage figures were compiled from press reports.

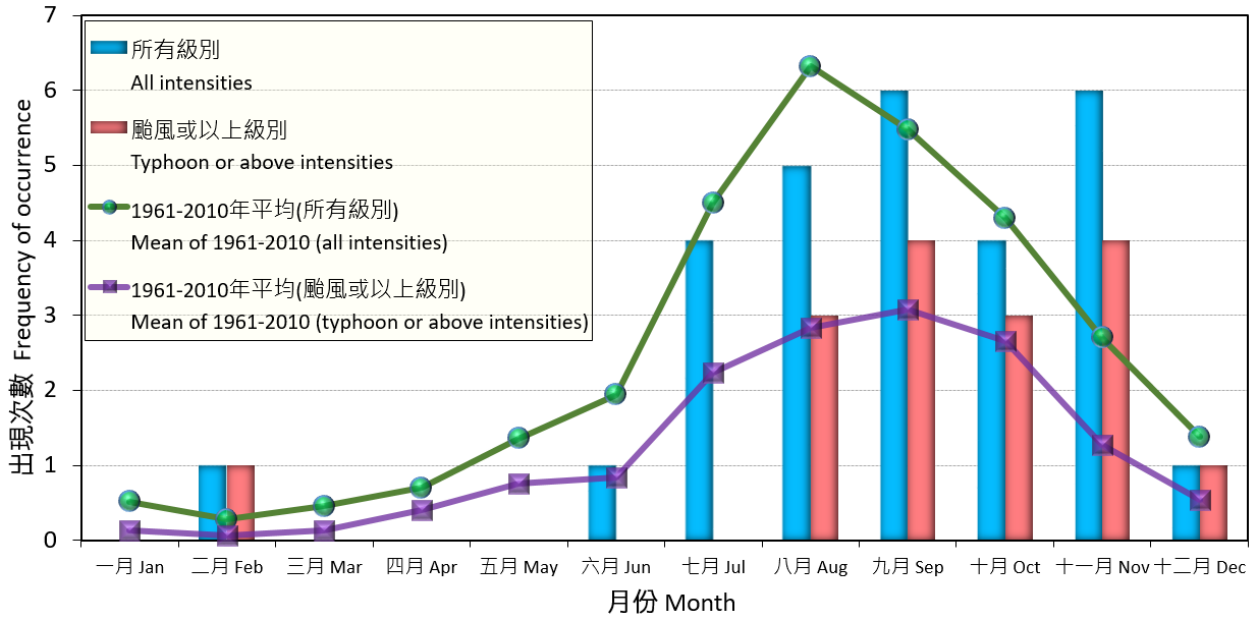

圖 2.1　二零一九年在北太平洋西部及南海區域的熱帶氣旋出現次數之每月分佈 (以熱帶氣旋在該月初次出現為準，假如一熱帶氣旋在九月形成並在十月首次增強為颱風或以上級別，它在「所有級別」及「颱風或以上級別」的統計數字將分別計算在九月及十月份內)。

Figure 2.1 Monthly frequencies of the occurrence of tropical cyclones in the western North Pacific and the South China Sea in 2019 (based on the first occurrence of the tropical cyclone in the month; for example if a tropical cyclone forms in September and first intensifies into typhoon or above intensities in October, its related statistics for “all intensities” and “typhoon or above intensities” will be counted in September and October respectively).

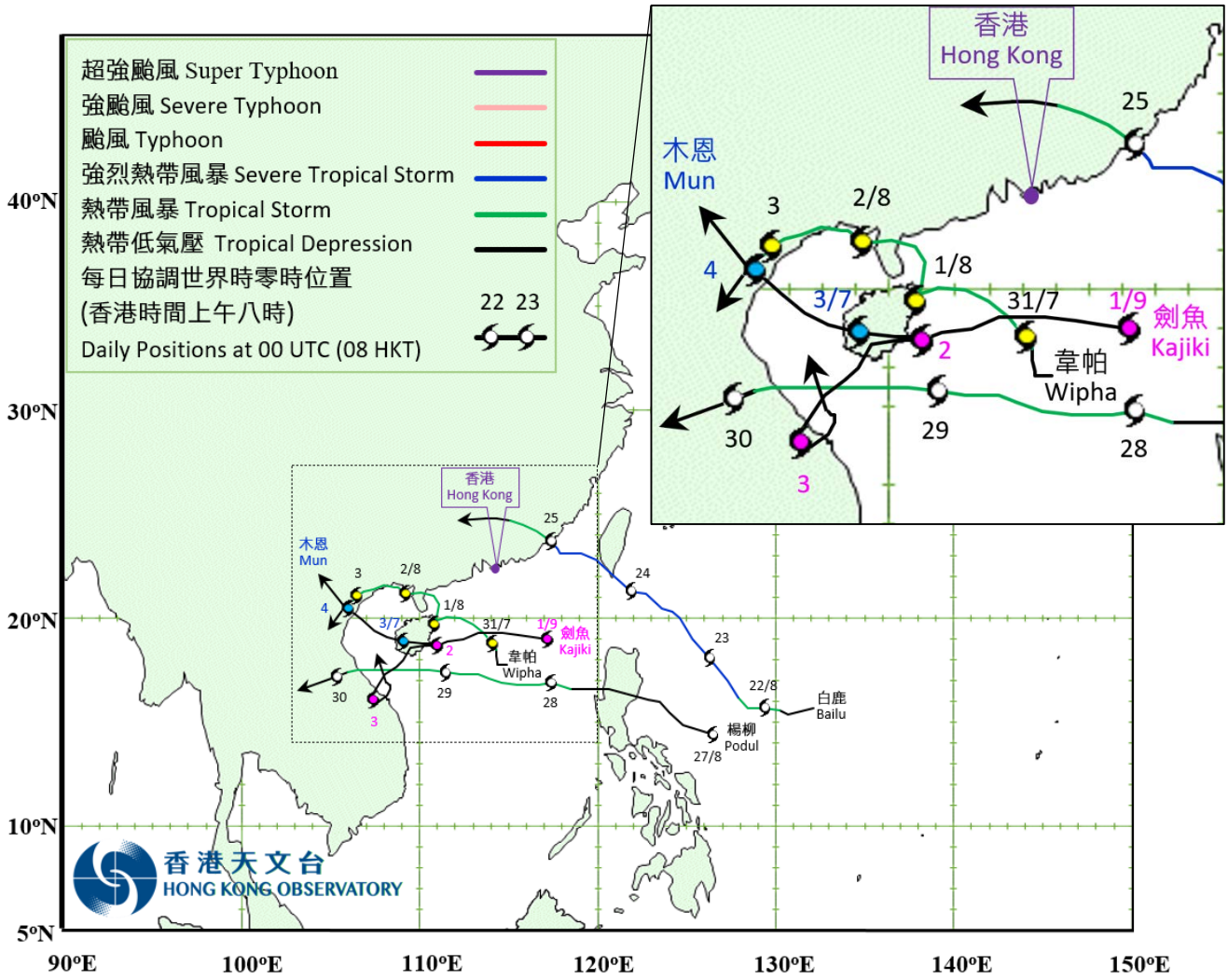

圖 2.2　　二零一九年五個影響香港的熱帶氣旋的路徑圖。

Figure 2.2　　Tracks of the five tropical cyclones affecting Hong Kong in 2019.

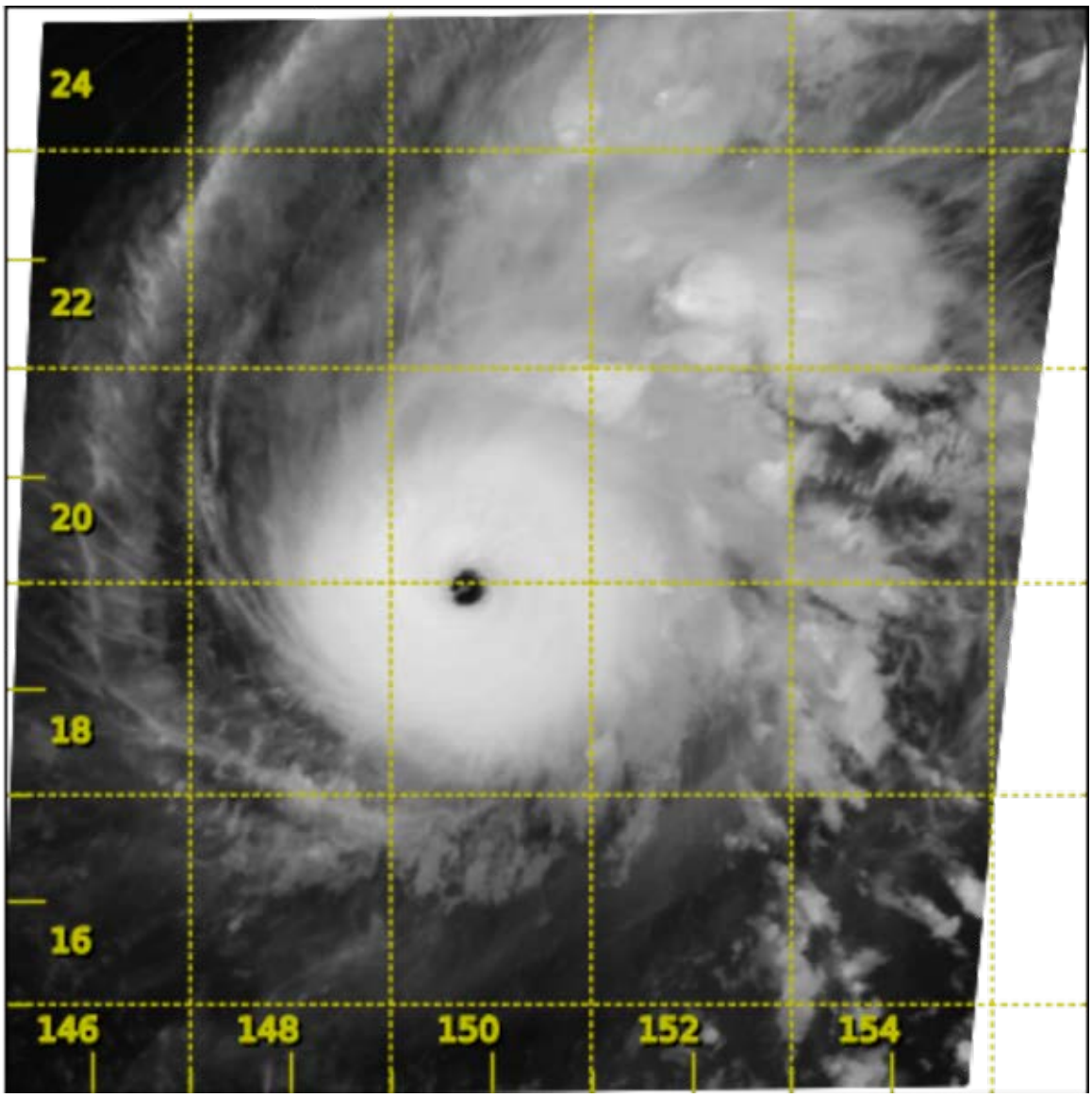

圖2.3　二零一九年十一月五日下午8時左右超強颱風夏浪(1923)的紅外線衛星圖片，當時夏浪達到其最高強度，中心附近最高持續風速估計為每小時250公里，而最低中心氣壓為905百帕斯卡。

Figure 2.3　Infra-red satellite imagery of Super Typhoon Halong (1923) around 8 p.m. on 5 November 2019, when Halong was at peak intensity with estimated maximum sustained winds of 250 km/h near its centre and minimum sea-level pressure of 905 hPa.

〔此衛星圖像接收自日本氣象廳的向日葵8號衛星。〕

[The satellite imagery was originally captured by the Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

表 2.1　在香港責任範圍內(10°-30°N, 105°-125°E)熱帶氣旋出現之每月分佈(以熱帶氣旋在該月初次出現為準)

Table 2.1　Monthly distribution of the occurrence of tropical cyclones in Hong Kong's area of responsibility (10° - 30°N, 105° - 125°E), based on the first occurrence of the tropical cyclone in the month

月份 Month / 年份 Year	一月 Jan	二月 Feb	三月 Mar	四月 Apr	五月 May	六月 Jun	七月 Jul	八月 Aug	九月 Sep	十月 Oct	十一月 Nov	十二月 Dec	共 Total
1961					3	5	2	5	4	3	1	1	24
1962					3		4	5	4	1	3		20
1963						3	3	3	2			2	13
1964					1	1	5	3	6	3	6	1	26
1965	1				2	3	4	3	2		1		16
1966					2		5	2	3	2	2	1	17
1967			1	1		1	2	6	1	2	3		17
1968							2	4	2	1	3		12
1969							3	3	4	1			11
1970		1				2	2	3	4	5	3		20
1971				1	2	2	5	3	3	4			20
1972	1					3	2	4	2	1	1	1	15
1973							4	4	2	4	3		17
1974						3	2	4	2	4	4	2	21
1975	1					1		3	2	3	1	1	12
1976					1	1	1	4	1		1	1	10
1977						1	4	1	3		1		10
1978	1			1		2	2	4	5	4	1		20
1979				1	2	1	3	5	2	2	1	1	18
1980			1		3	1	5	2	3	1	1		17
1981						3	3	3	1	1	3	1	15
1982			2		1	1	3	3	3	1		2	16
1983						1	3	1	3	5	2		15
1984						2	2	4	2	2	2		14
1985						2	2	2	4	4	1		15
1986					1	1	1	4	1	3	3	2	16
1987						1	3	2	1	1	3	1	12
1988	1				1	3	1	1	2	5	2	1	17
1989					2	1	4	2	4	3	1		17
1990					1	4	2	3	3	3	2		18
1991				1	1	1	3	2	2	1	3		14
1992						2	3	2	2	2			11
1993						1	1	2	3	2	2	3	14
1994				1	1	2	6	5	2	2		1	20
1995						1	1	5	5	3	1	1	17
1996		1		1	2		3	3	2	1	2		15
1997					1		1	4	1	2	1		10
1998							1	3	4	3	3	1	15
1999				1		1	1	2	3	2	1	1	12
2000					2	1	3	5	3	3	2	1	20
2001					1	2	4	2	2	1	1	1	14
2002	1					1	3	2	3				10
2003				1	1	2	2	3	1	1	1		12
2004			1		1	3	2	2	2	1	2	1	15
2005			1				2	3	4	3	2		15
2006					1	1	3	3	4	1	2	1	16
2007							1	4	3	1	3		12
2008				1	2	1	2	3	5	1	2		17
2009					2	2	3	2	3	4	1		17
2010							3	4	2	2			11
2011					2	3	1	2	2	2			12
2012				1		3	2	3	1	2		2	14
2013						2	3	4	4	3	3		19
2014	1					1	2		3		1	2	10
2015	1			1	1	1	2	2	2	2		1	13
2016					1		3	1	4	3	1	2	15
2017	1			1		1	6	3	4	2	3	1	22
2018	1					2	4	4	2	1	2	1	17
2019							3	3	3	1	3	2	15
平均 Average (1961-2010)	0.1	0.0	0.1	0.2	0.8	1.4	2.6	3.1	2.7	2.1	1.7	0.6	15.6

表 2.2　　影響香港的熱帶氣旋之每月分佈

Table 2.2　　Monthly distribution of tropical cyclones affecting Hong Kong

月份 Month # / 年份 Year	一月 Jan	二月 Feb	三月 Mar	四月 Apr	五月 May	六月 Jun	七月 Jul	八月 Aug	九月 Sep	十月 Oct	十一月 Nov	十二月 Dec	共 Total
1961					1		3		2				6
1962							2	1		1			4
1963						1	1	1	1				4
1964					1	1		1	4	3			10
1965						1	2		2		1		6
1966					1		3	1	1				6
1967				1		1	1	3		1	1		8
1968							1	3	2				6
1969							1		2	1			4
1970							1	2	1	2			6
1971					1	2	3	1	1	1			9
1972						2	1	1			1		5
1973							2	3	2	2			9
1974						2	1		2	4	1	1	11
1975						1		1	2	3			7
1976						1	1	2	1				5
1977						1	3	1	3				8
1978				1			1	2	2	2			8
1979							2	2	2				6
1980					1	1	4	1	2	1			10
1981						1	2	1	1				5
1982						1	2		1	1			5
1983							3		2	2			7
1984						1	1	2	1				5
1985						1	1		2	1			5
1986							1	2		1			4
1987						1		2	1	1			5
1988					1	1	1		1	2			6
1989					1	1	2		1	2			7
1990					1	2	1	1	1				6
1991							3	1	2				6
1992						1	3	1					5
1993						1	1	2	3	1	1		9
1994						2		1	1				4
1995							1	4	2	1			8
1996							2	2	2	1			7
1997							1	1					2
1998								2	1	2			5
1999				1		1	1	1	3	1			8
2000						1	2	2	1		1		7
2001						2	2	1	1				6
2002								2	1				3
2003							2	1	1				4
2004						1	1	1					3
2005								1	2				3
2006					1	1		3	1	1			7
2007								1	1				2
2008				1		1		2	1	1			6
2009						2	2	1	3				8
2010							2	1	1	1			5
2011						2	1		1	1			5
2012						2	1	2					5
2013						2	1	2	1		1		7
2014						1	1		2				4
2015						1	1			1			3
2016					1		2	1	2	3			9
2017						1	1	2	2	1			7
2018						1	1	1	2	1			6
2019							2	2	1				5
平均 Average (1961-2010)	0.0	0.0	0.0	0.1	0.2	0.7	1.5	1.3	1.5	0.9	0.1	0.0	6.0

熱帶氣旋警告信號首次發出的月份。# The month that the tropical cyclone warning signal was first issued.