

Three western pacific typhoons strengthened fire weather in the recent conflagration in northwest U.S.

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Text S1.

By following the forecast evaluation based on typhoons as shown in Figure 3, we adopted a reverse approach by evaluating the North American circulation pattern and used the hit-and-miss forecast grouping to examine the preceding typhoon. Here, we applied the spatial correlation analysis to the 250-hPa geopotential height eddy (HGT_{250E} , with the zonal mean removed) between forecast and reanalysis within the domain outlined in Figure S1; we also computed the variance of HGT_{250E} over this domain. Then, we used correlation coefficients less than 0.3 and the variance ratio smaller than 40% (of the observed) as the threshold to identify forecast that is a “miss” of the North American circulation pattern and associated typhoon. By using correlation coefficients greater than 0.8 and variance smaller than 60% as the threshold, we identified the forecast as a “hit”. The resultant composite circulations are shown in Figures S1-S3.

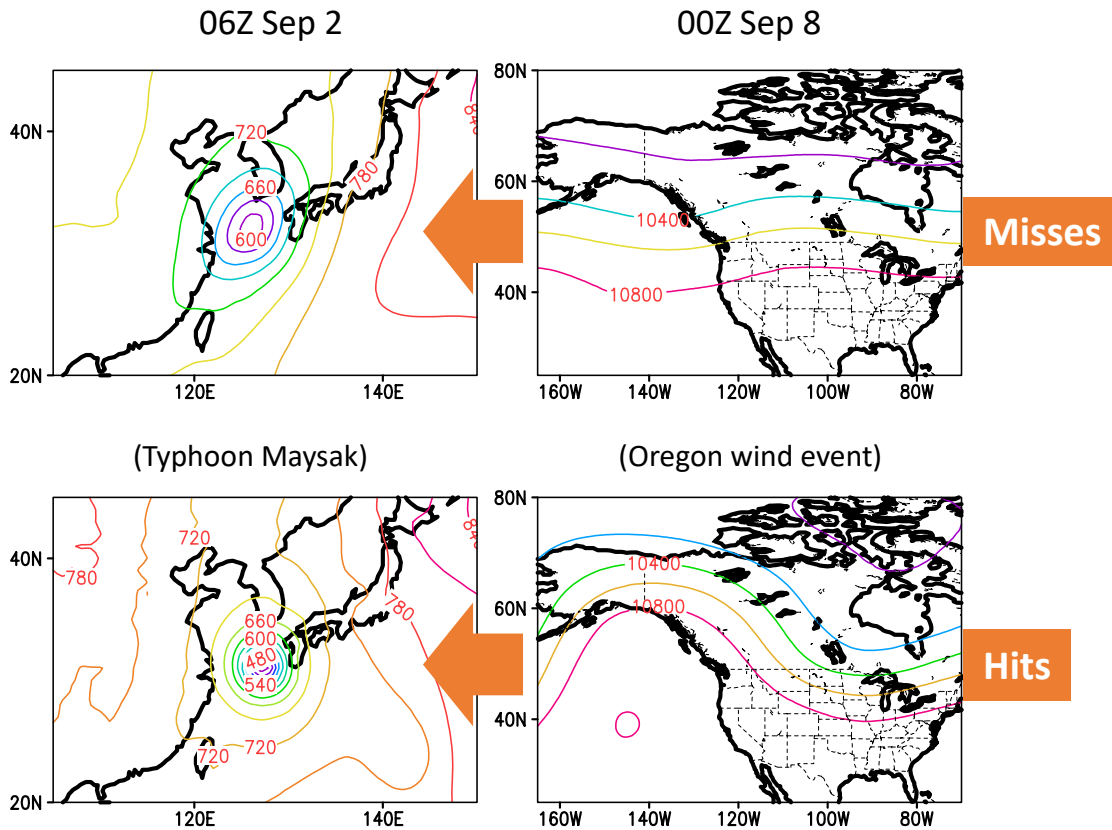


Figure S1. The “missed” September 8 North American wave pattern at 250 hPa and associated typhoon on September 2 (Maysak) at 925 hPa in terms of geopotential height (unit: meter). The orange arrows indicate the direction of our evaluation that is based on the North American circulation. Note the high-amplitude ridge and trough in western and central North America, respectively.

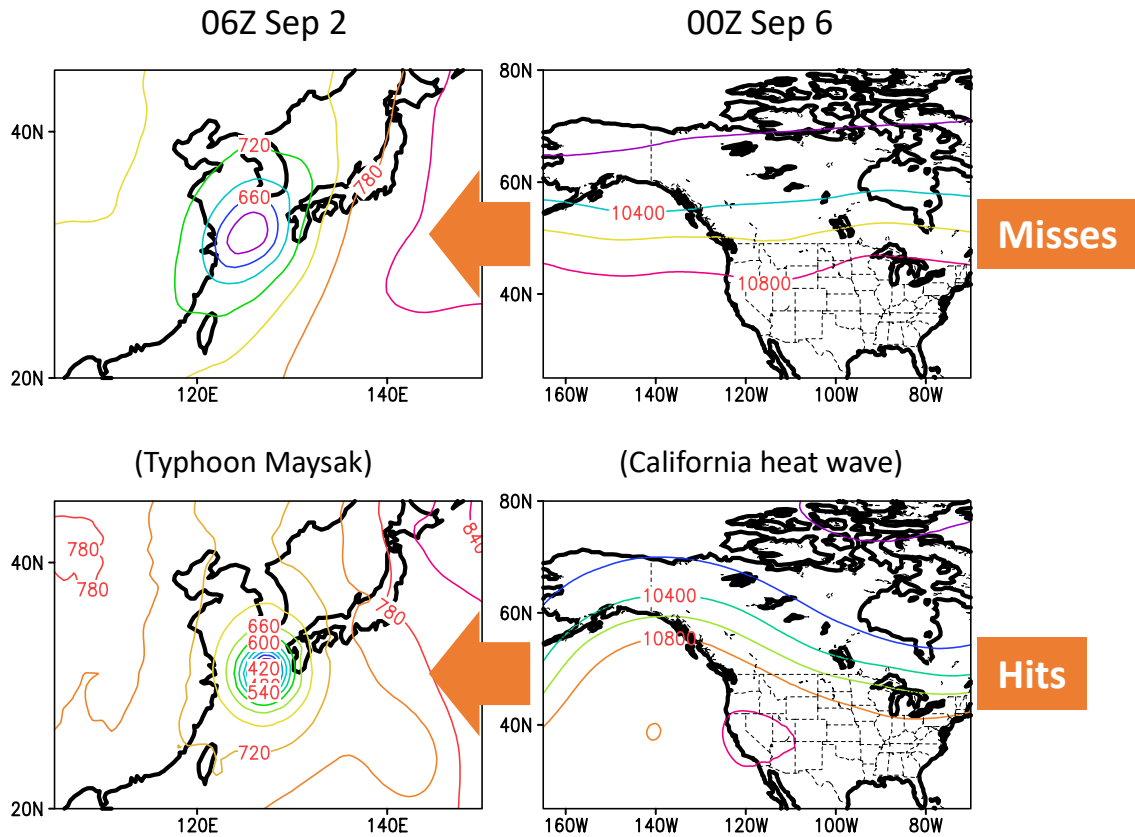


Figure S2. Same as Figure S1 but for the September 6 North American circulation pattern, in which the California heatwave occurred, and associated forecast difference of Typhoon Maysak.

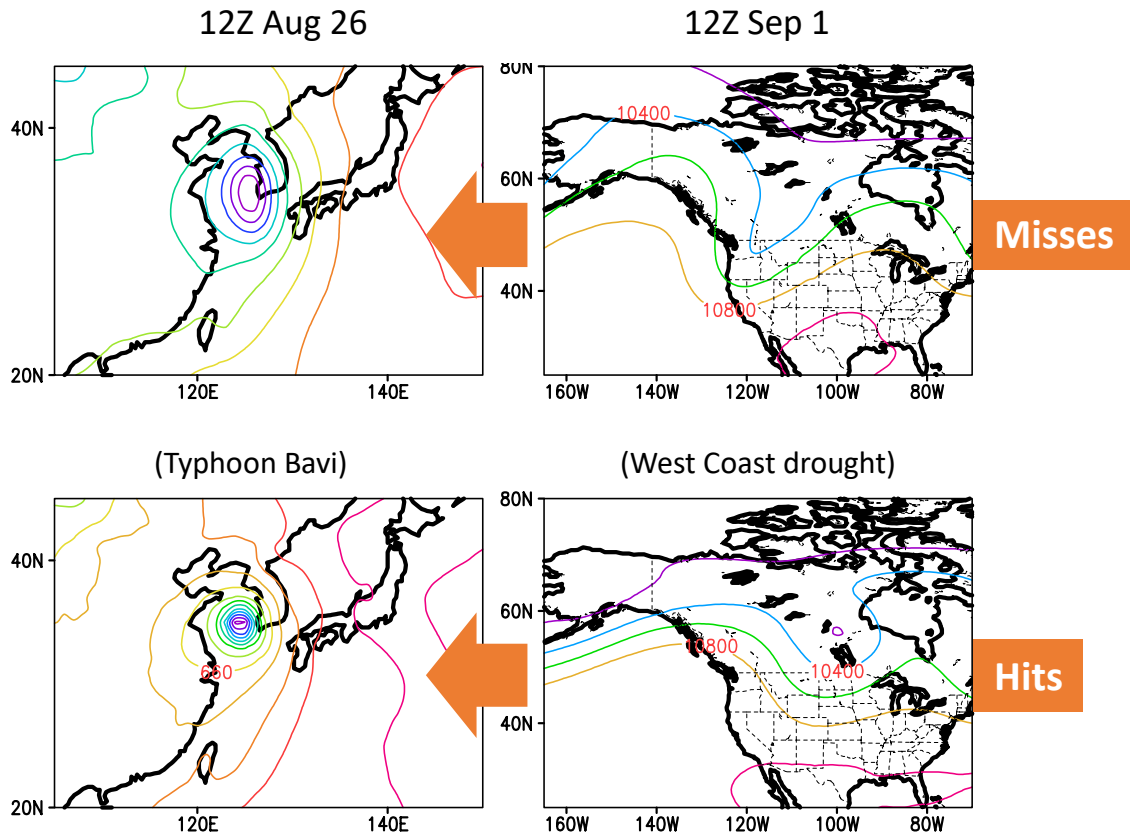


Figure S3. Same as Figure S1 but for September 1's ridge buildup in western North America and associated forecast difference of Typhoon Bavi.