Hurricanes and typhoons are a regular threat to large populations across the globe. Facing the potential of a storm disaster the warning process and associated administrative activities across the western North Pacific are confounded by various tropical cyclone classifications. Here, we show that current storm warning categories have suffered from the warming environment over the past decades. Warning now at an average of one out of four storms, the category of ‘Super typhoon’ from U.S. Joint Typhoon Warning Center is seriously influenced by the warming environment. The categories of ‘Very strong typhoon’ from Japan Meteorological Agency, ‘Hurricane category 4’ from U.S. National Hurricane Center and the higher now occur as often as one per nearly every three storms. The cumulative proportions of storms falling into all warning categories are enlarging, which is interpreted as an increasing threat but the frequency of warnings is potentially making the warnings less effective.

**Key words:** Hurricane, typhoon, Storm, warming environment, Warning process

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