Monthly Summary of Tropical Cyclones that Entered the Philippine Area of Responsibility[‡]

February 2015

Overview

There was no tropical cyclone (TC) that entered the Philippine Area of Responsibility (PAR) in this month. Because of that, the present report provides climatological TC information for the benefit of the readers. In addition, this report highlights some of the noted differences among the TC best track data provided by the Joint Typhoon Warning Center (JTWC); the Japan Meteorological Agency (JMA); and the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA).

The non-occurrence of TC during this month is in line with the slim chance of having a TC to affect the country in February. Climatologically, there were just 23 TCs that existed within the PAR during this month from 1951 to 2014. Among such TCs, eight have crossed the Philippine landmass. The last TC that existed within the PAR and crossed the country's landmass during the month of February was observed last year [Tropical Depression (TD) Basyang]. Basyang originated northeast of Palau as a low-pressure area (LPA). It strengthened into a TD as it entered the PAR in the evening of January 30, 2014 (around 9:00 PM, Philippine Standard Time). It moved into west-northwest direction traversing the northeastern sections of Mindanao and southwestern portions of the Visayas through the northern tip of Palawan. It weakened and dissipated as it approached the western boundary of the PAR in the evening of February 1, 2014.

[‡] Please address your concerns regarding this report either to the Chief of Climatology and Agrometeorology Division or to the Chief of Weather Division, Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Science Garden Complex, Agham Road, Diliman, Quezon City.

Climatological TC information

During the month of February, 23 TCs existed in the PAR from 1951 to 2014 (Fig. 1a). Two notable characteristics of these TCs have been observed. First, the TCs tended to move in the west- to northwestward direction and hit the regions of central and southern Philippines. Second, the TCs moved in a northwestward direction and then re-curved to the northeast direction as they approached 15°N; they were primarily the non-landfalling TCs. Among the 23 TCs that existed within PAR, 8 TCs (34.78%) crossed the Philippine landmass (Fig. 1b). Primarily, the TCs that crossed and/or hit any region in the country are the west- to northwestward moving TCs. Notably, three of these landfalling TCs were observed in the 2000s, two in the '90s, one in the '80s, '70s, and '50s, while there was no TC that crossed the country during the month of February in the '60s.

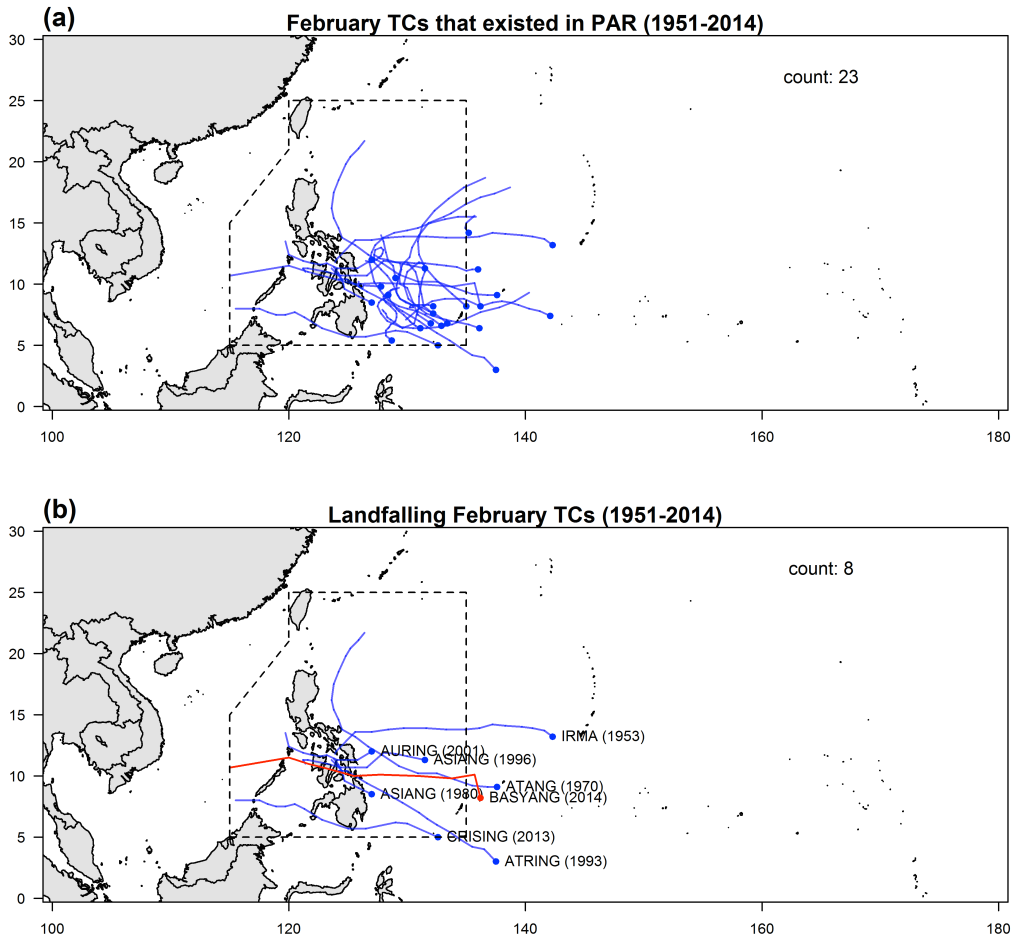

Fig. 1. Tracks of TCs: (a) that existed in the PAR and (b) that hit/crossed any land region of the Philippines in February from 1951 to 2014.

The most recent TC that crossed the country during the month of February was observed last year (TD Basyang). Basyang (marked with red track in Fig. 1b) originated northeast of Palau as a low-pressure area (LPA). It strengthened into a TD as it entered the PAR in the evening of January 30, 2014 (around 9:00 PM, Philippine Standard Time). It moved into west-northwest direction traversing the northeastern

sections of Mindanao and southwestern portions of the Visayas through the northern tip of Palawan. It weakened and dissipated as it approached the western boundary of the PAR in the evening of February 1, 2014.

The statistics provided above were based on the PAGASA estimated TC tracks. However, several studies have noted that discrepancies exist among the different TC data sources (e.g., Barcikowska et al., 2012; Kamahori et al., 2006; Knapp and Kruk, 2010; Ren et al., 2011). It has to be noted as well that the statistics provided in our previous report were based on the JTWC best track data. Hence, the next section provides a brief comparison of TC statistics based upon the different TC data sources (i.e., JMA, JTWC, and PAGASA).

Climatological TC information based on different data sources

As of the time of writing this report, the JTWC best track data covers only until 2013. Because of that, we compare the different TC best tracks based on a common period of data availability among the different data sources considered in this report (1951–2013). Figure 2 shows the TCs that entered and/or existed in the PAR from 1951 to 2013 based on the estimated best tracks of JMA (Fig. 2a), JTWC (Fig. 2b), and PAGASA (Fig. 2c). As expected, substantial differences exist among the estimated TC tracks. According to the JMA, JTWC, and PAGASA, 11, 17, and 22 TCs existed within the PAR during the month of February from 1951 to 2013, respectively. The reason why JMA has the lowest number of identified TCs that existed in the PAR is primarily because it does not include TCs that did not reach tropical storm (TS) intensity (≥34 kt; approximately, ≥62 kph), particularly after 1976 when the maximum sustained winds were included in the TC best track data. Additionally, JMA uses the 10-min maximum sustained winds (similar to PAGASA) that relatively underestimate the JTWC's 1-min wind average by approximately 12% (Lander, 2008). PAGASA, on the other hand, has reported the highest number of TCs that entered or existed within the PAR during the month of February because it included the TCs with intensities of lower than TS. In addition, PAGASA reported TCs, even those of TD intensity (<62 kph; 1 kph ≈ 0.28 m s^{-1}) as long as they pose potential risks in any activities that might be undertaken in the country; these were primarily the TCs that formed within the PAR.

Aside from the differences mentioned previously, the sites where the TCs were generated (blue dots in Fig. 2) are located farthest to the east according to the JTWC, and closest to the eastern boundary of the PAR according to PAGASA. Such discrepancies are partly related to the reasons mentioned earlier, particularly between the JMA and the JTWC best track data. For PAGASA, the genesis points are closer to the PAR because the agency begins monitoring individual TCs only when they are closely approaching the PAR; and hence, they may not be the real TC genesis points, particularly those that are generated very far from the eastern boundary of the PAR. Given the discrepancies noted in this report, the succeeding reports will provide TC climatological statistics and relevant information about the TC during its existence inside the PAR based on the PAGASA dataset. Whenever needed, additional information about the TC (outside the PAR) will be provided using information taken either from the JMA or the JTWC, but the source will be explicitly stated.

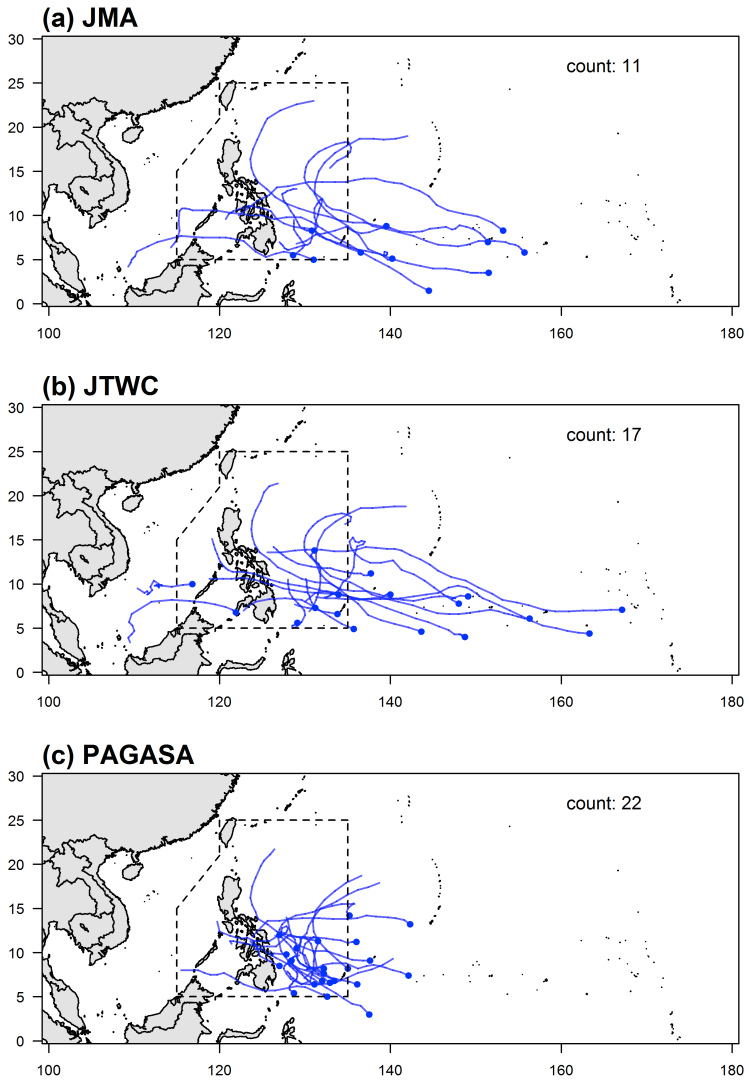

Fig. 2. Tracks of TCs that existed in the PAR during the month of February from 1951 to 2013 based on (a) JMA, (b) JTWC, and (c) PAGASA.

References

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