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Tornado Climatology of Poland

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Very few studies on the occurrence of tornadoes in Poland have been performed and, therefore, their temporal and spatial variability have not been well understood. This article describes an updated climatology of tornadoes in Poland and the major problems related to the database. In this study, the results of an investigation of tornado occurrence in a 100-yr historical record (1899–1998) and a more recent 15-yr observational dataset (1999–2013) are presented. A total of 269 tornado cases derived from the European Severe Weather Database are used in the analysis. The cases are divided according to their strength on the F scale with weak tornadoes (unrated/F0/F1; 169 cases), significant tornadoes (F2/F3/F4; 66 cases), and waterspouts (34 cases). The tornado season extends from May to September (84% of all cases) with the seasonal peak for tornadoes occurring over land in July (23% of all land cases) and waterspouts in August (50% of all waterspouts). On average 8–14 tornadoes (including 2–3 waterspouts) with 2 strong tornadoes occur each year and 1 violent one occurs every 12–19 years. The maximum daily probability for weak and significant tornadoes occurs between 1500 and 1800 UTC while it occurs between 0900 and 1200 UTC for waterspouts. Tornadoes over land are most likely to occur in the south-central part of the country known as the "Polish Tornado Alley." Cases of strong, and even violent, tornadoes that caused deaths indicate that the possibility of a large-fatality tornado in Poland cannot be ignored.