

Border-Crossing Tornadoes in Europe

Sometimes, tornadoes cross national borders. While the maintenance of a tornadic circulation is only a matter of physical variables and not influenced by political boundaries, there is still a statistical issue when it comes to the counting of tornado cases on a national level. This article discusses examples, the historical practice and current ESWD policy for such cases.

Border-crossing tornadoes are rare in Europe. In this post, we summarize some of the known cases (Table 1.) and explain how ESWD documentation of cross-border paths has evolved. Historically, ESWD practice placed the coordinate point of a tornado at the location where the most severe damage could be determined. If the territory of another country was affected, this was added in the event description. Only a few such events have been observed in the past. All known events since 2019 have been identified through on-site damage assessments conducted by associations or individual groups in the respective countries. Without such analyses, the extent of cross-border damage paths would not be known to this degree.

Date	Intensity	Countries	Main locations along the path
18 Jul 1918*	F2	Germany / Poland	Rosengarten, Frankfurt an der Oder, (Oder River), Schwetig / Świecko
29 Jul 2009	IF0	Germany / Poland	Bleyen, (Oder River), Kostrzyn nad Odrą
13 Mar 2019	IF2.5	Belgium / Germany	Petersgenfeld, Roetgen, Woffelsbach
09 Aug 2019	IF2.5	France / Luxembourg	Longwy, Longlville, Rodange, Lamadelaine, Pétange, Linger, Käerjeng
23 Oct 2022	IF1.5	France / Belgium	Nivelle, Thun-Saint-Amand, Rouillon, Callenelle
09 Jun 2024	IF2	Austria / Hungary	Großpetersdorf, Schandorf, Narda, Torony
05 Jun 2025	IF1.5	Lithuania / Belarus	Musteika, Zamosh'e

Documented border-crossing tornadoes in Europe (1918–2025). * The tornado was not a border-crossing event during the period of occurrence but became so after reassignment of national territories in 1945.

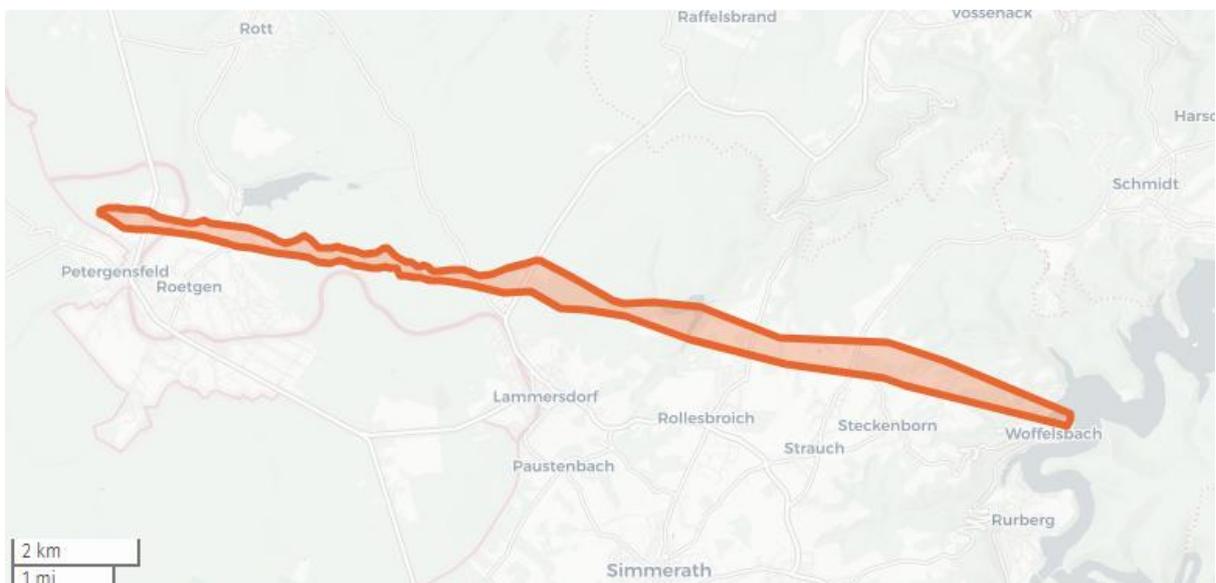
Regarding the borders of European countries, it should be noted that national boundaries have often changed due to armed conflicts or peace treaties, meaning that some tornadoes which would today be classified as border-crossing may not have fallen into this category at the time

of their occurrence. An early example of such a border-crossing tornado is the strong F2 tornado of **18 July 1918**, which moved across the southern parts of the city of Frankfurt an der Oder (Germany), crossed Oder river, and destroyed forests east of the river (in what is today Polish territory).

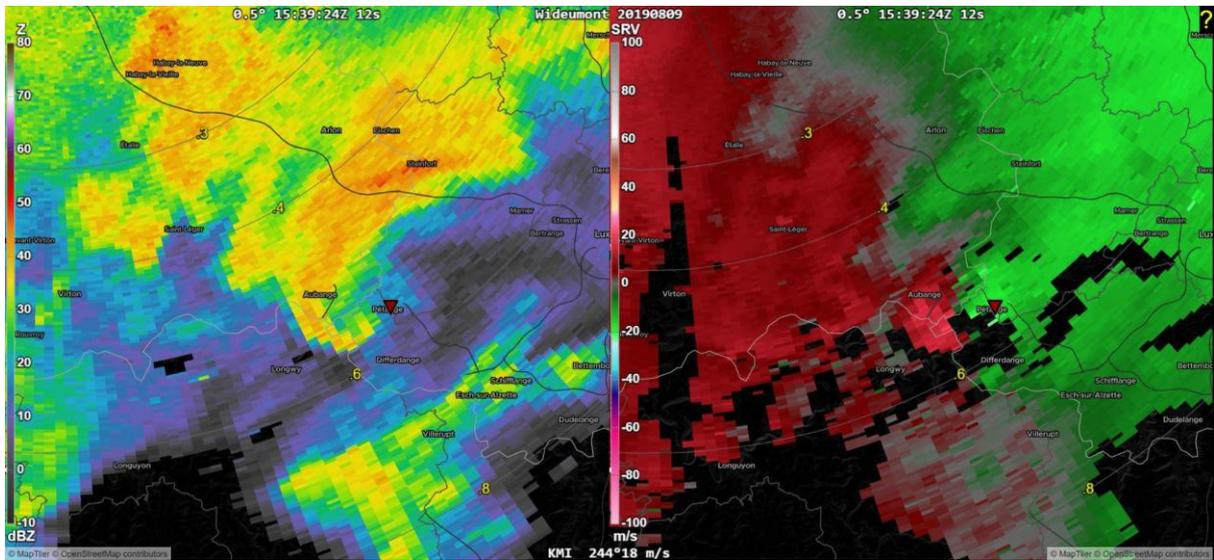


Reconstruction of the tornado path on 18 July 1918 (based on scientific survey: Seilkopf, H.: *Über die Windhose von Frankfurt a.d. Oder am 18. Juli 1918 und die Beziehungen zwischen Wetterlage und Trombenbildung*; Meteorologische Zeitschrift, 40, 97 (1923); mapping source: Thilo Kühne (ESSL). OpenStreetMap).

From the period after World War I until the 2000s, no cross-border tornadoes are known, which is likely attributable to the still considerable number of undetected or undocumented cases in these decades. Between 2009 and 2025, six tornadoes in Europe have been documented to have crossed national borders. The affected countries were Germany, Belgium, France, Luxembourg, Poland, Lithuania, Belarus, Austria, and Hungary. The two strongest among them, both of IF2.5 intensity, occurred on **13 March 2019**, beginning in Belgium and producing the most severe damage in Roetgen (Germany), and on **9 August 2019**, beginning in Longwy (France) and causing the strongest damage in Pétange (Luxembourg).

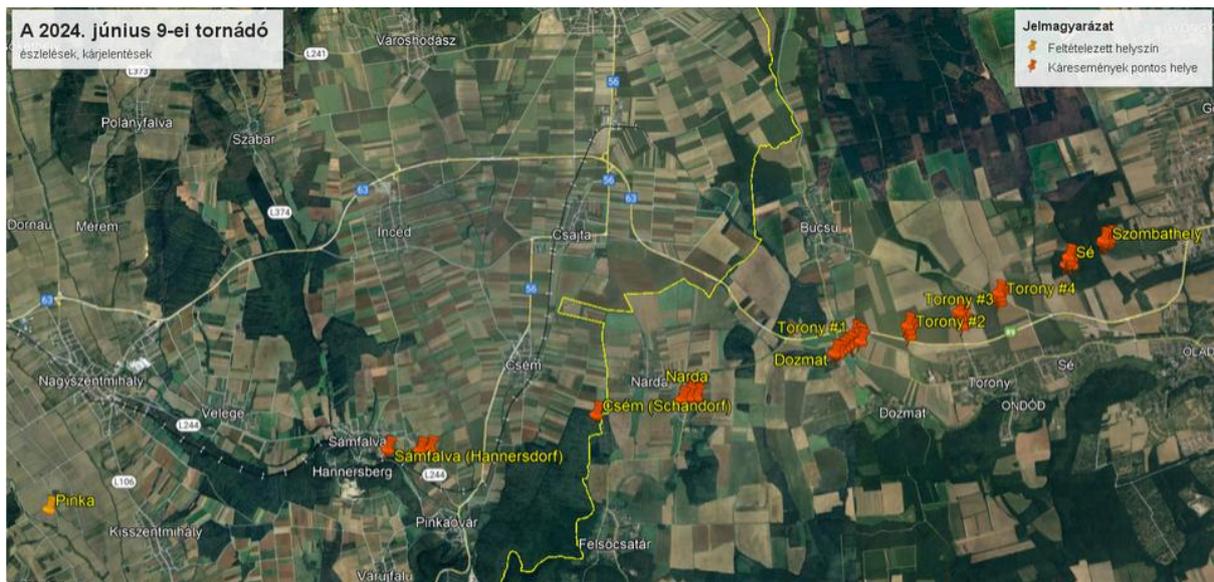


Tornado path mapping of the IF2.5 tornado in Roetgen area on 13 March 2019 (Mapping: Hendrik Sass / TorKUD - torkud.de and OpenStreetMap)

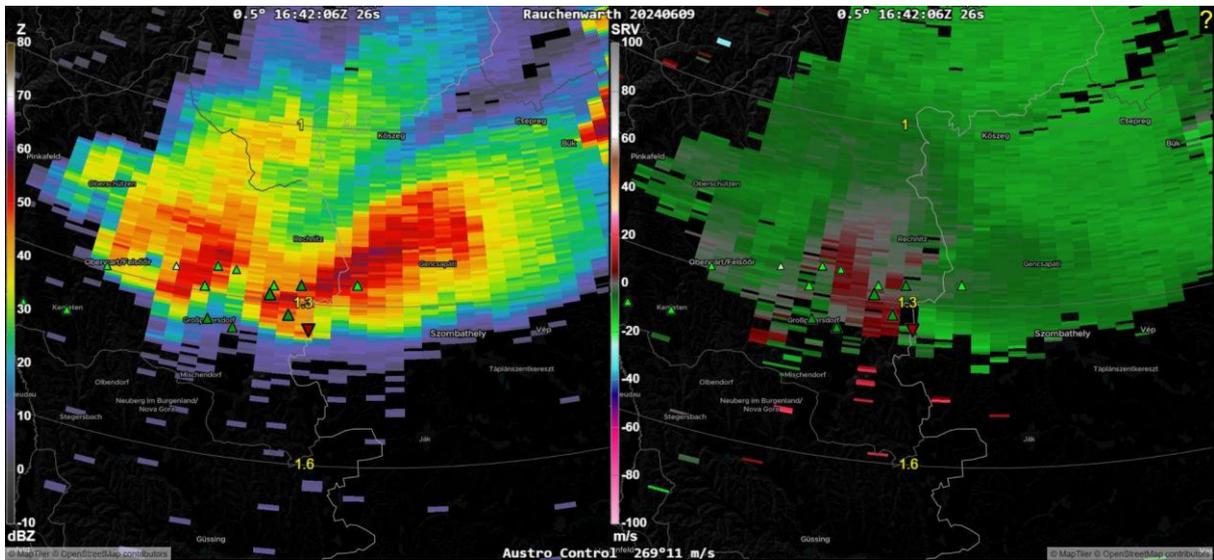


Radar reflectivity (left) and storm-relative radial velocity (right) for the storm that produced the Luxembourg tornado. A pronounced hook echo is visible in reflectivity, while broad but pronounced cyclonic rotation is apparent in radial velocity, with again a data hole due to filtering in the center of the couplet. Screenshot from ESSL Weather Data Displayer.

A well-known recent case of the border-crossing tornado occurred on **9 June 2024**. This tornado was first observed near Großpetersdorf in Austria, crossed the Austrian-Hungarian border slightly south of Schandorf/Narda, and was last seen in the region northwest of Szombathely in Hungary. The most intense damage was found in the forest south of Schandorf (Austria) and in Narda (Hungary).

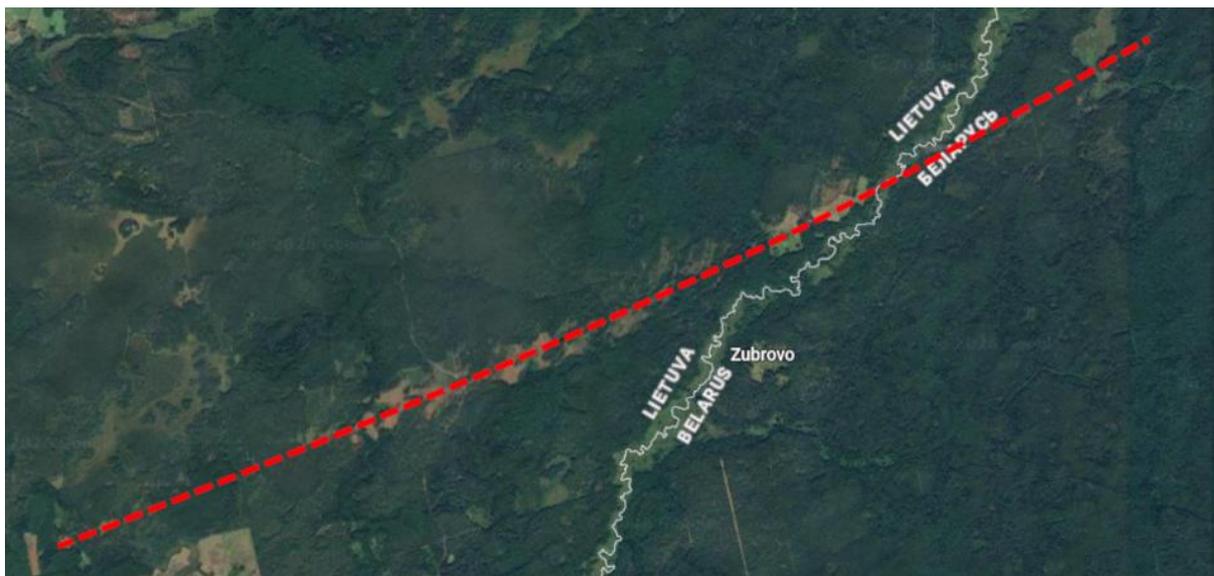


Tornado damage points and path of the IF2 tornado from Schandorf (AT) to Narda and Torony (HU) on 09 JUN 2024 (source: supercella.hu and GoogleEarth)

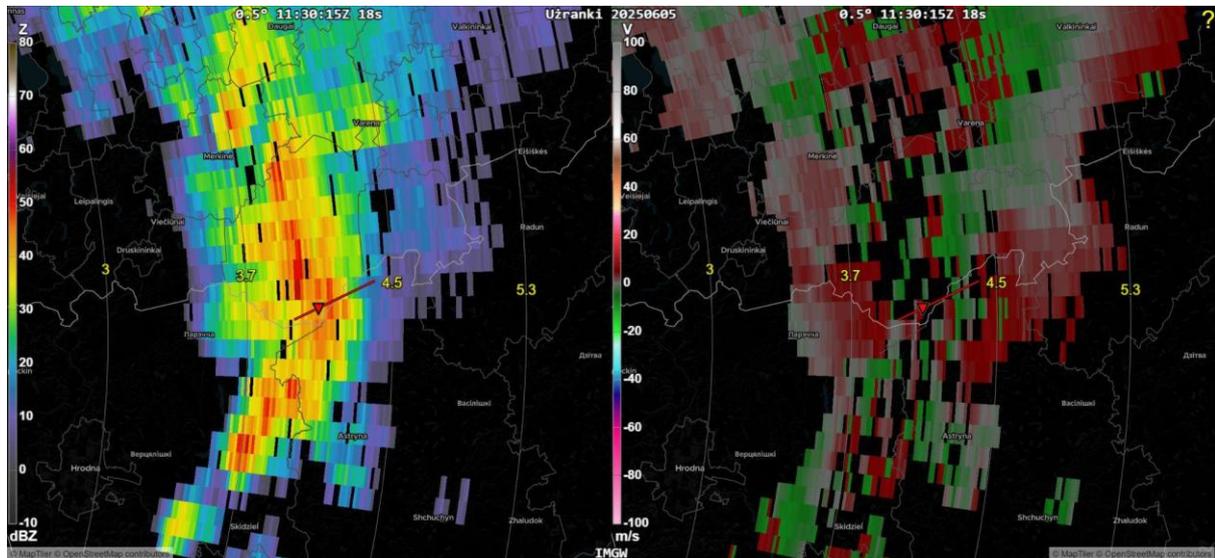


Radar reflectivity (left) and storm-relative radial velocity (right) for the storm that produced the Austrian-Hungarian tornado. A small hook echo is visible in reflectivity, while broad cyclonic rotation is apparent in radial velocity, with again data gaps due to filtering in the center of the couplet. Screenshot from ESSL Weather Data Displayer.

The most recent documented case occurred on **5 June 2025**. This tornado was detected using satellite data, which revealed a narrow, elongated damage path through the forest, measuring up to 17 km in length and 430 meters in width. The tornado originated about 5 km south of Musteika (Lithuania), crossed the Lithuanian–Belarusian border north of Zubrovo (Belarus), and dissipated roughly 3 km northwest of Zamosh'e (Belarus).



Tornado path detected of the IF1.5 tornado in the Lithuania-Belarus border area on 05 June 2025 based on satellite data showing forest damage and tree falls (mapping: ESSL, basemap: GoogleMaps)



Radar reflectivity (left) and radial velocity (right) for the storm that produced the Lithuanian–Belarusian tornado. The large distance to the radar complicates the analysis, among others due to an estimated radar beam height of 4 km. We can see some indications for a small bowing segment in reflectivity however, with the tornado seemingly associated with the northern half of this bowing segment. The radial velocity is not usable here. Screenshot from ESSL Weather Data Displayer.

A particularity in Europe is that many national borders run along elevated mountain terrain, regions that are only very rarely affected by tornadoes. Borders following river valleys or flat terrain are found mainly across Western Europe, the northern and southeastern parts of Central Europe, the Baltic region, far Eastern Europe, as well as along the lower Danube, which separates Bulgaria from Romania, and also between Portugal and Spain. Waterspouts over Lake Constance are a particularity too, as three countries, Germany, Switzerland and Austria, share the area.

For the handling of border crossing events at a supranational level, the current ESWD reporting guidelines stipulate that separate reports must be entered for each country, with an explicit indication that all reports refer to the same tornado event. This rule ensures that all tornadoes touching the territory of a given country are counted in that country and are listed in all affected national tornado lists. Given the overall rare nature of such cases, the statistical effect of such double referencing remains very minor on the European scale.

© ESSL and contributors, 19 March 2026 - Thilo Kühne, ESWD quality control, and the ESWD team.