



## ESWD summary of 2021

**ESSL** has posted annual overviews of the European Severe Weather Database (ESWD) reports on severe weather events via Twitter [@essl\\_ecss](#) and [Facebook](#). Here comes a summary of the year 2021.

In 2021, 361 severe weather events resulted in 1,460 injuries. Ice accumulation events were associated with the largest number of injuries (12 events/543 injuries). The highest injury rate was reported for ice accumulation (45 injuries per event).

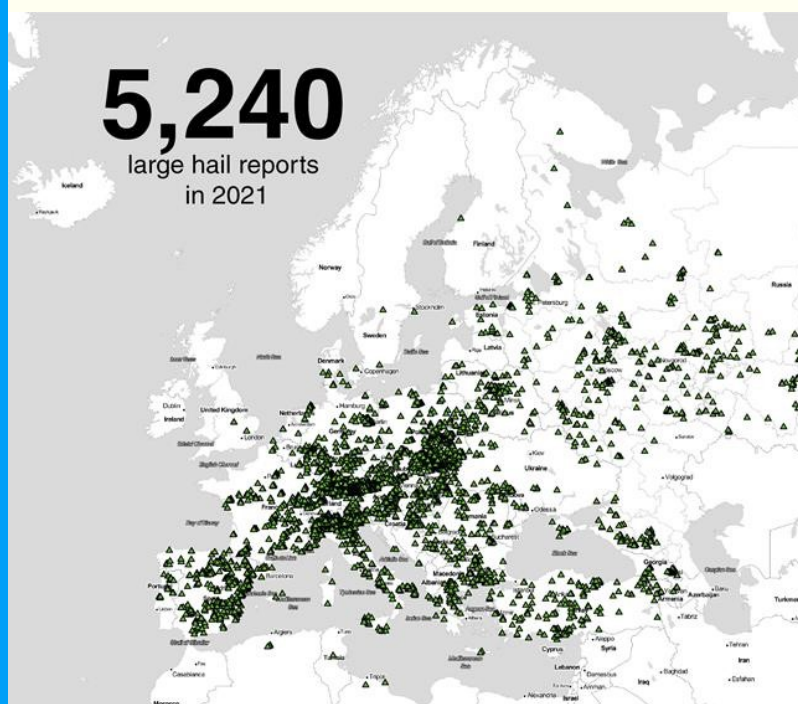
Unfortunately 269 severe weather events resulted in 556 fatalities. The largest number of fatalities was produced by heavy rain (65 events resulting in 295 fatalities). The highest fatality rate was reported for heavy rain (4.5 fatalities per event).

**Large hail** - 5,240 large hail events were reported in Europe. This is the largest number of hail events reported in one year since 2006. Large hail was associated with 43 injuries in 2021.

**Severe wind** - 11,725 severe wind events were reported in Europe. This is the fourth-largest number of severe wind events reported in one year since 2006 (17,226 severe wind events were reported in 2017). Severe wind events were associated with 277 injuries and 50 fatalities in 2021.

**Heavy rain** - 5,739 heavy rain events were reported in Europe. This is the largest number of heavy rain events reported in one year since 2006. Heavy rain was associated with 47 injuries and 295 fatalities in 2021.

**Tornadoes** - 937 tornadoes were reported in Europe. 356 reports were for tornadoes (38% of all reports), 581 (62%) for waterspouts. Tornadoes were associated with 273 injuries and 14 fatalities in 2021.

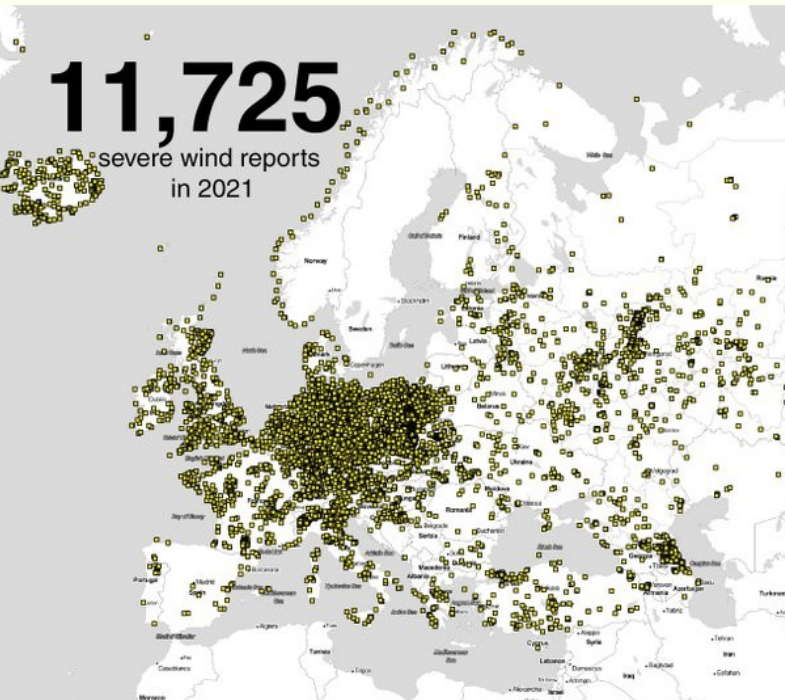


In 2021, **5,240** large hail events were reported in Europe. This is the largest number of hail events reported in one year since 2006. Large hail was associated with **43 injuries** in 2021.

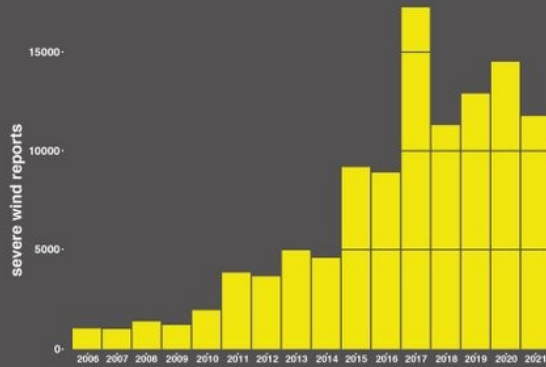


Based on data from the European Severe Weather Database (<http://www.eswd.eu/>) accessed on 2 January 2022

\*Due to the map limits, 113 reports out of 5,240 large hail reports are not shown on the map.  
 \*\*Large hail is defined as hailstones having a diameter (in the largest direction) of 2.2 centimetres or more and/or smaller hailstones that form a layer of 2.0 cm thickness or more on flat parts of the earth's surface.



In 2021, **11,725** severe wind events were reported in Europe. This is the fourth-largest number of severe wind events reported in one year since 2006 (17,226 severe wind events were reported in 2017). Severe wind events were associated with **277 injuries** and **50 fatalities** in 2021.



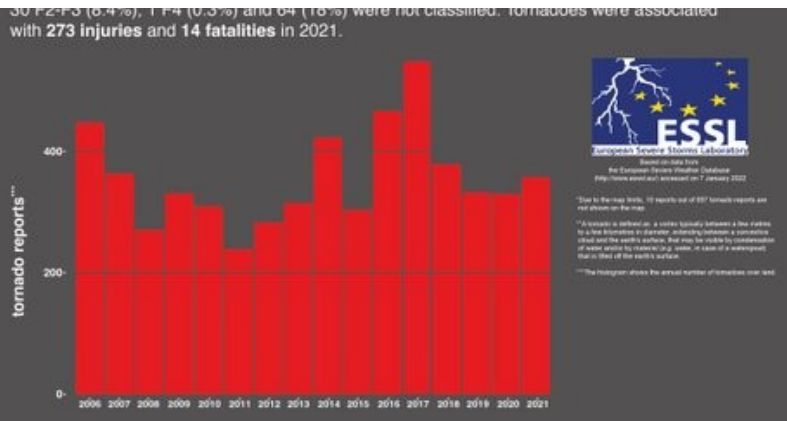
Based on data from the European Severe Weather Database (<http://www.eswd.eu/>) accessed on 2 January 2022

\*Due to the map limits, 622 reports out of 11,725 severe wind reports are not shown on the map.  
 \*\*A severe wind gust is a gust measured to have a speed of at least 23 m/s or one doing such damage that a wind speed of 23 m/s or higher is likely to have occurred.



**5 739**



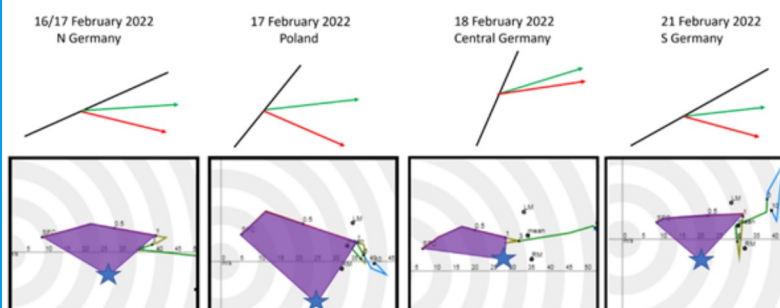


## Windstorms and tornado outbreak of February 2022

Blog by ESSL researcher and senior trainer Tomáš Půčík

An overview and discussion of severe weather associated with the recent windstorms is given in the blog available [here](#). The windstorm of 16 – 17 February ended up as a prolific tornado producer.

Multiple severe windstorms affected Europe in the period of 16 – 21 February. **2814** reports of severe wind gusts were submitted to the ESWD in this period, the majority of them in the belt from the British Isles through northwestern France, BENELUX, Germany into Czechia, northern Austria, and Poland.



*Relationship of convective system orientation and motion of individual elements (such as bow-echoes) to the wind profile characteristics for different cases. Upper panel:*

Black lines denote the orientation of the convective system, green arrows represent the mean wind, and red arrows the direction of motion of individual convective elements. Lower panel: Hodographs with 0-1 km SRH highlighted for observed storm motion of convective elements.



## ESSL training calendar and Testbed 2022

Date(s)	Event (click on the respective link for more information)	Remarks
21–25 March 2022	<b>Course:</b> <b>Forecasting Severe Convection I</b> by Dr Tomáš Púčik and Dr Christoph Gatzen	Fully booked: Registration has closed.
4–8 April 2022	<b>Course:</b> <b>Aviation Forecasting of Severe Convection</b> by Dr Tomáš Púčik and Dr Christoph Gatzen	ONLINE
13–17 June 2022	<b>ESSL Testbed 2022</b>	in Wiener Neustadt or online
27 June–1 July 2022	<b>ESSL-EUMETSAT Testbed on Severe Convective Storms</b>	in Wiener Neustadt or online Application and support through EUMETSAT
4–8 July 2022	<b>ESSL Testbed 2022</b>	in Wiener Neustadt or online
11–15 July 2022	<b>ESSL-EUMETSAT Testbed on Severe Convective Storms</b>	in Wiener Neustadt or online Application and support through EUMETSAT
29 August – 1 September 2022	<b>Tornado and Wind Damage Workshop</b>	in Wiener Neustadt or online
27–28 September 2022	<b>Online Mini-Conference on Severe Storms</b>	More information follows in early 2022
rescheduled! 4–6 October 2022	<b>Workshop:</b> <b>Severe Weather Warnings</b>	in Wiener Neustadt or online
10–14 October 2022	<b>ESSL-EUMETSAT Testbed on Severe Convective Storms</b>	in Wiener Neustadt or online Application and support through EUMETSAT
Spring 2023	<b>ECSS – 11th European Conference on Severe Storms</b> in Bucharest, Romania	To be scheduled later

*\* In case events are carried out online or as hybrid events because of COVID-19, we will inform registered participants 2 months in advance.*

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## **ESSL training activities**

Unsure which [course](#) to attend?

[Try our online quiz!](#)

For further information about the registration for these events, please contact us at:  
[events@essl.org](mailto:events@essl.org)

Or approach us for [tailored trainings or forecaster training on-the-job](#).

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