ESSL Newsletter 2023-1

February 2023

ESWD summary of 2022

ESSL has posted annual overviews of the European Severe Weather Database (ESWD) reports on severe weather events via Twitter and Facebook. Here comes a summary of the year **2022**.

In 2022, **568 severe weather events resulted in 3,300 injuries**. Ice accumulation events were associated with the largest number of injuries (93 events resulting in 2,179 injuries) and the highest injury rate (23 injuries per event).

Unfortunately, **273 severe weather events resulted in 331 fatalities**. The largest number of fatalities was produced by severe wind events (76 events resulting in 100 fatalities). The highest fatality rate was reported for avalanches (2 fatalities per event).
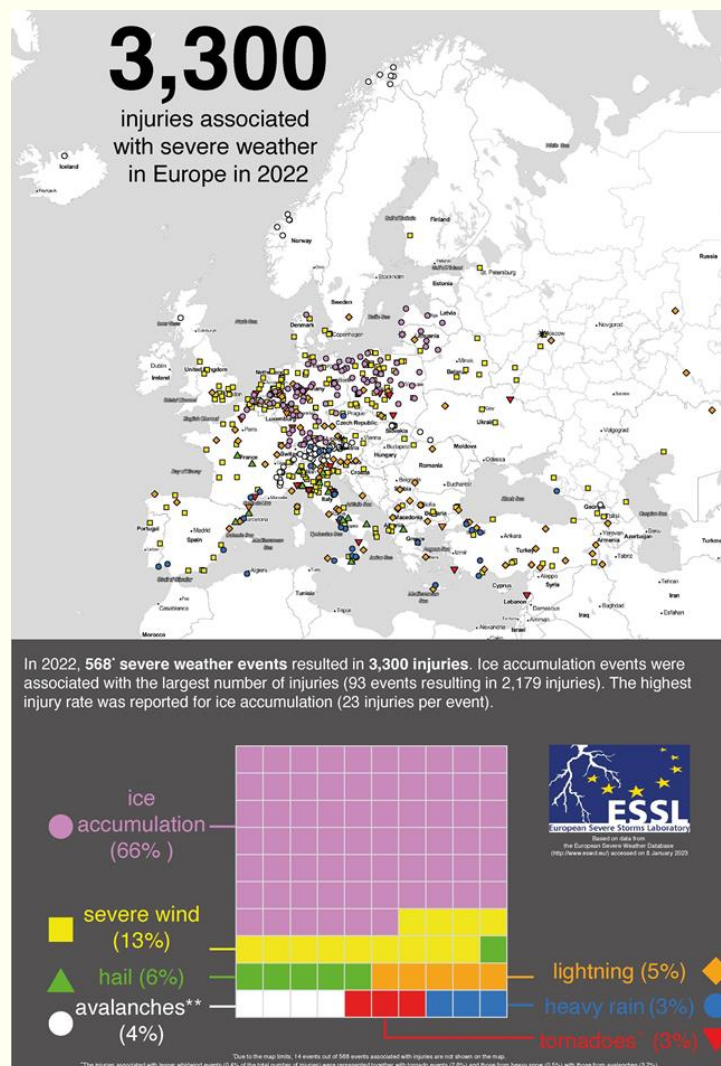
Large hail – In 2022, **8,242 large hail events** were reported in Europe. This is the largest number of hail events reported in one year since 2006. Large hail was associated with one fatality report and 214 injuries in 2022.

You can read more about **Major hailstorms of 2022** in the [Blog](#) written by *Tomáš Púčik*.

Severe wind - **18,479 severe wind gust reports** were collected in 2022 in Europe. Severe winds caused 100 fatalities and 420 injuries. The highest measured wind gust, 62.4 m/s, occurred during the derecho of 18 August in Marignana, Corsica. You can read more about this event [here](#).
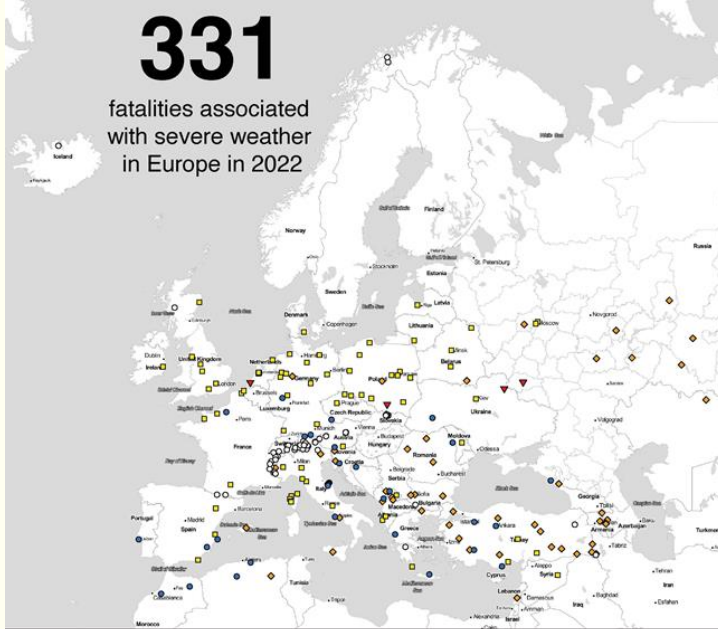
Heavy rain - In 2022, **7,122 heavy rain reports** are entered into ESWD. Heavy rain caused 63 fatalities and 93 injuries across Europe. Important remark: the trend in the annual number of reports has a strong non-meteorological component!

Tornadoes - In 2022, there were **782 tornado reports** in Europe, causing 6 fatalities and 84 injuries. 523 of the tornadoes were waterspouts. 26 of the tornadoes were strong, reaching F2 or F3 on the Fujita scale.
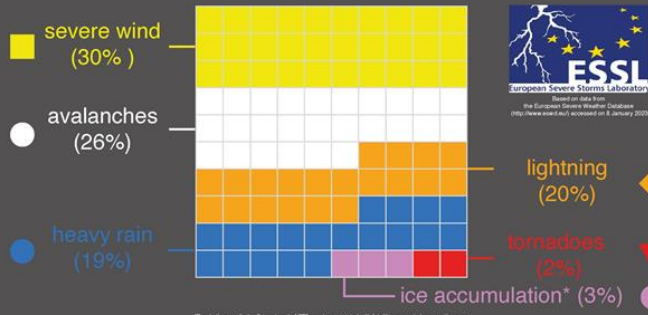
331
fatalities associated
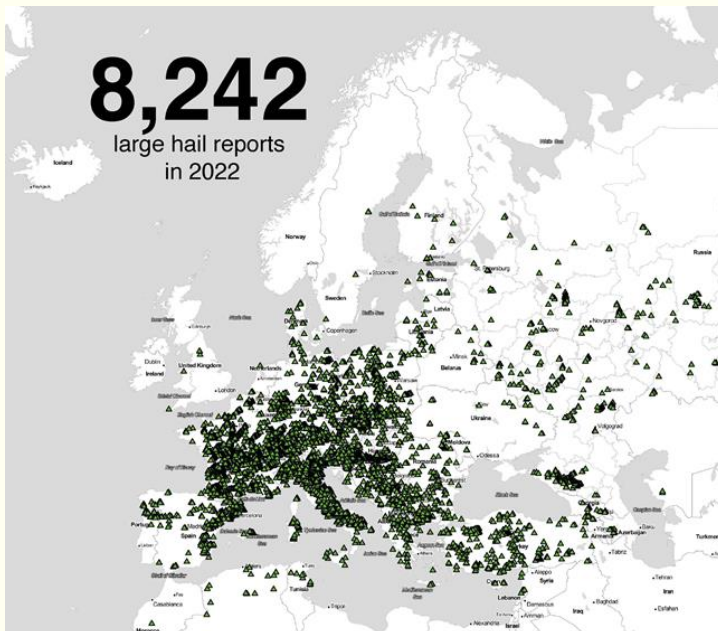with severe weather
in Europe in 2022

In 2022, **273*** **severe weather events** resulted in **331 fatalities**. The largest number of fatalities was produced by severe wind events (76 events resulting in 100 fatalities). The highest fatality rate was reported for avalanches (2 fatalities per event).
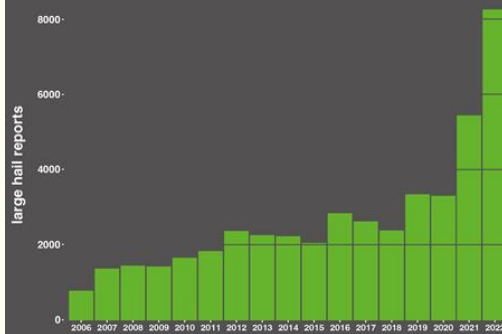
- severe wind (30%)
- avalanches (26%)
- heavy rain (19%)
- lightning (20%)
- tornadoes (2%)
- ice accumulation* (3%)

*Due to the map limits, 8 events out of 273 events associated with fatalities are not shown on the map.
**The fatalities associated with large hail events (0.3% of the total number of injuries) were represented together with ice accumulation events (2.7%).

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European Severe Storms Laboratory
Based on data from
the European Severe Weather Database
(http://www.eswd.eu/) accessed on 8 January 2023.
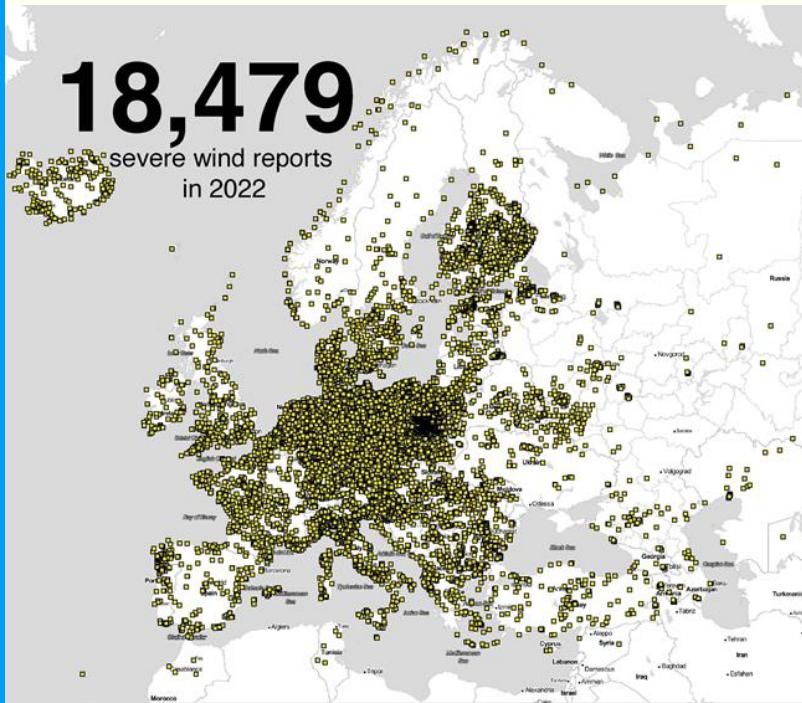
8,242
large hail reports
in 2022

In 2022, **8,242*** **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 **one fatality** and **214 injuries** in 2022.
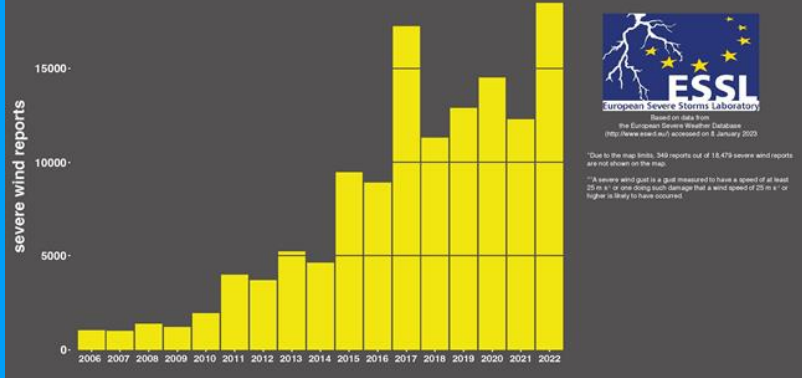
large hail reports

2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022

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*Due to the map limits, 27 reports out of 8,242 large hail reports are not shown on the map.

**Large hail is defined as hailstones having a diameter (in the longest direction) of 2.0 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.

18,479

severe wind reports
in 2022

In 2022, **18,479*** **severe wind**** events were reported in Europe. This is number of severe wind events reported in one year since 2006. Severe wind events were associated with **100 fatalities** and **420 injuries** in 2022.
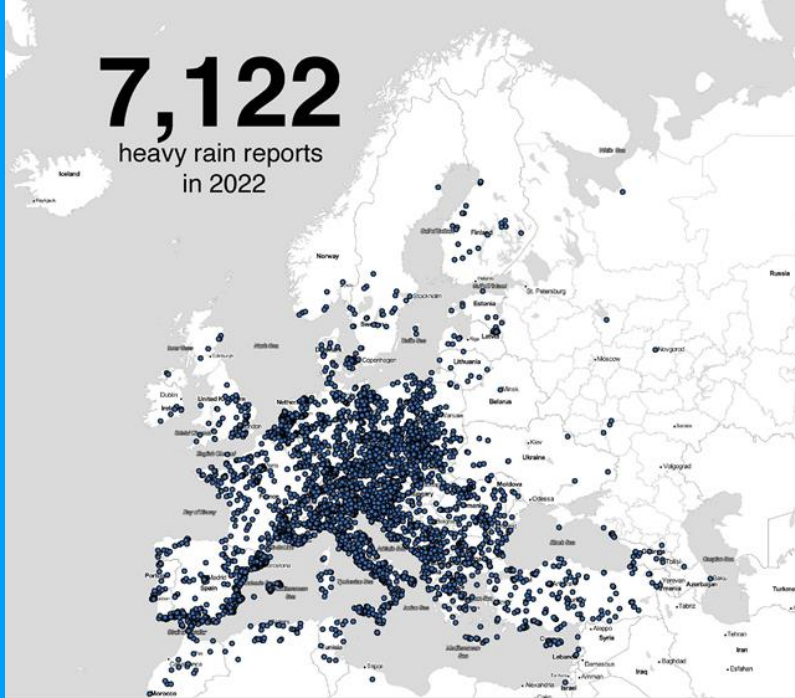

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Based on data from
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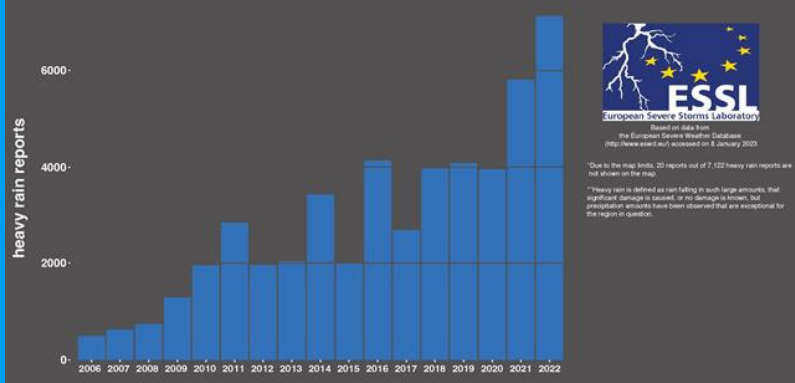(http://www.eswd.eu/) accessed on 8 January 2023.

*Due to the map limits, 349 reports out of 18,479 severe wind reports are not shown on the map.

**A severe wind gust is a gust measured to have a speed of at least 25 m s⁻¹ or one doing such damage that a wind speed of 25 m s⁻¹ or higher is likely to have occurred.
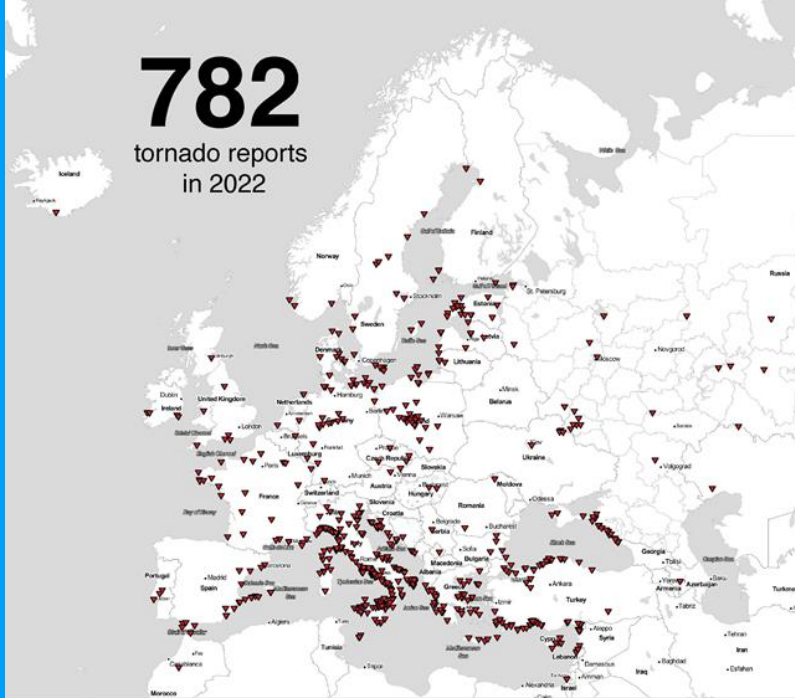
7,122
heavy rain reports
in 2022

In 2022, **7,122* 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 **63 fatalities** and **93 injuries** in 2022.

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Based on data from
the European Severe Weather Database
(http://www.eswd.eu/) accessed on 8 January 2023.

*Due to the map limits, 20 reports out of 7,122 heavy rain reports are not shown on the map.

**Heavy rain is defined as rain falling in such large amounts, that significant damage is caused, or no damage is known, but precipitation amounts have been observed that are exceptional for the region in question.
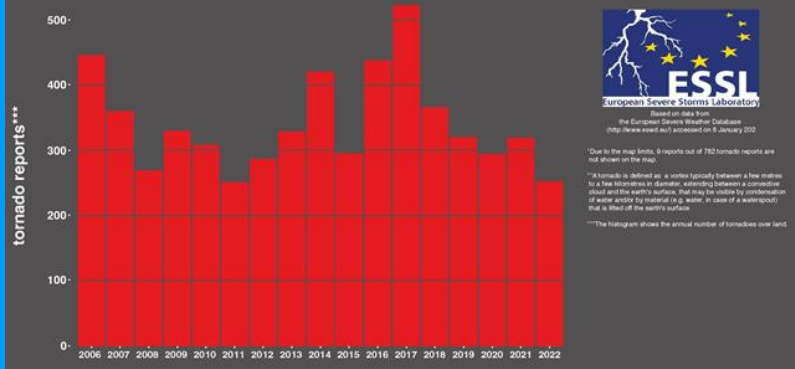
In 2022, **782** tornadoes** were reported in Europe. 251 reports were for tornadoes (32% of all reports), 523 (66%) for waterspouts and 8 (1%) were not classified because the initial location was unknown. Of the 251 tornadoes, 128 were F0-F1 (51% all tornadoes), 26 F2-F3 (10%), and 97 (39%) were not classified. Tornadoes were associated with **6 fatalities** and **84 injuries** in 2022.

European Conference on Severe Storms

The **11th edition of the European Conference on Severe Storms** will take place in the very centre of **Bucharest** in the National Statistics Institute (Institutul Naţional de Statistică, Bulevardul Libertăţii 16, București 030167), from **8th to 12th of May 2023**.

The scope of the conference covers all aspects of severe convective storms. Researchers, operational forecasters, and risk and emergency managers are targeted audience as well as anyone interested in severe storms. In light of the global relevance of the conference themes, participants from all over the world are encouraged to attend.

Details are available [here](.).

ESSL training calendar and Testbed 2023

Date	Activity
27 - 31 March 2023	Course Aviation Forecasting of Severe Convection
24 – 28 April 2023	Course Forecasting Severe Convection (FSC I)
8 – 12 May 2023	ECSS2023 11th European Confernce on Severe Storms
5 – 9 June 2023	ESSL-EUMETSAT Testbed week 1
12 – 16 June 2023	ESSL-EUMETSAT Testbed week 2
26 – 30 June 2023	Regular week ESSL Testbed 2023
3 – 7 July 2023	Expert week ESSL Testbed 2023
3 – 8 September 2023	EMS Annual Meeting 2023
25 – 29 September 2023	ESSL-EUMETSAT Testbed week 3
9 – 13 October 2023	ESSL-EUMETSAT Testbed week 4
16 – 18 October 2023	Expert Workshop on Severe Weather Warnings
7 – 9 November 2023	Course Towards better written and oral weather communication

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](.)

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