

The anonymous referee #2

The paper analyzes the deadliest sudden climatic events in the Czech lands and combines historical documentary sources with specific accounts of the events. The reading is fluid and, despite being a very descriptive text, it is interesting at all times. The study is important for the historical understanding of extreme events, engaging with sociohydrology and leading to reflection on the dynamics of the human-water system.

RESPONSE: We would like to thank the anonymous referee #2 for evaluation of our paper with raising critical comments, which we are trying to respond below.

I will leave some questions for the authors (if relevant, you can insert the answer in the article in one or two paragraphs):

- What public policies were applied for risk management or mitigation of these phenomena
- Did these laws/policies emerge after historical extreme events?

RESPONSE: Accepted. We prepared a new paragraph, which was included as penultimate one in Sect. 5 Discussion in the following form:

“Because floods represented the most important natural disasters in the Czech Lands, they were considered on the land or regional levels for a long time. Warning to floods of the Vltava River in Prague appeared already in the issue of anti-flood instruction from 28 January 1799 CE, followed by anti-flood ordinance from 12 January 1823 (Munzar, 2001). After floods in May 1872 and severe drought in 1874, Hydrographic Commission of the Kingdom of Bohemia was created in 1875, that started to organise regular hydrological measurements in Bohemia (Elleder, 2025). Similar body in Moravia, Land Hydrological Branch of Central Hydrographic Bureau in Vienna, was established in Brno as far as in 1893. Several anti-flood instructions and ordinances were produced for Prague as well as both lands Bohemia and Moravia also in subsequent years (Munzar, 2001). Besides anti-flood warnings, organisation of saving flood activities and flood forecasts, human intervention in river catchments became a significant factor affecting floods. It concerned particularly the building of water related structures like dams or reservoirs, where protection against flood was important factor of their building, and modifications in river channels (e.g., elimination of bends and meanders with the intention of accelerating runoff during floods) (Brázdil et al., 2012). For example, the disastrous flood on 30–31 July 1897 (see Sect. 4.1.4) led to the creation of Land Commission for River Adjustment of the Kingdom of Bohemia in 1903 (existing until 1931) and to the building of three dams on the upper and middle Elbe, finished in the 1910s (Šámalová, 2017). From the second half of the 20th century, permanently created state or regional flood commissions were responsible for organising all saving activities during floods (Brázdil et al., 2005).”

New references:

Brázdil, R., Dobrovolný, P., Elleder, L., Kakos, V., Kotyza, O., Květoň, V., Macková, J., Müller, M., Štekl, J., Tolasz, R., and Valášek, H.: Historické a současné povodně v České republice (Historical and Recent Floods in the Czech Republic). Masarykova univerzita, Český hydrometeorologický ústav, Brno, Praha, Czech Republic, 370 pp., ISBN 80-210-3864-0, 2005.

Brázdil, R., Řezníčková, L., Havlíček, M., and Elleder, L.: Floods in the Czech Republic, in: Changes in Flood Risk in Europe, edited by Kundzewicz, Z. W., IAHS Special Publication 10, IAHS Press and CRC Press/Balkema, Wallingford, UK, 178–198, ISBN 978-1-907161-28-5, 2012.

Elleder, L.: Hydrografická komise Království českého, její význam, důvody a okolnosti vzniku roku 1875 (Hydrographic Commission of the Kingdom of Bohemia, its importance, reasons and circumstances of its constitution in 1875), *Živa*, 73, LXXV–LXXVII, 2025.

Munzar, J.: Protipovodňové instrukce v Českých zemích v minulosti (Flood instructions in the Czech Lands during the past), *Hist. Geogr.*, 31, 163–189, 2001.

Šámalová, Z.: Sto let od dokončení přehrady Labská ve Špindlerově Mlýně (Hundred years from finishing of the Labská dam in Špindlerův Mlýn), *Vodní hospodářství*, 67, 24–27, 2017.

Suggestion: That Fig 1 of Appendix A be moved to the body of the text of the work (line 117) with one or two paragraphs of historical/socioeconomic characterization of the Czech lands.

RESPONSE: Accepted. To follow a comment of the referee, we prepared a new section 2.1 giving basic information about the Czech Republic since 1850 CE:

“2.1 Czech Republic

The Czech Republic (further as CR) is located in Central Europe (Fig. 1), covering an area of 78,866 km². The territory comprises various geographic units, from lowlands to mountains, with an average altitude of 390 m asl (with an altitudinal range from 115 to 1603 m). The western part of the CR belongs to the Labe (Elbe) catchment, the eastern part particularly to the Morava catchment and Odra (Oder) catchment. Three historical lands, namely Bohemia in the western part and Moravia with southern Silesia in the eastern part of the CR, were historically considered as Czech Lands. Until 28 October 1918 they formed Kingdom of Bohemia, being part of the Austrian empire (Austrian-Hungarian empire from 1867), followed by Czechoslovakia, when Slovakia and Transcarpathian Ukraine joined Czech Lands. After the Munich Agreement on 30 September 1938, the Czech Lands lost the Sudetenland, and following Nazi occupation on 15 March 1939, they became the Protectorate of Bohemia and Moravia (with Slovakia separating), existing until the end of the World War II in 1945. From 1948 to the so-called Velvet Revolution in 1989 Czechoslovakia was a communist country. From 1 January 1993 Czechoslovakia was split into the Czech and Slovak Republics. In 2004, the CR joined the European Union. During the whole 1850–2025 period, Praha (Prague) was a capital of the country. While the population of the Czech Lands to 1 July 1850 CE was 6 826 465, to 1 July 2025 the number of CR inhabitants achieved 10 886 878, with continuously growing proportion of urban population (Czech Statistical Office, 2026). But the population density within Czech Lands was uneven. On average, the highest concentration of inhabitants was found in the industrial areas of the northern half of the territory in the foothills of the border mountains, where a denser urban and railway network was consequently created. The southern half remained more sparsely populated, less urbanized, and more oriented towards agriculture (Kárníková, 1965; Šib, 2004).

The new references:

Czech Statistical Office: Public database – Long-term time series, <https://vdb.czso.cz/vdbvo2/faces/en/index.jsf?page=statistiky#katalog=33157>, last access: 4 March 2026, 2026.

Kárníková, L.: Vývoj obyvatelstva v českých zemích 1754–1914 (Development of Population in the Czech Lands 1754–1914), Nakladatelství Československé akademie věd, Praha, Czechoslovakia, 401 pp., 1965.

Srb, V.: 1000 let obyvatelstva českých zemí (1000 Years of Population in the Czech Lands), Karolinum, Praha, Czech Republic, 275 pp., ISBN 80-246-0712-3, 2004.

We prepared the new map, because the use of Fig. A1 here would be not good solution, because Fig. A1 contains information about meteorological stations and locations, related to further described weather events.

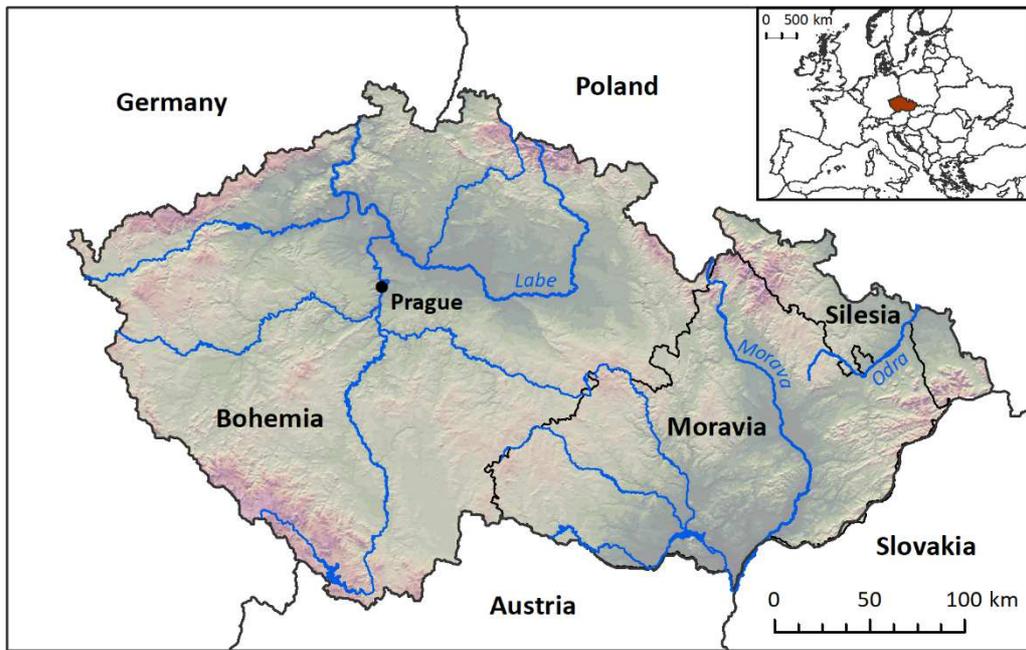


Figure 1. Location of the Czech Republic in Central Europe, its historical parts and physical-geographic patterns (data source: ArcCR 500 v2.0).