

DEALING WITH THE VARIETY OF HISTORICAL SOURCES FOR FLOOD AND LOW WATER RECONSTRUCTION



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Outline

- Written evidence revisited
- Flood marks and “hunger stones” – more than signs of a memorial culture?
- Pictorial sources
 - Combining drawings and paintings with written evidence
 - Serial iconography of early photographs

Anthropogenic sources

- Written documentary data
 - Chronicles (monasteries, cities, private persons)
 - Charters, petitions
 - Broadsheets, newspapers
 - Diaries of various kinds
 - Account books and similar (cities, manors)
- Early instrumental measurements on water levels
- Epigraphical sources
 - Flood marks, “hunger stones”
- Pictorial sources
 - Drawings, paintings
 - Historical maps
 - Photographs (from the late 1860s onwards)

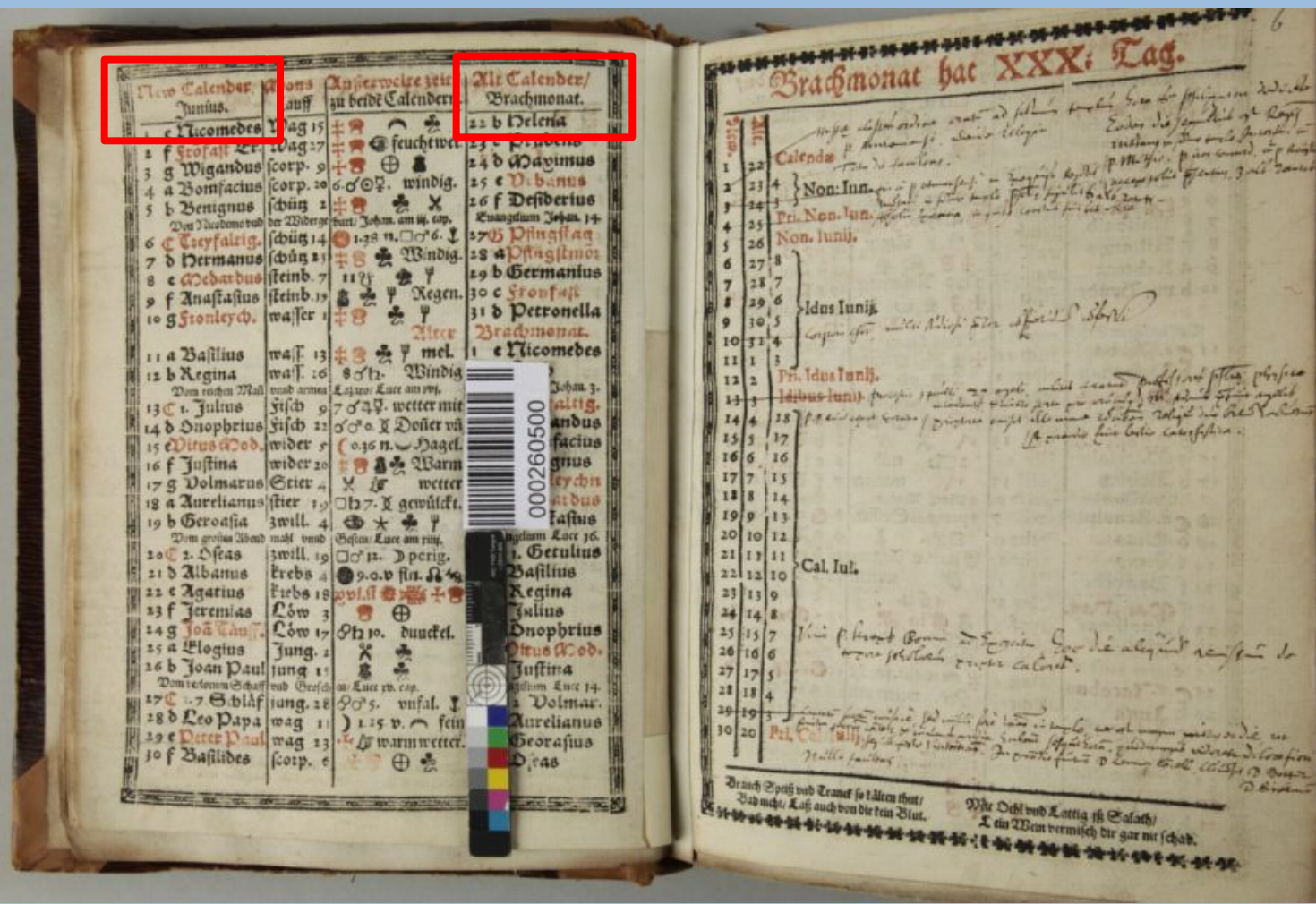
Written sources

Source criticism

- Reliability of documentary sources may vary
 - Is the author an eye-witness?
 - Is the source written near the event (time, space)?
 - Do we have to consider biblical and other patterns, literary topoi etc.?
 - Weikinn's compilation: misleading mixture of contemporary and non-contemporary sources
- Are the records precise?
 - “The flood has been enormous”
 - “In the church X the water reached the knees of the statue of the Virgin Mary”
- Dating of the event
 - Julian (old) calendar style vs. Gregorian (new) calendar style, 1582-1700

Written sources

Weather diaries and almanacs



Almanac (printed calendar with empty page for personal weather notes) from the 1620s. Source: Cologne: Municipal Archives, Best. 150 (Universität), A 1092

Written sources

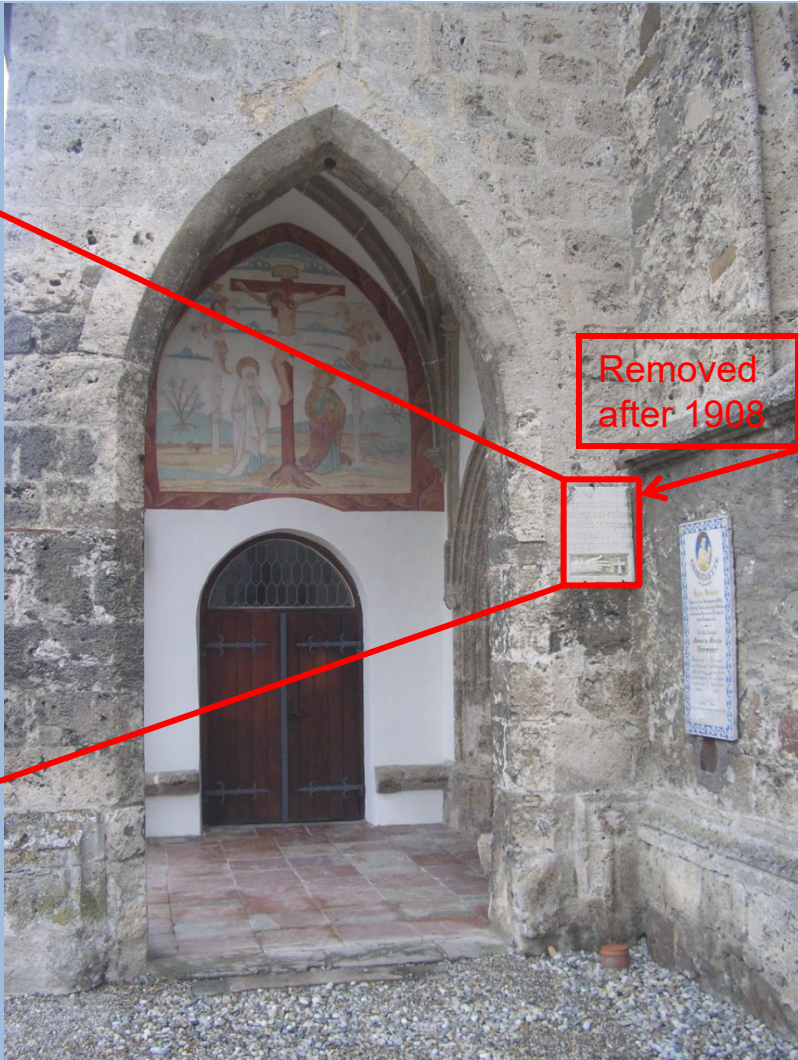
Institutional sources

- Municipal accounts
 - Weekly or monthly resolution
 - Expenditures for maintaining and repairing bridges
 - Remarks about damage by floods and ice
 - Expenditures for protective buildings in general (construction, repair)
 - Salaries for guarding the bridges
- Tax registers
 - Crossing of rivers via bridges and ferry

Epigraphical sources

- Flood marks
 - Elaborate inscriptions
 - Lines with date of the year
 - “Hunger stones”
 - Only visible during very low water
 - Mostly from the Elbe river (see Elleder et al. 2020)
 - Rhine: low water stage mark from Laufenburg destroyed, when the hydropower station was built (1909-1914)
 - Problems
 - Reliability of the current position
 - Changes in the riverbed and the riverscape in general
- In many cases more information on memorial cultures than on the exact water level

Epigraphical sources



Removed
after 1908

Flood mark with inscription from Mittich (Lower Bavaria), 1501

Epigraphical sources

“Hunger stones”



Fig. 2.4 A hunger stone at the left bank of the river Elbe at Děčín (District Museum Děčín, sign. N 10851/12, 12242/1, 12245/5)

Hunger stone from Děčín (Czech Republic), 1616

Combining written, epigraphical and pictorial sources

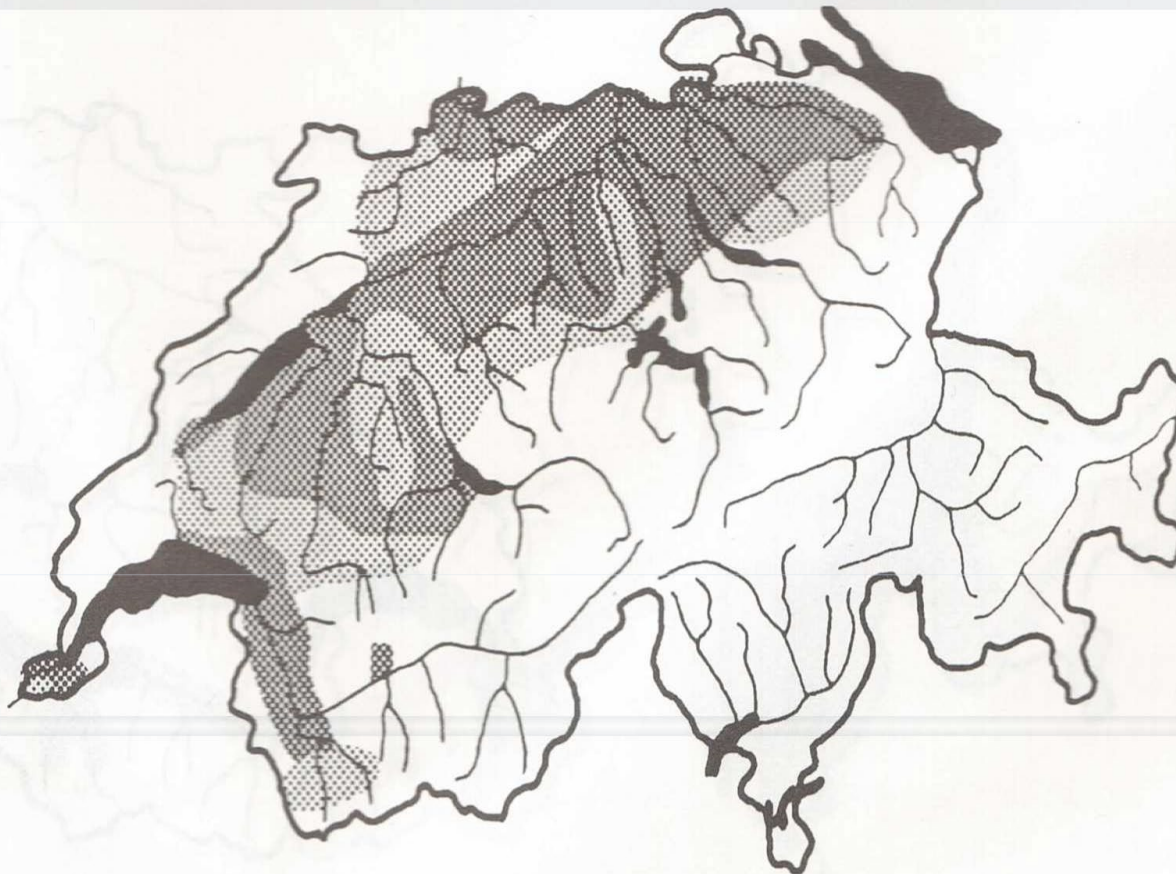
The flood of 1852 in Basel

- Basel repeatedly hit by severe floods since the Middle Ages
- Gradual reduction of the flood risk through
 - Kander breakthrough (1711-1714)
 - Jura lakes melioration project (1868-1891)
- Sources
 - Written documents (private chronicles, newspaper reports)
 - Gauge measurements, flood marks
 - Pictorial documents (paintings, early photographs)
- To what extent does the depiction of this event differ in pictorial and written sources?

Combining written, epigraphical and pictorial sources

The catchment of the flood in September 1852

Source:
Röthlisberger
1991: 67.



Combining written, epigraphical and pictorial sources

The flood of 1852 in Basel – newspaper reports

- Allgemeines Intelligenzblatt der Stadt Basel, 20. 9. 1852
 - „Nach mehrtägiger regnerischer Witterung, welche besonders am 17. Herbstmonat und in der darauf folgenden Nacht fast unausgesetzt, und des Nachts in wiederholten heftigen Güssen anhielt, erhob sich der Rhein auf eine seit Jahrhunderten nie gesehene Höhe.“
 - „Die Polizei wehrte dem grossen Andrang der Schaulustigen und es wurden nur Einzelne, die in Geschäften die Brücke passiren mussten, hin und her gelassen.“
- Basler Zeitung, 21. 9. 1852
 - „Das Wasser desselben [des Rheins] ist bis auf die Mitte des Fischmarktes gekommen, wohin man durch die Schwanengasse mit einem grossen Rachen fahren kann.“

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The flood of 1852 in Basel – pictorial evidence

Louis Dubois: Der grosse Rhein den 18. September 1852. Coloured lithograph (1853)



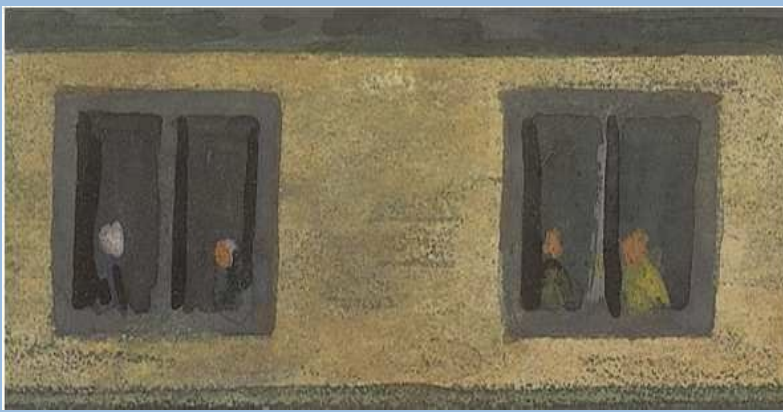
Combining written, epigraphical and pictorial sources

The flood of 1852 in Basel – peak discharge



Combining written, epigraphical and pictorial sources

The flood of 1852 in Basel – onlookers



Combining written, epigraphical and pictorial sources

The flood of 1852 in Basel – flotsam in the Rhine river



Combining written and photographic sources

The flood of 1910 in Switzerland

- Concerns mainly the central Swiss cantons of Obwalden, Nidwalden and Lucerne, but also the (lower) Emmental valley
- Numerous photos particularly from the city of Lucerne
 - Both private and professional photographs
- Motifs for the depiction of a “catastrophe”
 - Destroyed bridges
 - Boat traffic in the streets of the cities
 - Flooded fields
 - Clean-up work in the countryside and villages

Combining written and photographic sources

The flood of 1910 in Switzerland



The flood of 1910 in the Emmental valley: destroyed bridge in Biberist (canton of Solothurn).

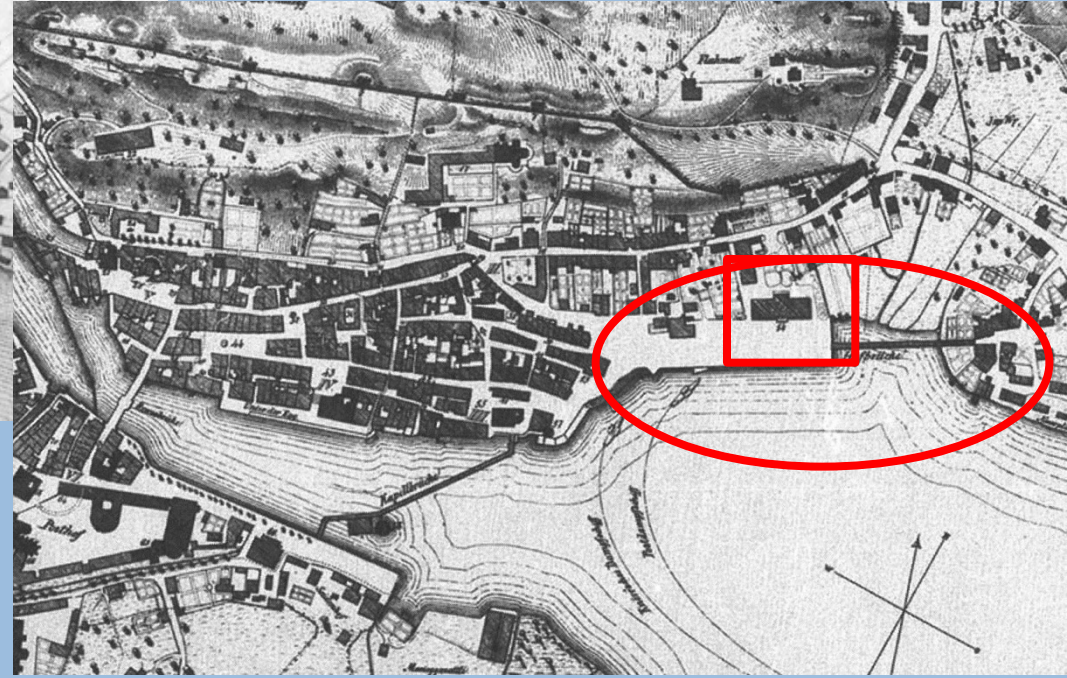
Photo: Ernst Glutz, Solothurn.
Source: Bern: Swiss Federal Archives

Combining written and photographic sources

The flood of 1910 in Lucerne: changing endangered areas



1840

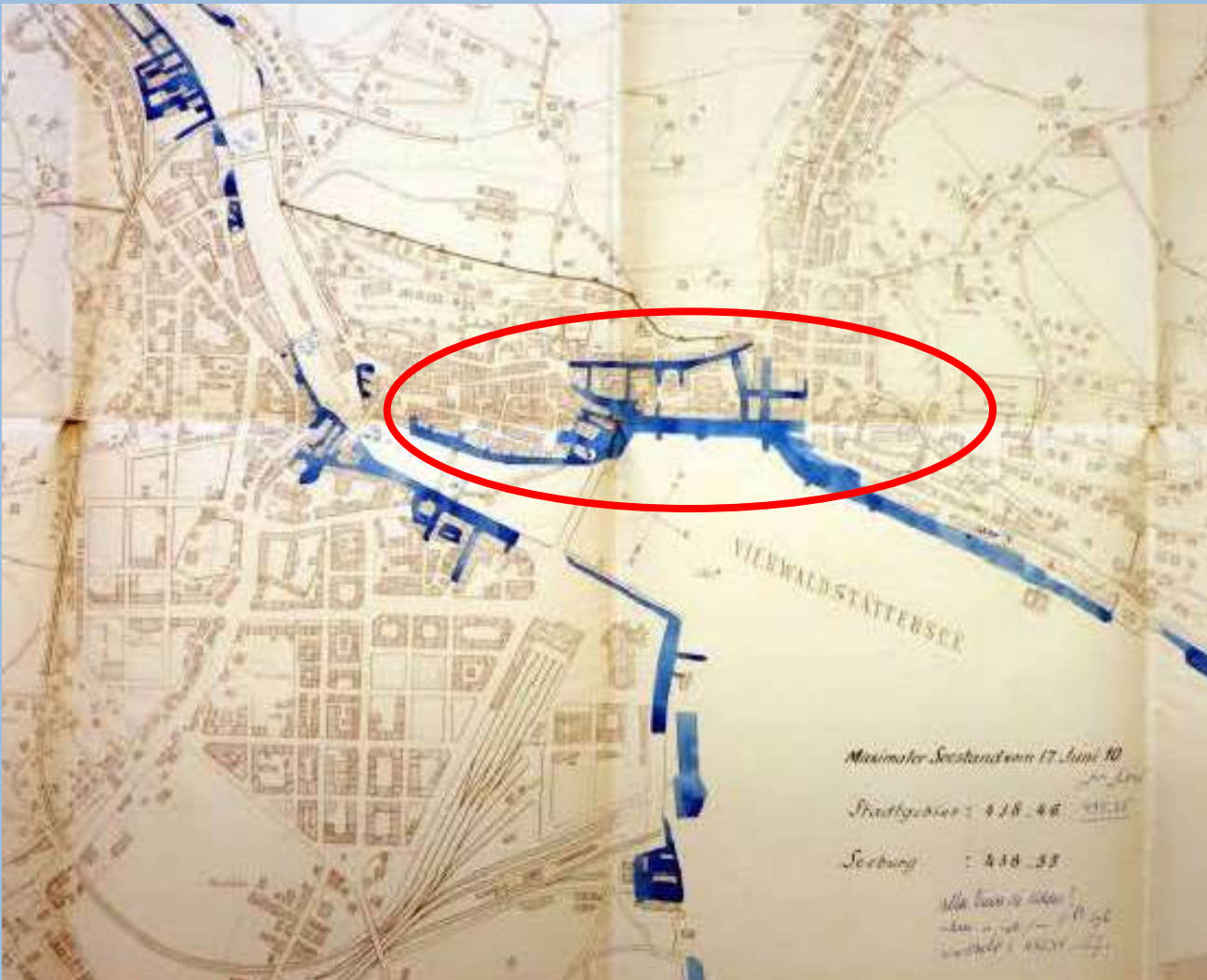


1848

Source: Lucerne: Municipal Archives

Combining written and photographic sources

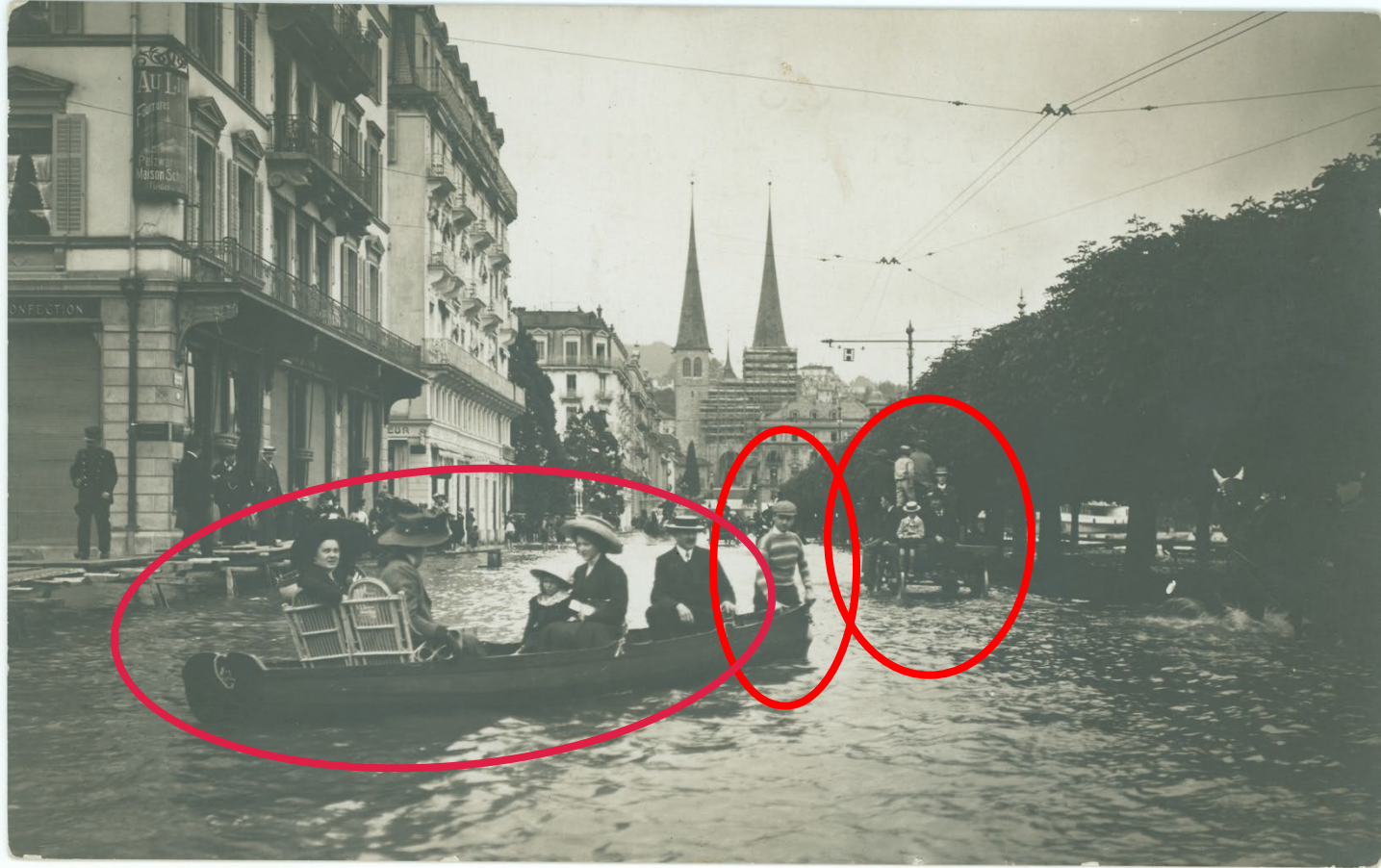
The flood of 1910 in Lucerne



Source: Lucerne:
Municipal Archives

Combining written and photographic sources

The flood of 1910 in Lucerne



Source: Lucerne: Municipal Archives

Combining written and photographic sources

The flood of 1910 in Lucerne

“Überschwemmungsgedächtnis” project

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GESCHICHTER CENTRE | FÜR NATURRISIKEN

Überschwemmungsgedächtnis

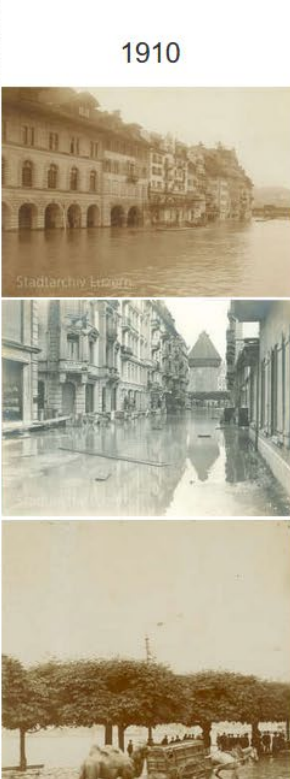
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Conclusions

- Most of the sources presented are useful for qualitative reconstruction
 - How did historical societies perceive, manage, and memorise floods and extreme low water?
 - Influence on the creation and transmission of sources
- Source criticism
 - Several *caveats*, but also added value
 - Cross-checking of the various anthropogenic sources, archaeological evidence and natural archives essential
 - Serial iconography and geo-referentiation of historical photographs with high potential
 - “Kollektives Überschwemmungsgedächtnis” project by the Oeschger Centre for Climate Change Research/Mobilier Lab
(<https://ueberschwemmungsgedaechtnis.hochwasserrisiko.ch/de/home>)

Thank you for your attention!

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