APOCALYPSE THEN?
THE LAACHER SEE ERUPTION (13 ka BP) AND ITS HUMAN IMPACT ALONG A PROXIMAL-TO-DISTAL TRANSECT
- Eruption date: \( \sim 13 \text{ka BP} \).
- Large \((M=6.2)\) and intense \((I\geq11.5)\) Plinian eruption.
- Rhine dammed – later dam-break flood.
- 1,400+ km\(^2\) covered in near-vent deposits between 50-1m.
- 20-40 km tall ash column.
- 20+ km\(^3\) ejected over several days to months.
- A late ice age sealed landscape:
  - Animal tracks.
  - Burned forests & other macro-botanical remains.
  - Plethora of archaeological sites of all sizes.
Reinig et al. (2020)

Devastation and depopulation ~100-200 years (Waldmann et al. 2001).

Ash-fall impacts on ecosystem services:
- Mechanical destruction of plants (Riede et al. 2011).
- F-toxicosis in animals/humans (Riede & Kierdorf, under review).
- Negative respiratory impacts due to low grain size (Riede & Bazely 2009).
- Severe dental abrasion due to ash ingestion (Riede & Wheeler 2009).
- Avoidance of medial region until YD (Riede 2016).

Refugial migration (C14 dates, site count) and relative isolation leading to cultural change (Riede & Edinborough 2012; Riede 2017).

Future work: New sites? Weather and climate impact?
REFERENCES


Riede, F., Kierdorf, U., submitted. The eruption of the Laacher See volcano (~13,000 years BP) and fluoride poisoning amongst contemporaneous wildlife and human foragers – outline of a hypothesis and the way to test it. *International Journal of Osteoarchaeology.*
