

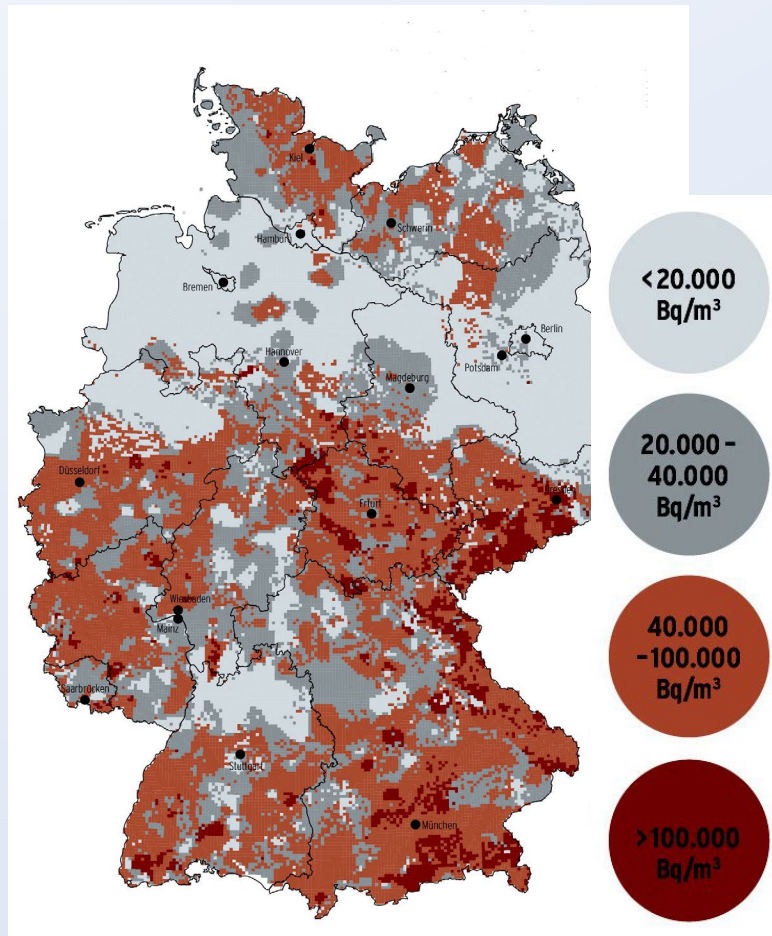
# Radon in Germany: Risk, Rules and Implementation

Dr. Michael Westphal, RadonTracer

# Germany: Health Risk of Radon

- An estimated **2,800 lung cancer deaths per year in Germany** are attributed to radon exposure.
- This represents about **6.3% of all lung cancer deaths** in Germany.
- The estimated risk of lung cancer from radon exposure ranges from 3.3% to 10% depending on the federal state.

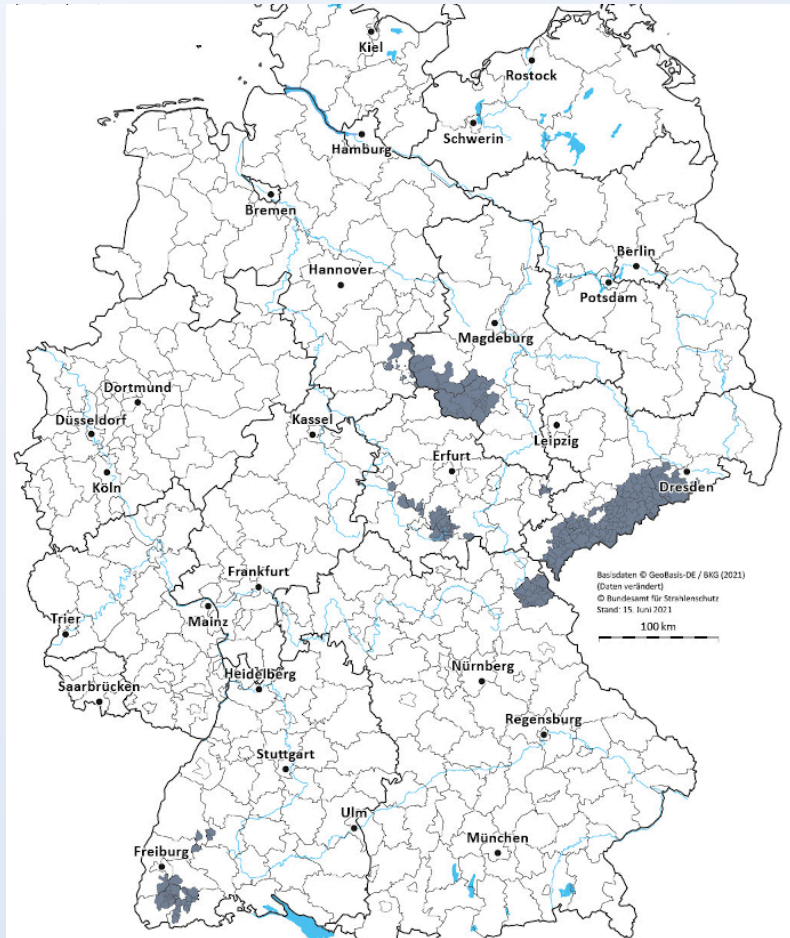
# Germany: The Geological Situation



## Soil Gas Survey – Radon Map of Germany

- Higher radon levels are found in the south. In the north, glacial deposits from the Ice Age can also influence radon levels.
  - Elevated concentrations occur in the Ore Mountains, Thuringian Forest, and Black Forest — often related to historical mining regions.
  - Take a look at the map legend!
- 👉 **Measuring radon is always a good idea.**

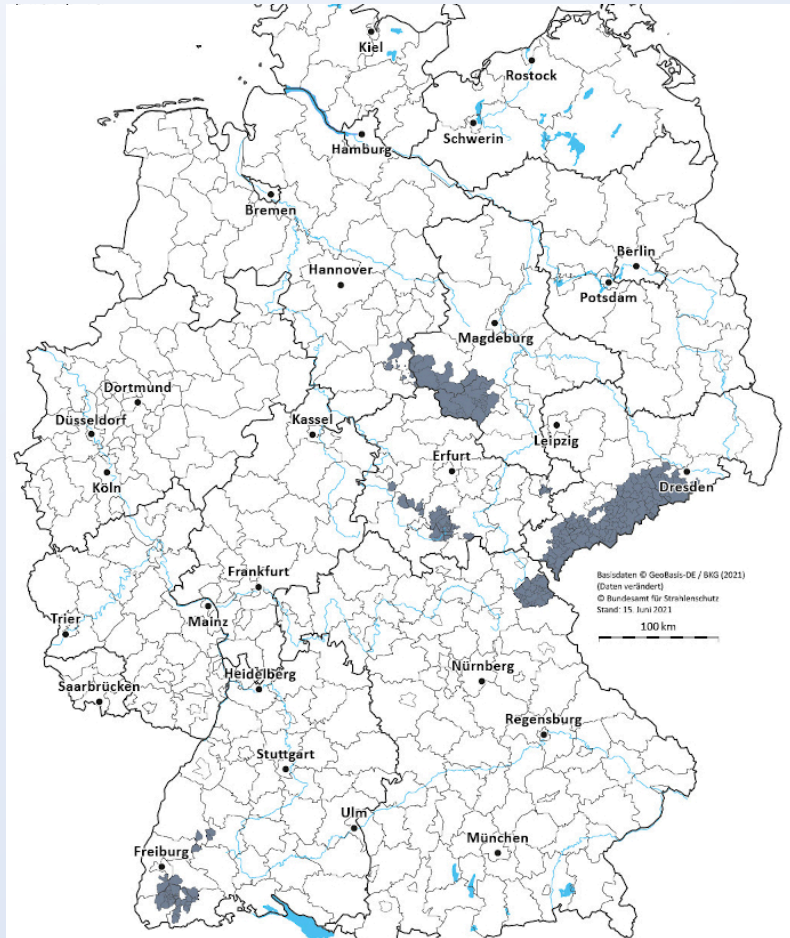
# Germany: Radon Prone Areas



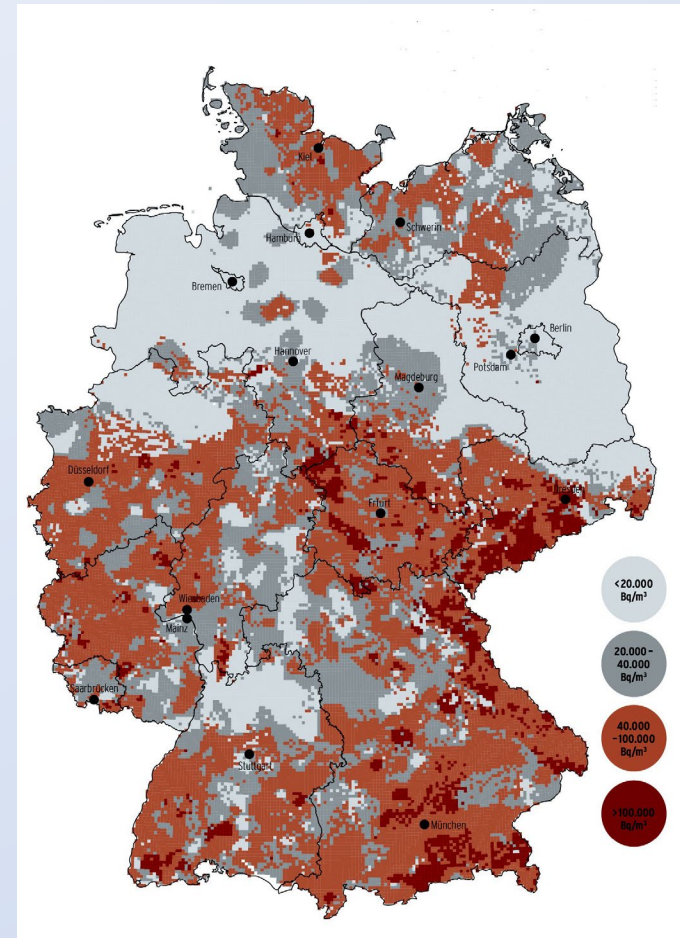
- Data from soil gas surveys and building measurements led to the designation of *radon prone areas*.
- Indoor air concentrations frequently exceed an annual average of **300 Bq/m<sup>3</sup> ( $\approx 8$  pCi/L)**.
- What does “frequently” mean? Typically, 10% or more of buildings show elevated levels.
- In these regions, radon is a recurring and typical problem.



# Germany: Radon Prone Areas



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# Radon in Germany: The Rules

- The **Euratom Directive 2013/59/Euratom** sets specific requirements for radon prevention and monitoring in homes and workplaces.
- In Germany, these rules were implemented into national law through:
  - The **Radiation Protection Act** (Chapter 2), and
  - The **Radiation Protection Ordinance** (Section 2).
- In radon prone areas, employers are required to perform a one-time measurement of radon levels to determine whether mitigation is necessary.
- If the annual average exceeds **300 Bq/m<sup>3</sup> ( $\approx$  8 pCi/L)**, radon mitigation must be implemented (§128 StrlSchG).

# Further Rules

- Workplace radon measurements must be conducted by **organizations accredited** by the **Federal Office for Radiation Protection** (§155 StrlSchV).
- Only organizations that have successfully completed the required quality assurance accreditation are recognized as accredited bodies.
- According to **§123 of the Radiation Protection Act**, new buildings constructed since 2019 must be designed to **minimize radon entry**. In practice, this requirement is mainly enforced in radon prone areas.

# Thank you for your attention!



Dr. Michael Westphal, **RadonTracer**