Multidecadal Change in Pesticide Concentrations Relative to Human Health Benchmarks in the Nation's Groundwater: U.S. Geological Survey Report



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The United States Geological Survey ("USGS") issued a report titled:

… *Multidecadal Change in Pesticide Concentrations Relative to Human Health Benchmarks in the Nation's Groundwater* ("Report").

See Scientific Investigations Report 2025–5081.

The authors of the Report are:

- Sarah M. Stackpoole.
- Bruce D. Lindsey.
- Cee S. Nell.

The USGS Report states that it has been monitoring pesticide concentrations in groundwater for 25 principal aquifers across the continental United States since 1983. The groundwater well locations are stated to include a range of:

- Soils.
- Climate.
- Landforms.

The wells are stated to have been utilized to monitor groundwater underlying selected agricultural and urban settings and groundwater used for domestic supply.

The Report is stated to have investigated:

… changes in relative concentrations, defined here as the percentage of wells with pesticide concentrations exceeding a human health benchmark (HHB).

As used in the Report, HHBs are described as legally enforceable drinking-water standards and nonenforceable drinking water levels.

22 pesticides were a focus of the Report that were included in laboratory analysis from 1993 to 2023. The pesticide concentrations analysis and interpretation were stated to have been separated into approximate decadal intervals:

- Decade 1 - 1993–2001.
- Decade 2 - 2002–2012.
- Decade 3 - 2013–2022.

The Report provides an assessment of decadal groundwater pesticide concentrations which includes a characterization of changes in water availability because of pesticide contamination in areas where groundwater is used as a drinking-water source. It concludes:

… The results highlight the importance of continued long-term monitoring and assessment of groundwater pesticides to identify locations and specific compounds that may pose a potential risk to human health.

Key components of the Report include:

- Methods.
- Results.
- Discussion.

A copy of the Report can be found here.