

Impact on water quality

Outdoor pig farming can significantly influence water quality, primarily through **leaching and runoff** of nutrients and sediment into watercourses. Many outdoor pig farms in the UK are in **Nitrate Vulnerable Zones (NVZ)**. They are often situated on **free-draining soils** that connect to groundwater aquifers, increasing the risk of pollutants reaching watercourses.

Key Pollutants

Nutrients from manure: Nitrates, phosphates, potassium, magnesium

Sediment: Soil particles carried by runoff

Microbial contaminants: Pathogens, faecal matter, faecal indicator organisms (FIOs) and bacteria (Salmonella and coliforms, e.g., E. coli)

Why It Matters

Nutrient overload in water courses can cause eutrophication, leading to algal blooms and reduced oxygen levels.

Sediment deposition damages riverbeds and fish spawning habitats.

Pathogens can contaminate water sources, posing risks to human and animal health.

Direct risks of outdoor pig farming to water quality

Factors that can increase the severity of runoff and leaching:

- **Damaged soil structure** from rooting and trampling, leading to compaction and poor infiltration.
- **Nutrient hotspots** around feeders and huts where excrement accumulates.
- **Bare ground and lack of green cover** leave soil exposed to erosion.
- **Sloping land and absence of buffer strips** accelerate runoff.
- **Dietary imbalances**, where excess nitrogen and phosphorus in feed increase nutrient excretion.

Check out the guidance documents below to see which measures can improve water quality.

Actions

- Site selection
- On-farm infrastructure
- Diet
- Equipment and machinery
- Green cover and buffer strips
- Stocking rate and grazing management
- Soil health and structure
- Manure management

Links to further information

Farming Rules for Water - Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018: www.gov.uk/guidance/rules-for-farmers-and-land-managers-to-prevent-water-pollution

Protecting our water, soil and air, Defra, 2011: www.gov.uk/government/publications/protecting-our-water-soil-and-air

The Code of Good Agricultural Practice (COGAP) for the prevention of pollution of water, air and soil, DAERA, 2008: www.daera-ni.gov.uk/publications/code-good-agricultural-practice-cogap

Water guidance for pig farmers: ahdb.org.uk/knowledge-library/water-guidance-for-pig-farmers

Good soil management practice for outside pig keepers: ahdb.org.uk/knowledge-library/good-soil-management-practice-for-outside-pig-keepers

Think Soils – Soil assessment to avoid erosion and runoff, Environment Agency, 2008: ahdb.org.uk/thinksoils

