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Legacy contaminants: Past, present, and future

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Humans have impacted the environment for thousands of years and our impact has increased exponentially within the last two hundred years. Unfortunately, this environmental impact has largely been negative, as the amount of global pollution has increased drastically, harming humans and ecological systems. Many pollutants linger in the environment for extended timescales, posing hazards long after their initial release. Here, we showcase the primary findings and suggestions from our recent synopsis on legacy contaminants within the latest edition of the Treatise on Geochemistry. Focusing on these legacy contaminants, we provide a guided perspective to showcase essential research findings and what can be done moving forward to improve the overall global environment and our understanding of legacy contaminants. A consistent theme emphasized throughout the chapter is that today's emerging contaminants will be tomorrow's legacy contaminants because many modern pollutants emitted into the environment are persistent and degrade slowly. While there is a plethora of different types of legacy contaminants, we focus on a handful that are widespread and have been found on nearly every continent throughout the globe. These include toxic metal(loid)s, PFAS, common pesticides and herbicides such as DDT, and microplastics.