Environmental Pollution is an international journal that seeks to publish papers that report results from original, novel research that addresses significant environmental pollution issues and problems and contribute new knowledge to science.

The editors welcome high quality papers where the pollutants are clearly defined and measured and can be directly related to biological, ecological, and human health effects. This includes air, water, and soil pollution and climate change. New techniques for the study and measurement of pollutants and their effects are also encouraged as well as papers on new types of environmental challenges such as pollution/antibiotic resistances of organisms. Emerging pollutions are of eminent interest, such as microplastics, electronic wastes, light or noise pollution as long as they can clearly be related to the biological effects mentioned above. Papers must be process-orientated and/or hypotheses-based to be considered for population. Papers based on field studies are given priority for publication over micro/meso cosmos studies.

Papers, such as meta analyses, that report findings from re-examination and interpretation of existing data are welcome. Modeling papers are welcome only to a certain extent, i.e., they must be related to a specific pollution issue or process that is potentially of ecological and/or human health implications. Critical review papers and commentaries are also of high interest as are letters to the editor.

The editors do not wish to publish papers that describe results from routine surveys and monitoring programs that are primarily of local or regional interest. Descriptions of well-known pollutants, such as legacy pollutants, in yet another location are not of interest. Papers about sewage, waste and wastewater treatment and management as well as standard techniques in agronomy, remediation, biomonitoring, bioremediation and phytoremediation are not acceptable. However, papers on innovative techniques to combat regional or global problems are welcome; however, technical studies must show their field applicability.

Furthermore, the editors discourage submission of papers which describe analytical methods, laboratory experiments, food science studies, screening of new plant/animal/microorganism species for effect assessments and testing known pollution and chemicals in another setting. Eutrophication studies and secondary pollution by eutrophication are not covered by Environmental Pollution. In the same line, papers on ocean enrichment by CO2 will not be accepted.

The abstract (up to 300 words), highlights and conclusions of papers in this journal must contain clear and concise statements. A graphical abstract is mandatory. A cover letter must be accompanied...
with each submission, containing clear and concise statements as to why the study was done and how readers will benefit from the results.

Articles submitted for publication in *Environmental Pollution* should establish connections among research findings with implications for environmental quality, ecological health, and/or human health. The cover letter must explicitly express how the submission fits the Aims and Scope of Environmental Pollution. Failure to include the paragraph will result in returning the paper to the author.

The editors welcome the following contributions:

- **Full research papers**: Results from completed investigations reporting original and previously unpublished work.
- **Short communications**: A brief communication of urgent matter or the reporting of preliminary findings to be given expedited publication.
- **Review papers**: In-depth critical reviews of special subjects. Authors planning reviews should contact one of the editors prior to submission.
- **Commentaries**: Opinions and concerns about current scientific issues, invited or unsolicited
- **Letters to the Editor**: Short focused letters to raise issues or concerns about papers published in the journal and solicit a reply from the authors of those papers
- **Special Issues**: Special Issues will be published on emerging thematic issues and innovative conferences. An Editor or Associate Editor should be contacted early in the conference planning process to get approval and for guidelines on special issues of the journal. Furthermore, the Editors or Associate Editors will invite leading experts as Guest Editors for Special Issues.

**Editors-in-Chief**: D.O. Carpenter & Eddy Y. Zeng

**AUDIENCE**

Pollution research workers including chemists, toxicologists, environmentalists, conservationists, botanists, marine scientists, ecologists, biologists.

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**ABSTRACTING AND INDEXING**

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Soil pollution; Soil remediation; Heavy metals in the environment; Waste management; Bioavailability of Emerging Contaminant; Bioenergy and value-added products; Biochar and soil organic matter; Phytoremediation
Jörg Rinklebe, University of Wuppertal, Wuppertal, Germany
Soils, sediments, waters, plants, and their pollutions (in particular trace elements and nutrients) and linked biogeochemical issues with a special focus in redox chemistry; Remediation of soils and soil microbiology
Frank von Hippel, Northern Arizona University, Flagstaff, Arizona, USA
Perchlorate, OC pesticides, PCBs, PBDEs, PFCs, toxic metals (mercury, manganese, copper, arsenic) Ecotoxicology research incorporates molecular (gene expression), organismal (endocrine disruption, developmental disruption, behavior), and ecological approaches (stable isotopes) to solve problems in conservation biology and environmental health. A critical component of several of my larger research projects is community-based participatory research (CBPR) with indigenous people.
Wen-Xiong Wang, Hong Kong University of Science and Technology, Kowloon, Hong Kong
Metal Pollution, Metal Ecotoxicology, Metal Biogeochemistry, Metal Bioavailability Metal bioaccumulation, Metal toxicity, Environmental processes of metals, Bio monitoring, Biomarkers, Bioassays.
Charles Wong, University of Winnipeg, Winnipeg, Manitoba, Canada
Baoshan Xing, University of Massachusetts, Amherst, Massachusetts, USA

Editorial Board:
Dula Amarasiriwardena, Hampshire College, Amherst, Massachusetts, USA
Metal Pollution Environmental trace metal determination (ICP-MS, LA-ICP-MS) Metal chemical speciation Toxic metals in soils Tissue level elemental bioimaging Nanoparticles in Environment Environmental remediation -metals Humic substances in the environment
Allen Barker, University of Massachusetts, Amherst, Massachusetts, USA
Nigel Bell, Imperial College London, Kensington, London, UK
Effects of air pollution on managed and natural ecosystems; radioecology; waste management
Thomas Borch, Colorado State University, Fort Collins, Colorado, USA
Hydraulic fracturing, emerging contaminants, uranium mining, and carbon sequestration
Birgit Braune, Carleton University, Ottawa, Ontario, Canada
Arctic, marine ecosystems, birds, metals, organo-compounds, biomonitoring, biological effects
Juergen Burkhardt, University of Bonn, Germany
Andrzej Bytnerowicz, U.S. Department of Agriculture (USDA), Forest Service, Riverside, California, USA
Air pollution; monitoring; ozone; atmospheric deposition of nitrogen and sulfur; critical loads; impacts of wildland fires on air quality; evaluation of forest health; interactive effects of air pollution and climate change on terrestrial ecosystem; ambient air quality standards; passive samplers.
Art Chappelka, Auburn University, Auburn, Alabama, USA
Air pollution and global climate effects to terrestrial ecosystems; native plant community responses (shifts in diversity) to air pollutants and global climate change; plant-stress-air pollution/global climate change interactions; urban ecology and ecosystem services
Thomas Custer, U.S. Geological Survey (USGS), Lacrosse, Wisconsin, USA
Alessandra De Marco, ENEA Centro Ricerche Casaccia, S. Maria di Galeria, Rome, Italy
Impacts of air pollution on vegetation, with particular interest on ozone and nitrogen deposition; climate change and air pollution interactions and their synergistic impacts on ecosystems; integrated assessment modelling for evaluating impacts of policies and measures to reduce air pollution; nitrogen cycle and nitrogen budget and their importance in agricultural field

Marisa Domingos, MutaGen Brasil, Monte Alegre, Ribeirão Preto, Brazil

Environmental pollution and climatic change effects on natural vegetation, particularly in the tropics and subtropics Air-plant-soil interactions in polluted terrestrial ecosystems Physiologic, metabolic, structural/ultrastructural markers of increased plant tolerance against air pollutants and other environmental stressors Disturbances on nutrient dynamics in polluted terrestrial ecosystems Physiognomic/landscape disturbances in polluted terrestrial ecosystems The search of innovative biomonitoring technics for evaluating risks posed by air pollutants Ozone, nitrogen and sulfur oxides, particulate matter, fluoride, trace metals, polycyclic aromatic hydrocarbons

Juerg Fuhrer, AGROSCOPE, Zurich, Switzerland

Air pollution and climate change effects on crops, plant communities and agroecosystems, greenhouse gas fluxes in agricultural systems

Jiming Hao, Tsinghua University, Beijing, China

lichen biology epiphyte biology global change biology metals in forest ecosystems

Magali Houde, Environment Canada, Montreal, Quebec, Canada

Aquatic ecotoxicology, organic pollutants, toxicogenomics, biological effects, zooplankton and fish, bioaccumulation, impacts of waste water treatment plant effluent, emerging flame retardants, polyfluoroalkyl substances, marine mammals

Harri Kankaanpaa, Finnish Institute of Marine Research, Helsinki, Finland

Takayoshi Koike, Hokkaido University, Sapporo, Japan

Physiological ecology of woody plants (partly including crops) under changing environment (such as elevated ozone, high nitrogen loading, soil acidification, elevated CO2). My interest is to study on photosynthesis, respiration, growth, allocation of woody plants and plant-insect interaction.

Rai Kookana, CSIRO (The Commonwealth Scientific and Industrial Research Organization), Glen Osmond, South Australia, Australia

Pesticides, Environment Fate, Pharmaceuticals, Soil science, Fullerene nanomaterials

Jamie Lead, University of Birmingham, Birmingham, England, UK

Chunyang Liao, Chinese Academy of Sciences, Yantai, China

Emerging organic contaminants, Endocrine disrupting chemicals, Pesticides, Environmental analytical chemistry, Environmental behavior and fate, Bioavailability, Toxicological effects, and Risk assessment

Daohui Lin, Zhejiang University, Hangzhou, China

Aquatic toxicology, heavy metals pollution, constructed wetlands, fecal coliform pollution

Rainer Lohmann, University of Rhode Island, Narragansett, Rhode Island, USA

Passive samplers; POPs, sorption; bioaccumulation; atmospheric chemistry; marine pollution; long-range transport; oceans; black carbon; organic geochemistry

Stefano Loppi, Università degli Studi di Siena, Siena, Italy

Michael Lydy, Southern Illinois University, Carbondale, Illinois, USA

Pesticides, toxic effects on aquatic systems, pyrethroid insecticides, bioavailability, desorption-based samplers, sediment-associated organic contaminants, honey bees declines

Shaily Mahendra, University of California at Los Angeles (UCLA), Los Angeles, California, USA

Water treatment, environmental microbiology, environmental biotechnology, microbial ecology, enzymes, biodegradation, bioremediation, molecular biology, biomarkers, nano toxicology.

Andy A. Meharg, Queen's University Belfast, Northern Ireland, Belfast, Northern Ireland, UK

Thomas Meinelt, Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany

Alternative treatments in aquaculture, Impact (and interaction) of humic substances on environment and animals.

Willie Peijnenburg, Universiteit Leiden, Leiden, Netherlands

Risk assessment; Ecological risk assessment; Environmental fate and effect assessment; Nanoparticles; Bioavailability; Metals; Organics; Quantitative Structure-Activity Relationships (QSARs); Transformation of chemical substances; Biodegradation; Abiotic transformations

Elijah J. Petersen, National Institute of Standards and Technology (NIST), Gaithersburg, Maryland, USA

Nanomaterials, carbon nanomaterials, standardization, nanotoxicity, carbon nanotubes

Stergios Pirintzos, University of Crete, Iraklion, Crete, Greece

"Biomonitoring of air pollution, trace elements and nitrogen using lichens Climate change issues and lichens Lichens and hydrogen production Lichen physiology and pollution Sensitivity issues of lichens Lichen diversity and vegetation in Mediterranean Ecosystems"

Pleijel, Göteborgs Universitet, Göteborg, Sweden
Ozone (effects on vegetation) Carbon dioxide (effects on vegetation) Urban ecology (especially air pollution in relation to vegetation) Temporal and spatial variation in air pollution exposure Crops (especially effects of air pollutants on growth and nutrient content) Deposition of air pollutants Weather and climate dependence of air pollution Climate change effects on crops

**Markus Puschenerreiter**, Universitat für Bodenkultur Wien (BOKU), Vienna, Austria
Heavy metals/trace elements in soils and plants, rhizosphere processes involved in metal/trace element acquisition, soil remediation technologies / phytoremediation

**Brian Reid**, University of East Anglia, Norwich, England, UK
Soil contamination; biochar; pesticides; HOCs; PAHs; PTEs

**Dibyendu Sarkar**, Stevens Institute of Technology, Hoboken, New Jersey, USA
Environmental Geochemistry, Soil Chemistry, Environmental Quality and Remediation, Human Health Risk Assessment, Green Technology

**Jörg Schaller**, Universität Bayreuth, Bayreuth, Germany
Nutrient, silicon and metalloid cycling; element fixation during litter decomposition; crop plant nutrition and trace element accumulation; invertebrates; silicon effect on metal binding; metal toxicity; carbon turnover; silicon turnover; rare earth element; ecosystem processes; silicon nano particles

**Wada Shin-Ichiro**, Kyushu University, Fukuoka, Japan

**Richard Shore**, Centre for Ecology and Hydrology (CEH), Bailrigg, Lancaster, UK

**Philip Smith**, Texas Tech University, Lubbock, Texas, USA
Ecotoxicology, ecological risk assessment, wildlife toxicology

**Stefania Squizzato**, Clarkson University, Potsdam, New York, USA

**Jordi Sunyer**, CREAL, Barcelona, Spain

**FiliP Tack**, Universiteit Gent, Gent, Belgium
Heavy metals, trace element biogeochemistry, dredged materials, soil and sediment remediation, phytoremediation

**Shu Tao**, Peking University, Beijing, China

**Doris Vetterlein**, Umweltforschungszentrum (UFZ) Leipzig-Halle GmbH, Halle/Saale, Germany

**Zhenyu Wang**, Ocean University of China, Qingduo, China

**Paul Williams**, Chinese Academy of Sciences (CAS), Beijing, China

**Bert Wolterbeek**, Delft University of Technology, Delft, Netherlands
plant physiology, air pollution (methods, effects), (bio)monitoring, radionuclides, kinetics, dynamics, metals, radioecology

**Feng Xiao**, University of North Dakota, Grand Forks, North Dakota, USA
Perfluorochemicals (PFCs) and perfluoroalkyl substances (PFASs); Perfluorooctanoate (PFOA) and perfluorooctanesulfonate (PFOS); Biochar; char; soot, black carbon, and activated carbon; Adsorption; Water chemistry; Drinking-water treatment; Emerging contaminants and environmental monitoring; Geographic Information System; Exploratory data analysis; Exposure assessment.

**Scott Young**, Nottingham, Nottingham, UK
Bioavailability, speciation and mobility of trace metals and radioisotopes in the environment and specifically with the geochemical controls over trace element deficiency and toxicity

**Shuzhen Zhang**, Chinese Academy of Sciences (CAS), Beijing, China
persistent organic pollutants, bioavailability, plant uptake of organic contaminants, plant uptake of nanoparticles, plant uptake of heavy metals, soil accumulation of contaminants, adsorption mechanisms of organic contaminants, adsorption mechanisms of heavy metals, synchrotron X-ray absorption spectroscopy analysis, metabolism and biotransformation of organic contaminants

**Fangjie Zhao**, Nanjing Agricultural University, Nanjing, China
Biogeochemistry of trace elements, uptake and detoxification of heavy metals in plants, bioremediation
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Introduction
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legacy pollutants, in yet another location are not of interest. Papers about sewage, waste and
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