

**Title:**

**OPAL: A community-driven environmental research programme**

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**Abstract:**

Open Air Laboratories (OPAL) ([www.OPALexplorenature.org](http://www.OPALexplorenature.org)) seeks to provide opportunities for the public to work in partnership with scientists investigating aspects of environmental degradation. We apply a range of approaches from traditional field-based observation and monitoring techniques to more sophisticated instrument-focused meteorological measurements that feed into climate models. The spectrum of opportunity for engagement is broad with projects suitable for any age, ability or background. Our main focus is urban. Central to the programme is a series of five ecological surveys. These are launched every six months and are supported by training and events throughout the country. The first, on soil health, includes basic soil tests such as pH, soil texture, colour etc., an earthworm count and species identification. Field guides, workbooks and identification charts have been developed by multi-disciplinary teams and the data received are mapped live onto the OPAL portal. Interactive keys and other image-based social networking techniques led by academics and natural history societies provide support with species identification and encourage and reward skill development. Early results will be presented with insights into how these data are influencing the next stage of the soil team's research. Similar results on air and water will be presented.

Communities are shaping the nature of the research programme at the regional level where the focus shifts to local environmental problems. Working with the regional academic team and their community scientist, local people are contributing to a range of projects from the loss of epiphytes to the effect of nitrogenous pollutants on heathland communities.

Over 100,000 people have contributed to the research programme so far, 1,000 organisations including statutory and voluntary sectors are involved and over 1,000 schools. We review the impact of this scale of collaboration and its contribution to our knowledge of the state of the environment.

Key words: public participation, ecosystems, pollution, biodiversity