Centre for Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL

Radioactivity Remediation

Following a nuclear accident issues such as the recovery of contaminated land need to be addressed. *(Photograph - Shutterstock)*

Background

Following a nuclear accident, two levels of response can be expected: immediate, short-term action, when the emergency services are at the fore; and medium- and long-term action, when issues such as the recovery of contaminated land need to be addressed. In the latter case, both urban and rural land might be involved and we need to try and ensure that acceptable living and working conditions are sustained by using practical, cost-effective and acceptable restoration strategies for the different types of environment and land use.

Research and Monitoring by CEH

The approach taken by STRATEGY, a European project, led by CEH, was based on the use of datasheets for a wide range of countermeasures combined with a model. This enabled users to select optimal remediation strategies for the long-term sustainable management of contaminated areas. The datasheets incorporated a wide range of different factors which might affect the acceptability, effectiveness and practicality of each countermeasure. The datasheets now form part of the UK Radiation Recovery Handbook, which is partly-funded by the Food Standards Agency (FSA). The handbook, produced by the Health Protection Agency, is intended to provide management and mitigation information for the recovery of contaminated land once an incident has occurred. "The work is considered to be very high in importance," according to Andy Dugdale of the FSA. "Recent emergency exercises have focused on recovery issues and the role of the handbook during discussions on options post-acute phase of an accident has been invaluable."

One example scenario considered a hypothetical nuclear incident in Cumbria. The optimal combination of countermeasures suggested by the model resulted in a decrease in collective population exposure dose of over 90% while maintaining practical land use over a 10-year period. The optimised approach could reduce the costs of applying countermeasures from £2,300 million to £160 million by banning contaminated food.

Much of CEH's research is carried out in partnership with, or funded in conjunction with, other organisations.

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