

An overview of field effects studies in the Chernobyl Exclusion Zone

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Abstract

In the initial aftermath of the 1986 Chernobyl accident there were detrimental effects recorded on wildlife, for instance:

- Mass mortality of pine trees over *c.* 6 km² close to the NPP
- Reduced seed production in pine trees over a larger area
- Reductions in soil invertebrates
- Likely death of wild mammals (low numbers were recorded in autumn 1986)

Twenty-five years after the Chernobyl accident there is no consensus on the longer-term impact of the chronic exposure to radiation on wildlife in the area around the NPP from which people were evacuated in 1986. Reconciling this lack of consensus is one of the main challenges for radioecology. With the inclusion of environmental protection in, for instance, the recommendations of the ICRP, we need to be able to incorporate knowledge of the potential effects of radiation on wildlife within the regulatory process (e.g. as a basis on which to define benchmark dose rates).

In this paper we will review some of the papers reporting effects on wildlife from the Chernobyl Exclusion Zone. We will structure this on the basis of different organism types and for each we will present the differing results and discuss the potential reasons for this. To illustrate some points we will present some novel results from on-going studies.

We will also briefly discuss related post-Fukushima research and make recommendations for the future.