Beresford et al. Predicting radionuclide transfer to wild animals REB 44

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A number of assessment frameworks have been proposed to provide a mechanism to demonstrate protection of the environment from ionising radiation. Whilst some of these are being used for assessment purposes they have largely not been validated against field measurements. In this paper we compare the predictions of transfer parameters recommended by one of these frameworks (FASSET) with observed whole-body ^{90}Sr and radiocaesium activity concentrations in a range of mammal and invertebrate species sampled within the Chernobyl exclusion zone. Predicted activity concentrations were generally within the observed ranges and mean predictions for reference organisms were similar to, or circa one order of magnitude higher than, the observed means. However, some predictions were more than one order of magnitude lower than observed values. No data were available to test predictions for the other radionuclides released by the Chernobyl accident. In a separate paper the outputs of this assessment will be used to estimate doses to reference organisms and compare these to observed radiation induced effects reported within the Chernobyl zone.

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