

Wood et al. Application of ERICA to the Drigg sand dunes

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Wood, M.D., Marshall, W.A., Beresford, N.A., Jones, S.R., Howard, B.J., Copplestone, D., Leah, R.T. Application of the ERICA Integrated Approach to the Drigg coastal sand dunes.
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The EC-funded project 'Environmental Risks from Ionising Contaminants: Assessment and Management' (ERICA) developed an 'Integrated Approach' for assessing the impact of ionising radiation on ecosystems. This paper presents the application of the ERICA Integrated Approach, supported by a software programme (the ERICA Tool) and guidance documentation, to an assessment of the Drigg coastal sand dunes (Cumbria, UK). Targeted sampling provided site-specific data for sand dune biota, including amphibians and reptiles. Radionuclides reported included ^{90}Sr , ^{99}Tc , ^{137}Cs , ^{238}Pu , $^{239,240}\text{Pu}$ and ^{241}Am . Site-specific data were compared to predictions derived using the ERICA Tool. Some under- and over-predictions of biota activity concentrations were identified but can be explained by the specific ecological characteristics and contamination mechanism of the dunes. Overall, the results indicated no significant impact of ionising radiation on the sand dune biota and the Integrated Approach was found to be a flexible and effective means of conducting a radiation impact assessment.

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