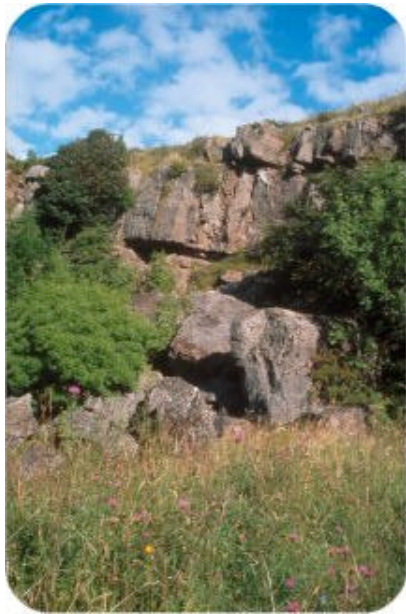
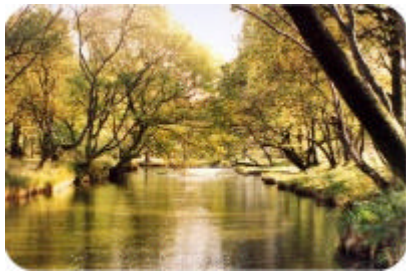


Project: Assessing the impacts of radiological discharges upon wildlife
Client: BIL Solutions Limited

The Challenge

As part of a routine discharge authorisation review, our client was asked to consider the impact of its discharges upon local flora and fauna, in particular those located within nearby Sites of Special Scientific Interest (SSSIs).



The Solution

Liasing closely with our client, we performed rigorous prospective dose to biota assessments that would satisfy the regulator's requirements.

The project entailed:

- gathering authorised emissions data
- identifying sensitive ecological receptors that may be subject to gaseous and liquid emissions from the site
- conducting assessments for routine releases and those at monthly authorised limits for each nuclide
- dispersion modelling used to obtain ground level air concentrations at three receptor sites (two SSSIs and a local freshwater pond) within 5 km of the emission point
- aerial modelling utilising both actual and effective stack heights
- calculating activity concentrations in water for a local river (designated as a SSSI and Special Area of Conservation (SAC)), using national guidelines
- calculating doses to biota using modelled concentrations in air and water and the methodology (EA R&D 128) developed by Westlakes Scientific Consulting for the Environment Agency and English Nature
- comparing weighted and unweighted doses for terrestrial and freshwater species against IAEA and EA screening criteria

Maximum dose rates were shown to be orders of magnitude below the strict guideline values issued by the EA for freshwater and terrestrial ecosystems

The Benefits

- The client was able to show the regulator that component and feature species within the conservation areas are not at risk from their releases to air and drain.

References

Copplestone, D., Bielby, S., Jones, S.R., Patton, D., Daniel, P. and Gize, I. (2001). *Impact Assessment of Ionising Radiation on Wildlife. Environment Agency R&D Publication 128*, Environment Agency, Bristol.



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