

## Radioactive Solway

Parts of the North Solway coast are heavily contaminated with radioactivity from Sellafield according to a report\* on the transfer of radionuclides.

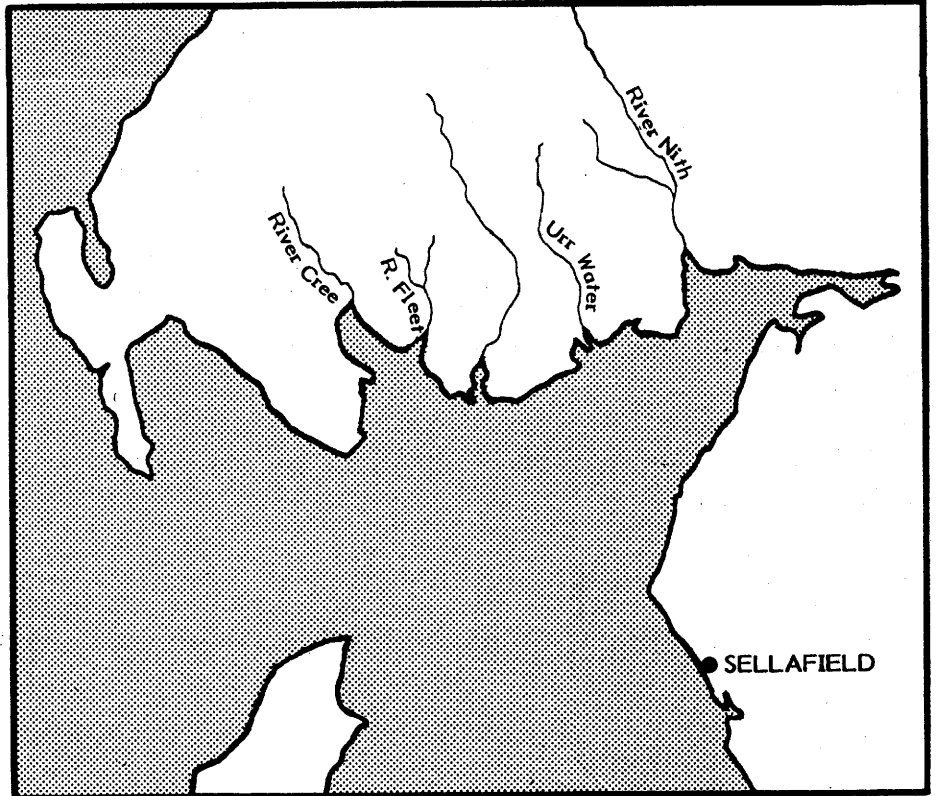
When announcing its publication, the Scottish Office said, the research had established "that the radiological impact on the inhabitants is well within the internationally accepted limit."

However, the study carried out by the Scottish Universities Research and Reactor Centre and commissioned by the Department of Environment, shows that levels of Caesium (Cs) 137 in two samples of soil taken from the banks of the Rivers Cree and Fleet exceed the official safety limits.

These Generalised Derived Limits (GDLs) are based on maximum public exposure levels of 1mSv/yr. If this is reduced to 0.5mSv/yr, as has been recommended by the NRPB, then the samples taken from around the River Nith and Urr Water would breach the limit as well.

The research provides evidence that radionuclides migrate from Sellafield in the marine environment to the Solway Firth, but sea-to-land transfer by aerial resuspension is usually limited to 500m inland. However, tidal inundation upriver is a much more effective mechanism of transferring radionuclides from sea to land. Radionuclides can be detected up to 17.5km upriver, although they are restricted to an area only a few metres on either side of the river course.

Besides the high Cs 137 levels,



the Cree, Fleet and Urr river systems produced samples with Plutonium (Pu) and Americium (Am) 241 activities above or close to 25% of the GDL. This implies, according to the report, "the need to review critical group doses particularly in the vicinity of the Cree and Urr rivers where riverbank areas are readily accessible to grazing sheep and cattle."

The report concludes that whilst the radiological situation in the area is "generally one of negligible

Sellafield influence", there are some localised radioactive deposits which are "significant fractions of the most relevant GDLs".

The Scottish Office have said that a new research project is being established in response to the report's recommendations, aiming to report within two years.

\* An assessment of Artificial Radionuclide Transfer from Sellafield to South West Scotland: Scottish Universities Research and Reactor Centre Report. Reference: DOE/RW/89/127.