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Science Report

Pollution: Sewage killing marine life

The way in which several tons of the industrial chemicals polychlorinated biphenyls, or PCBs are being dumped each year in coastal waters round Britain is outlined in a report from the Freshwater Fisheries Laboratory, Pitlochry, Scotland.

It provides the possible explanation of how this substance has been able to accumulate offshore in sufficient quantities to harm marine life.

Anxiety about the spread of PCBs has grown over the past two years with the detection of harmful levels in sea birds, seals and other marine life. These chemicals have been a contributory cause of the death of large populations of some wildlife species.

PCBs are produced for a wide variety of industrial processes. The most likely cause of their spread seemed to be the discharge of factory effluent into rivers and thence down to estuaries. But it has been difficult to reconcile this seemingly straightforward event with the finding of biphenyl substances in certain cases of wildlife death.

The investigation at Pitlochry started from an analysis of marine fish and molluscs in Scottish waters that showed the highest residues of PCBs to be in samples taken from the Firth of Clyde.

Attempts were made to trace the source of pollution by examining the various waters discharged into the river at intervals along the Clyde to the centre of Glasgow.

No detectable amounts were found; nor were any appreciable levels shown in an examination of the effluent from the trunk sewers carrying the bulk of treated waste discharged from many hundreds of factories.

In the report Mr. A. V. Holden describes how the investigation then turned to studying the sewage sludge from treatment works which

is carried by boat to the estuary and dumped in deep water six miles south of Garroch Head, Isle of Bute.

It appears that it is in this process that quantities of biphenyls are being dispersed in the sea. Preliminary estimates suggest that about a ton of PCBs is being dumped in the Clyde estuary this way.

Similar disposal operations for Manchester and London indicate that similar quantities are being

dumped in the northern Irish Sea and the Thames estuary.

Mr. Holden suggests that some PCBs may be entering the sea directly in areas where waste is discharged offshore without treatment, and the disposal of sludge on land could lead to PCB residues entering the terrestrial ecosystem by transfer through food chains.

By Peter Wright, Science Correspondent.
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