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LONG-TERM TRENDS IN PBDEs IN UK GANNET AND SPARROWHAWK EGGS

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ABSTRACT

The Predatory Bird Monitoring Scheme (PBMS —<http://pbms.ceh.ac.uk>) is a long-term, national monitoring scheme that quantifies the concentration of contaminants in the livers and eggs of selected species of predatory and fish-eating birds in Britain. The aim is to determine how and why contaminants vary between species and regions, their changes over time, and the effects they may have on individual birds and their populations. The PBMS archive was used to retrospectively analyse long term trends in levels of polybrominated diphenyl ethers (PBDEs) in sentinel bird species. We used the Northern gannet (*Morus basanus*) as a sentinel of contamination in marine waters and measured PBDE contamination in gannet eggs collected between 1977 and 2007 from Ailsa Craig (Western Atlantic) and Bass Rock (North Sea). The Eurasian sparrowhawk (*Accipiter nisus*) was our sentinel for the terrestrial environment and we measured PBDE concentrations in eggs collected between 1985 and 2007. The temporal trend in sum PBDE congeners differed between marine and terrestrial sentinels. In gannets from in both colonies, egg sum PBDE concentrations increased mainly from the late 1980s, peaked in 1994, and then rapidly declined so that concentrations in 2002 were similar to, or lower than, those in the 1970s and 1980s. In sparrowhawks, the temporal profile was similar to that of gannets until the mid-90s but there was no subsequent decrease and levels remained high up until the end of the study. Sum PBDEs in sparrowhawk eggs were some of the highest reported in Europe but concentrations in gannet eggs were much lower and were similar to concentrations observed in the eggs of other European seabirds.



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