



Assessment of emerging and traditional halogenated contaminants in Guillemot (*Uria aalge*) egg from North-Western Europe and the Baltic Sea.

<https://arctichealth.org/en/permalink/ahliterature89221>

Author: Jörundsdóttir Hrönn
Bignert Anders
Svavarsson Jörundur
Nygård Torgeir
Weihe Pál
Bergman Ake

Author Affiliation: Department of Environmental Chemistry, Stockholm University, Stockholm, Sweden.

Source: Sci Total Environ. 2009 Jun 15;407(13):4174-83

Date: Jun-15-2009

Language: English

Publication Type: Article

Abstract: Persistent organic pollutants (POPs) are readily detected in biological samples at remote sites in the Arctic and sub-Arctic due to long-range transport from source areas. The aim of this study was to investigate the presence of POPs, polybrominated contaminants and their metabolites in guillemot (*Uria aalge*) eggs from Iceland, the Faroe Islands, Norway and Sweden to assess spatial trends of these compounds in the Arctic and sub-Arctic areas of Europe. Egg samples were extracted, and cleaned for chemical analysis. Concentrations of PCBs, 4,4'-DDE and beta-HCH were an order of magnitude higher in eggs from the Baltic Proper compared to eggs from the North Atlantic. Concentrations of HCB were of the same magnitude at all sites, ranging from 160 to 520 ng/g fat. Concentration of BCPS was 100 times higher in eggs from the Baltic compared to eggs from the North Atlantic and seems therefore to be special regional problem. Concentrations of PBDEs were lower in eggs from the North Atlantic compared to eggs from the Baltic Proper but the difference was not as large as for PCBs and 4,4'-DDE. HBCDD showed the same spatial trend as PCBs, where the concentrations in eggs from the Baltic Proper were an order of magnitude higher than in eggs from the North Atlantic. OH-PCB and MeSO(2)-PCB metabolites of PCBs, showed the same trend as the parent compounds while spatial trends of MeSO(2)-DDE and OH-PBDEs, metabolites of 4,4'-DDE and PBDEs, respectively, differed from the trend of the parent compounds. This may be due to two factors; firstly, the limited ability of birds to metabolise DDT, and secondly, to natural production of OH-PBDE, respectively. Guillemot is suggested as a monitoring species for circumpolar monitoring.

PubMed ID: 19395067 [View in PubMed](#)