

# Concentrations of Polycyclic Aromatic Hydrocarbons (PAHs) in the Eggs of Predatory Birds in Britain

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The eggs of gannets from two Scottish colonies (Ailsa Craig, Bass Rock) of golden eagles from the Hebrides and Highlands and of merlin eggs from the Scottish borders were analyzed for 52 PAHs, including 2-7 ring parent and alkylated PAHs. Phenanthrene was the most abundant PAH in gannet eggs from Ailsa Craig, and methylnaphthalenes predominated in the eggs from other locations and species. Most PAHs were detected in eggs but none were at likely embryotoxic concentrations. The sum concentrations for all the PAHs analyzed (3.1-5.7 ng g<sup>-1</sup> wet wt.) and for the U.S. EPA 16 priority PAHs (2.0-4.3 ng g<sup>-1</sup> wet wt.) did not differ significantly between species or locations. This uniform, low-level accumulation suggests background exposure to diffuse sources. PCA indicated that 3 ring parent and alkylated PAHs predominated in the eggs of merlins and gannets from Ailsa Craig and Hebridean golden eagles; other eggs had a more mixed profile. Source signature diagnostics largely suggested a petrogenic origin for the PAHs in the merlin eggs that we analyzed but otherwise gave equivocal results and further work is needed to determine which diagnostics can be successfully applied to PAHs in eggs.

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