

Trace elements and organochlorines in sperm whales stranded on the coast of Schleswig Holstein in 2016

Marianna Pinzone², Joseph G. Schnitzler¹, Jean-Pierre Thomé³, Krishna Das², Ursula Siebert¹.

¹ Institute for Terrestrial and Aquatic Wildlife Research, University of Veterinary Medicine Hannover, Foundation, 25761 Büsum, Schleswig-Holstein, Germany.

² Laboratory of Oceanology, *MARE Center*, University of Liège, B6C, 4000 Liège, Belgium.

³ Laboratory of Animal Ecology and Ecotoxicology, CART, University of Liège, B6C, 4000, Liège, Belgium.

Several strandings of sperm whales occurred in the North Sea during January and February 2016. Twelve animals were necropsied and sampled after their discovery on German coasts of Schleswig Holstein. Muscle, liver, kidney and blubber samples were taken from all specimens for toxicological analyses. The concentrations of lipophilic organic pollutants such as polychlorinated biphenyl (PCB) and pesticides such as DDT were determined in adipose tissue. Metals and trace elements such as cadmium, selenium and mercury were measured in the liver, kidney and muscle. Polychlorinated biphenyls (PCBs) and pesticides such as DDTs were determined in adipose tissue at levels of 0.9 and 1.3 mg.kg⁻¹ lipid weight respectively. Cadmium, selenium and mercury were measured in the liver at respective concentrations of 57, 52 and 81 mg.kg⁻¹ dry weight. The investigated 12 sperm whales stranded on the coasts of Schleswig Holstein in spring 2016 showed a lower contamination of organic pollutants than the 7 sperm whales stranded along the Belgian and Dutch coast in the winter of 1994/95. These animals were clearly larger and older than the ones that stranded in Schleswig-Holstein. So, lower contaminant burden may be due to shorter life span. It seems unlikely that contamination is the direct cause of the death of sperm whales. However, debilitating role of pollutants cannot be excluded, as strandings are often a multi factorial event. Further investigations on the contaminant patterns among the 30 sperm whales at different stranding sites may also give indications on the feeding strategy and linkage among the individuals.