

Plastic ingestion by harbour seals (*Phoca vitulina*) in The Netherlands

Abundance of ingested debris in stomachs of seals has been mentioned as a potential indicator of marine litter in the European Marine Strategy Framework Directive (MSFD).

In 2002, an epidemic viral disease killed many Harbour Seals (*Phoca vitulina*) around the North Sea. From The Netherlands, a sample of 107 stomachs, 100 intestines and 125 scats were analysed for the presence of plastics.

Incidence of plastic was 11% for stomachs, 1% for intestines, and 0% for scats. Younger animals, up to three years of age, were most affected. This is the first quantitative study of plastic ingestion by phocid seals.

The observed level of incidence is of environmental concern, but is low in the sense of suitability of seals for MSFD monitoring purposes.



Harbour Seal that died from the virus



Stomach content of a Harbour Seal showing several plastic sheets, threads, and two 'stones' possibly industrial slags.

Incidence of plastic in seal age classes



Total number of items and mass of different plastic categories found in 107 stomachs

Category	Number	Mass (g)
Industrial	0	0.0000
Sheet	10	0.4038
Threads	15	1.9667
Foam	0	0.0000
Fragments	2	0.1535
Other	1	0.0826
Total	28	2.6006