

Occurrence of microplastics in brown shrimp on the Belgian part of the North Sea

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Goal

- To evaluate number of microplastics ingested by brown shrimp (*Crangon crangon*) from different locations in the Belgian part of the North Sea

- To investigate possible correlation between benthic plastic litter and ingested microplastics



Microplastics Method

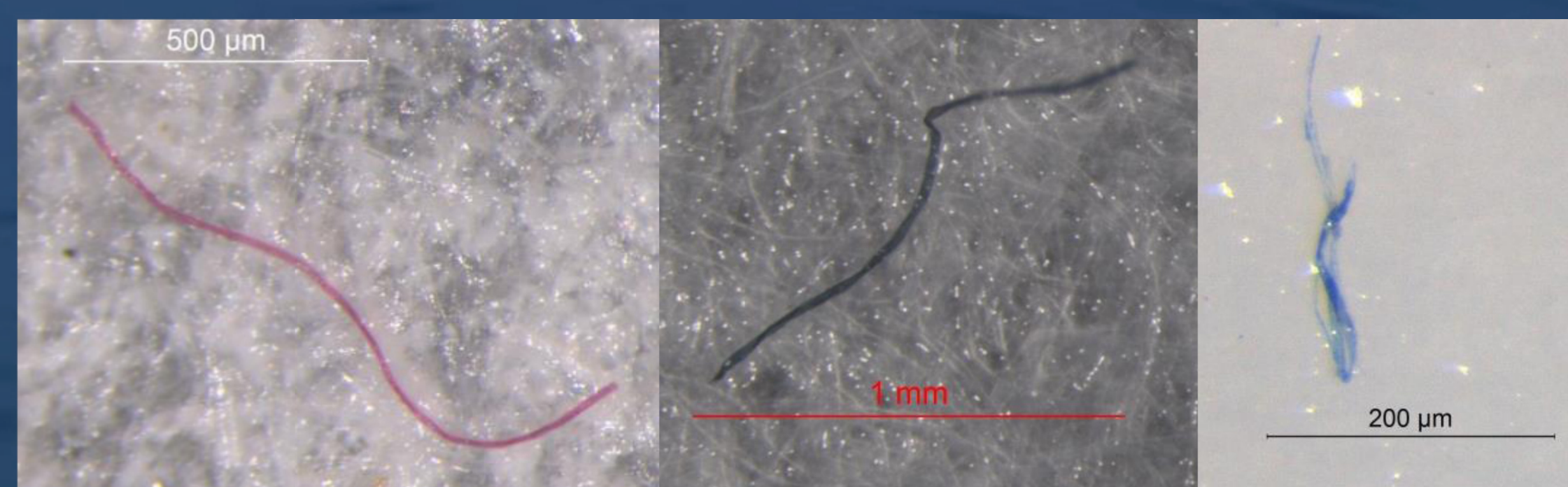
- Sample: 5 shrimps + 3 blanks
- Acid destruction $\text{HNO}_3:\text{HClO}_4$ (4:1 v/v)
- 50ml acid / 10g tissue
- Detection: stereo microscope
- Verification of microplastics: hot needle



Benthic litter

- On each location: 15 min trawling
- 8 m shrimp beam trawl
- Litter identification based on CEFAS sheets
- Litter counts in items/km²

LOD values for fibres (number / 10g tissue)

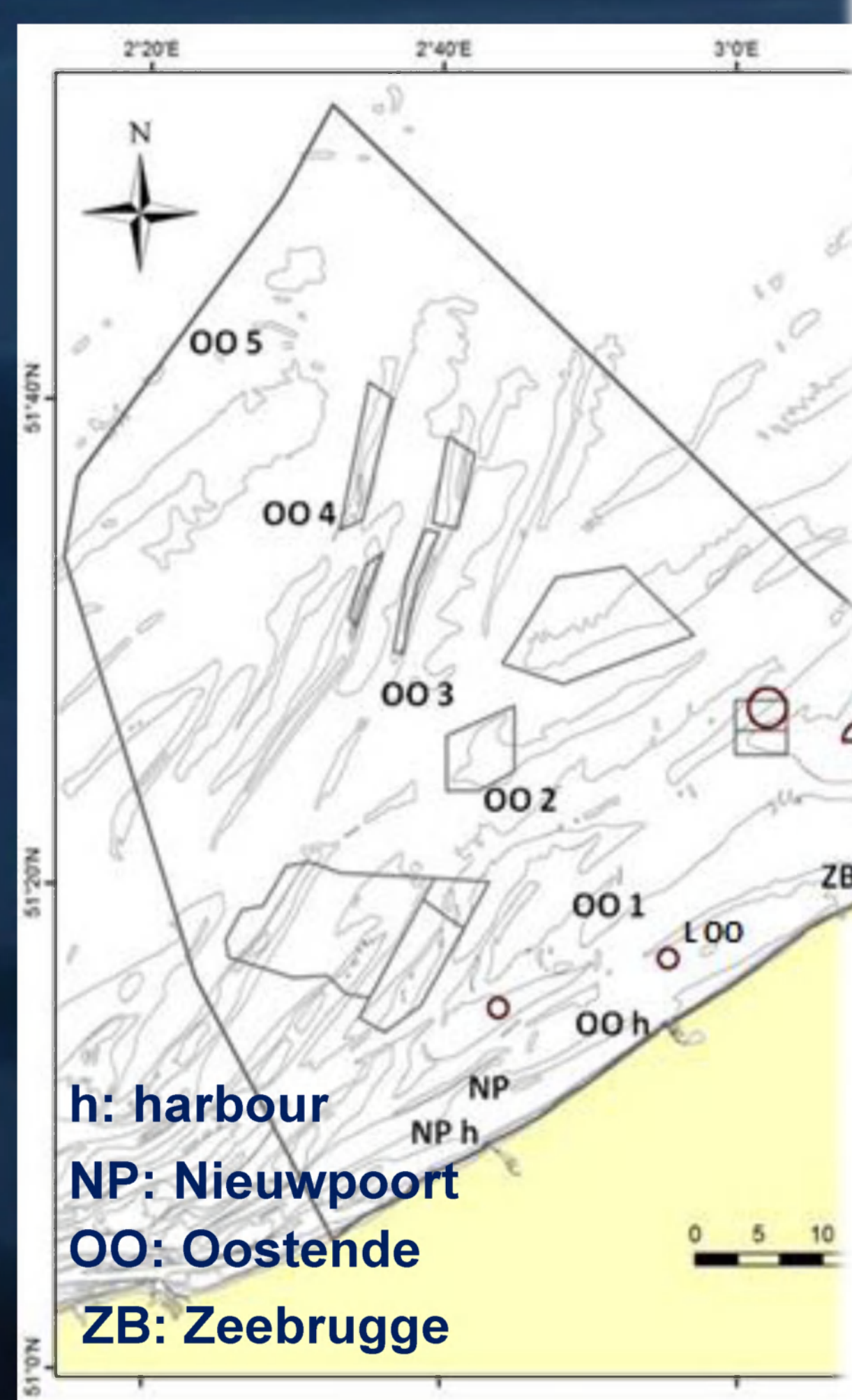


- RED fibre: 1.5
- BLUE fibre: 4.7
- BLACK fibre: 2.3

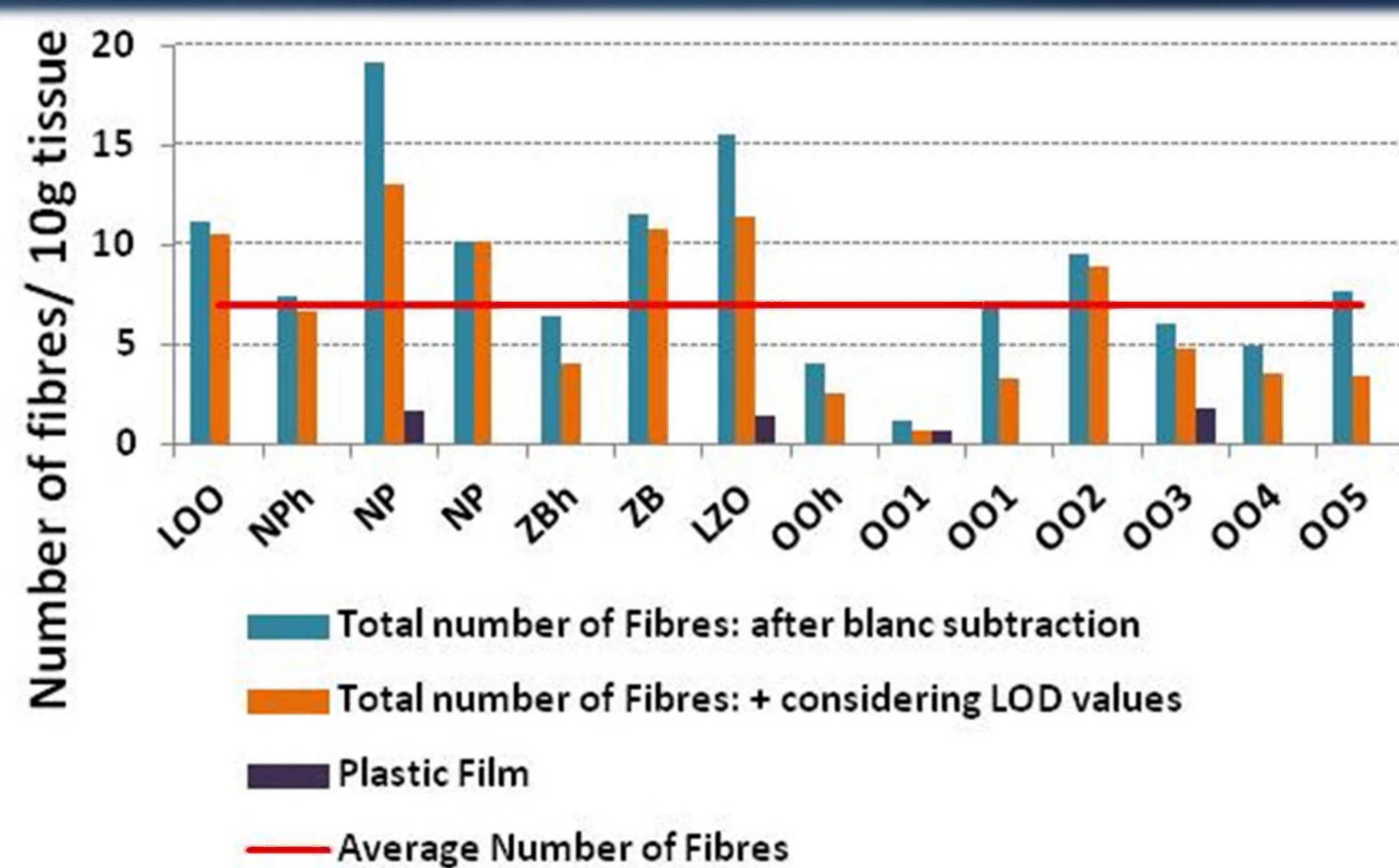
De Witte et al. 2014, submitted

Results

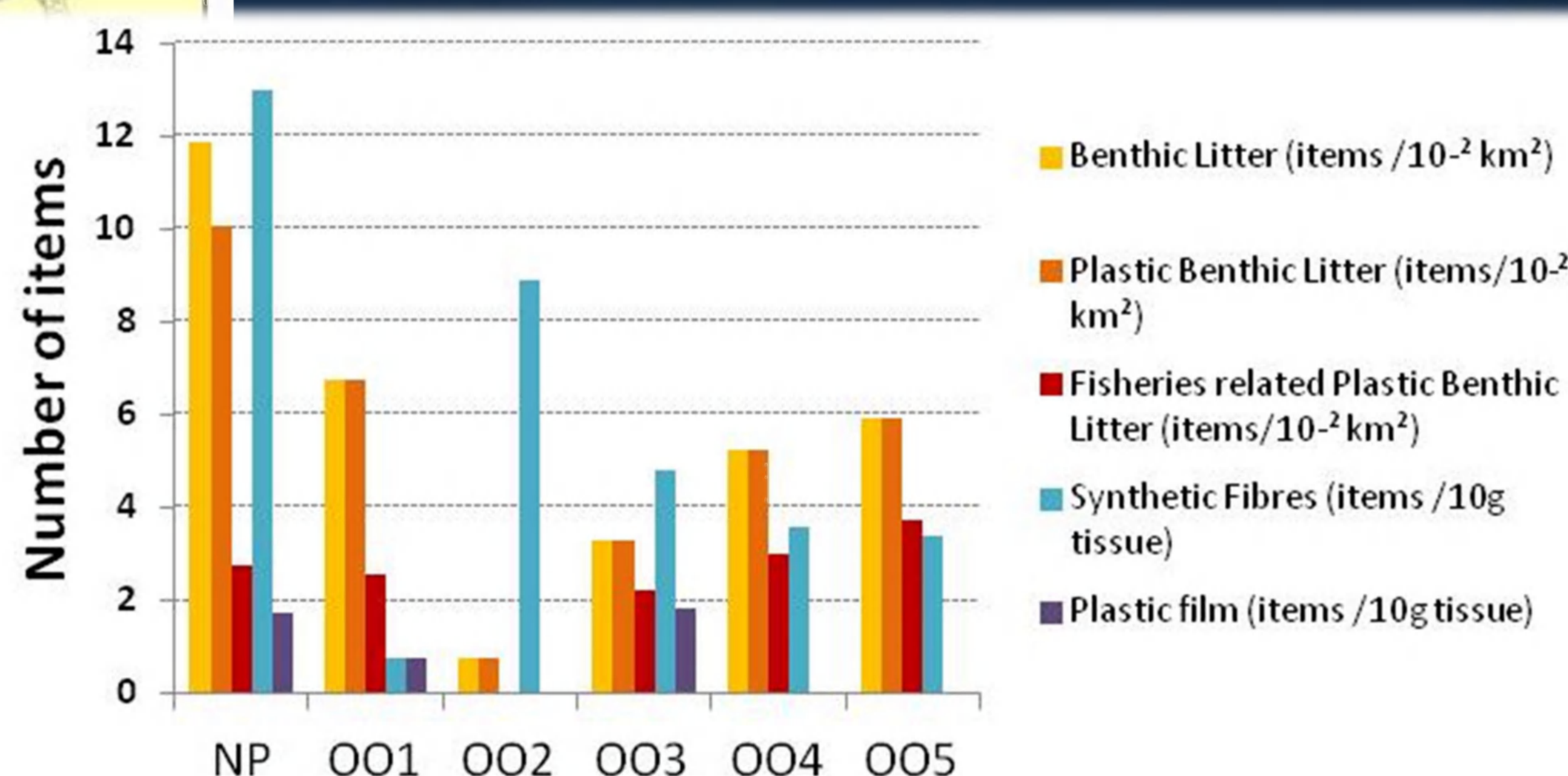
Belgian Part of the North Sea Sampling locations:



Microplastics in brown shrimp:



Benthic litter on BPNS:



Conclusion

Ingested microplastics:

→ large variation between samples and individuals

→ mainly synthetic fibres!

Average: 7 fibres ± 4/ 10g tissue

→ some pieces plastic film

→ 1 portion of brown shrimps

(100g) of the BPNS can contain 30-110

synthetic fibres



Benthic litter on BPNS:

→ mainly plastic litter!

→ correlation with number of ingested microplastics in brown shrimp not clear yet



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