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Faecal bacteria on seaweeds in Greenland

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Introduction

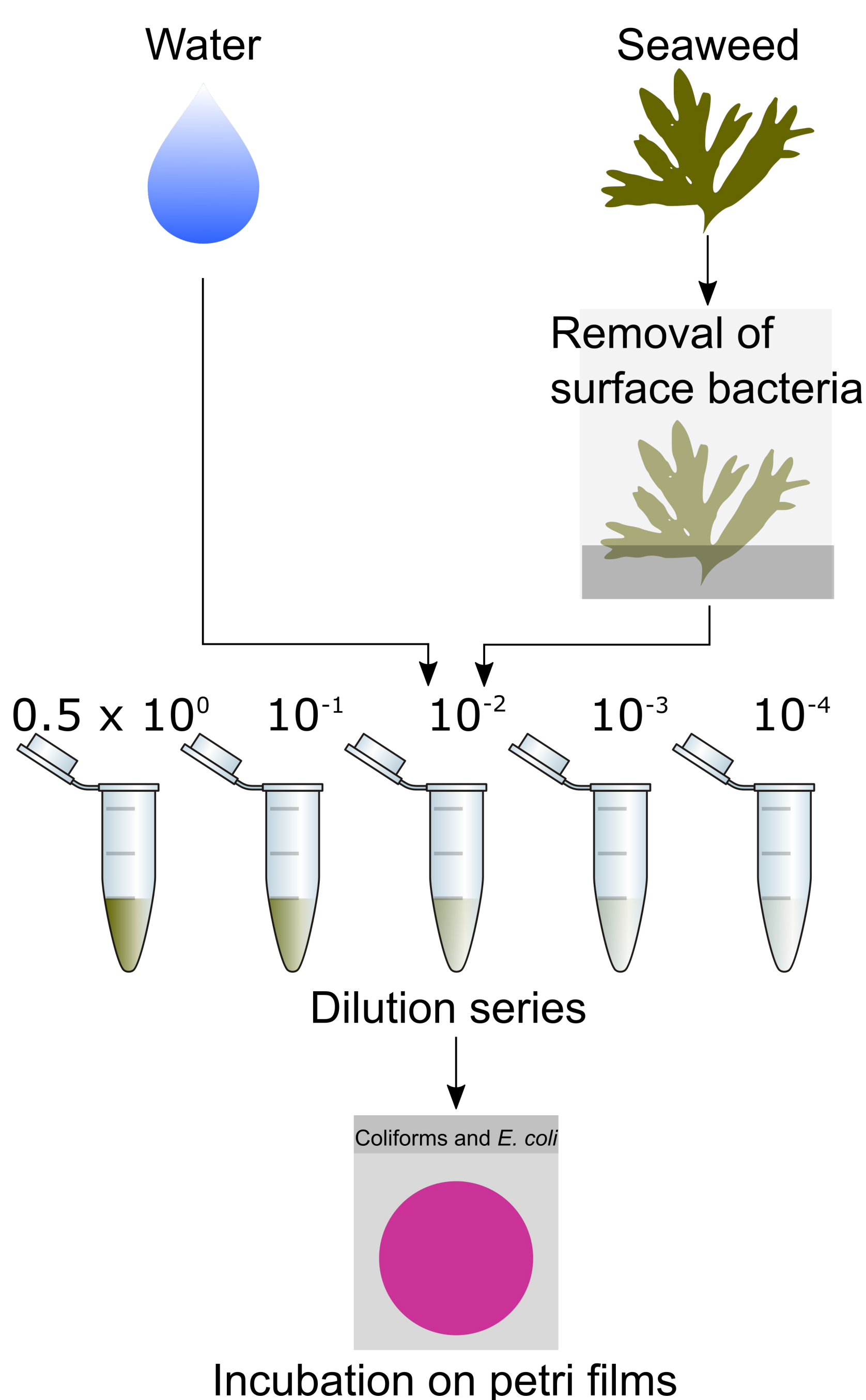
Edible seaweeds are of private and commercial interest in Greenland. However, little is known about the impact of harvest locations on the microbial food safety.

In this study, we looked at the influence of the proximity of the discharge of human wastewater on the suitability of seaweed collected from the shoreline as a food item. We also compared the content of faecal indicator bacteria in the seawater with that on the harvested seaweed.

Research questions

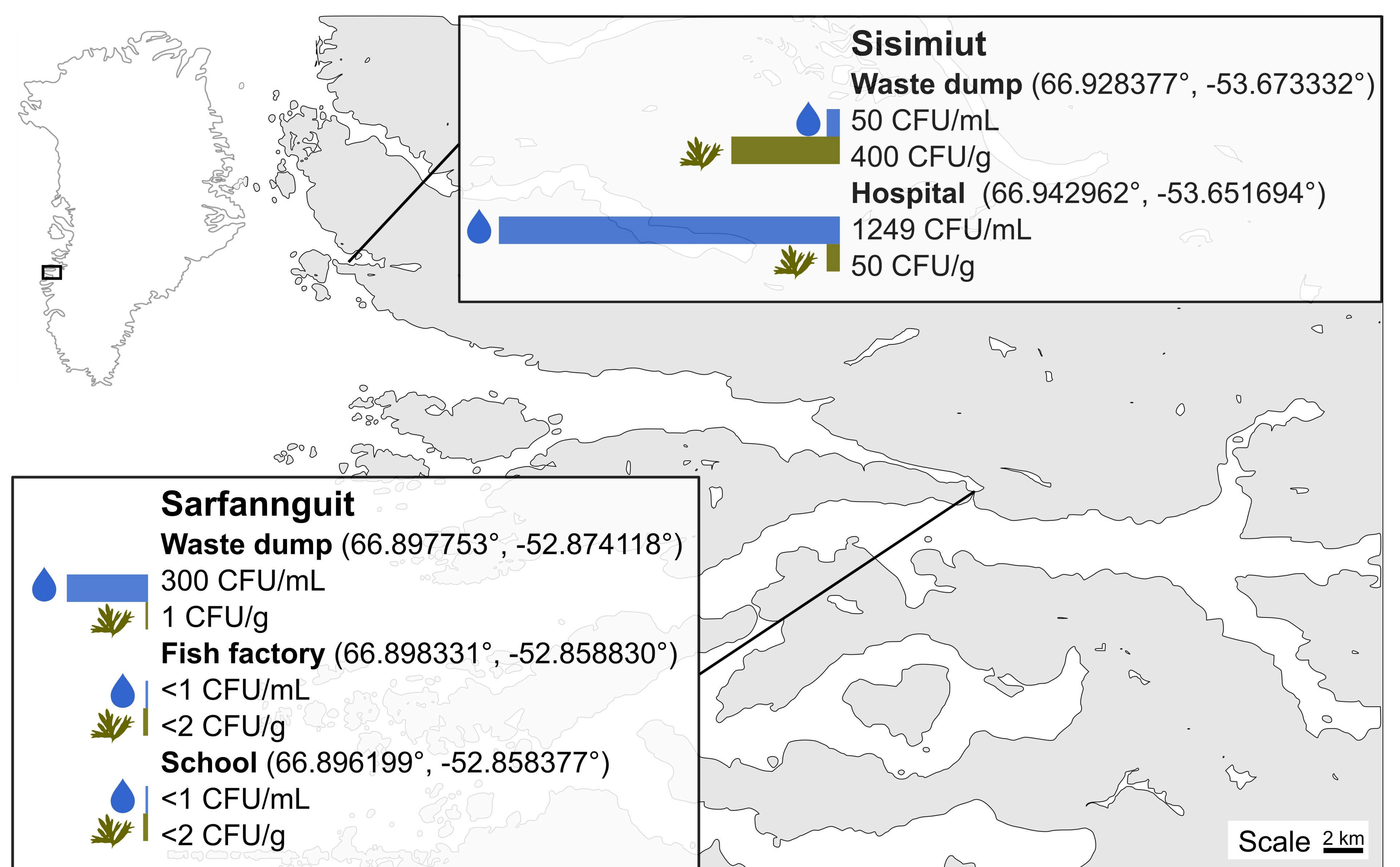
- 1) Does the discharge of human wastewater impact the content of faecal bacteria on seaweed harvested in the proximity of the discharge point?
- 2) Does the concentration of faecal bacteria in water reflect their abundance on seaweeds?

Materials and methods



Results

Results are shown as colony forming units (CFU) of the faecal indicator bacteria *E. coli* in relation to sample volume respectively weight.



Sarfannguit

114 (2017)¹
12 (2017)²

Sisimiut

5483 (2017)¹
1024 (2015)¹

Sources: 1) www.stat.gl Grønlands statistik, 2) Personal estimate K. J. Kreissig

Conclusions and outlook

- 1) Areas close to waste dumps receiving municipal waste, including black water, are not suitable for seaweed harvesting due to the pollution from human waste as indicated by the presence of faecal bacteria.
- 2) The concentration of faecal bacteria in water is not an accurate predictor for the abundance on seaweed.

Harvesting from the coast at small settlements such as Sarfannguit is possible without problems from faecal contamination.

It is not possible to predict seaweed pathogen load from a water sample alone, the hydrogeography needs to be taken into account, too.

Further studies will be carried out, analysing DNA extracted from the same samples as used for this incubation.

Acknowledgements

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