

# Birds and Debris

Dr Neil A. James  
Neil.James@uhi.ac.uk

Environmental Research Institute, University of the Highlands and Islands, Scotland

**Marine Plastic Waste In Greenland**

**Thursday 25<sup>th</sup> March 2021**



**BLUE CIRCULAR  
ECONOMY**

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**Northern Periphery and  
Arctic Programme**  
2014–2020



**EUROPEAN UNION**

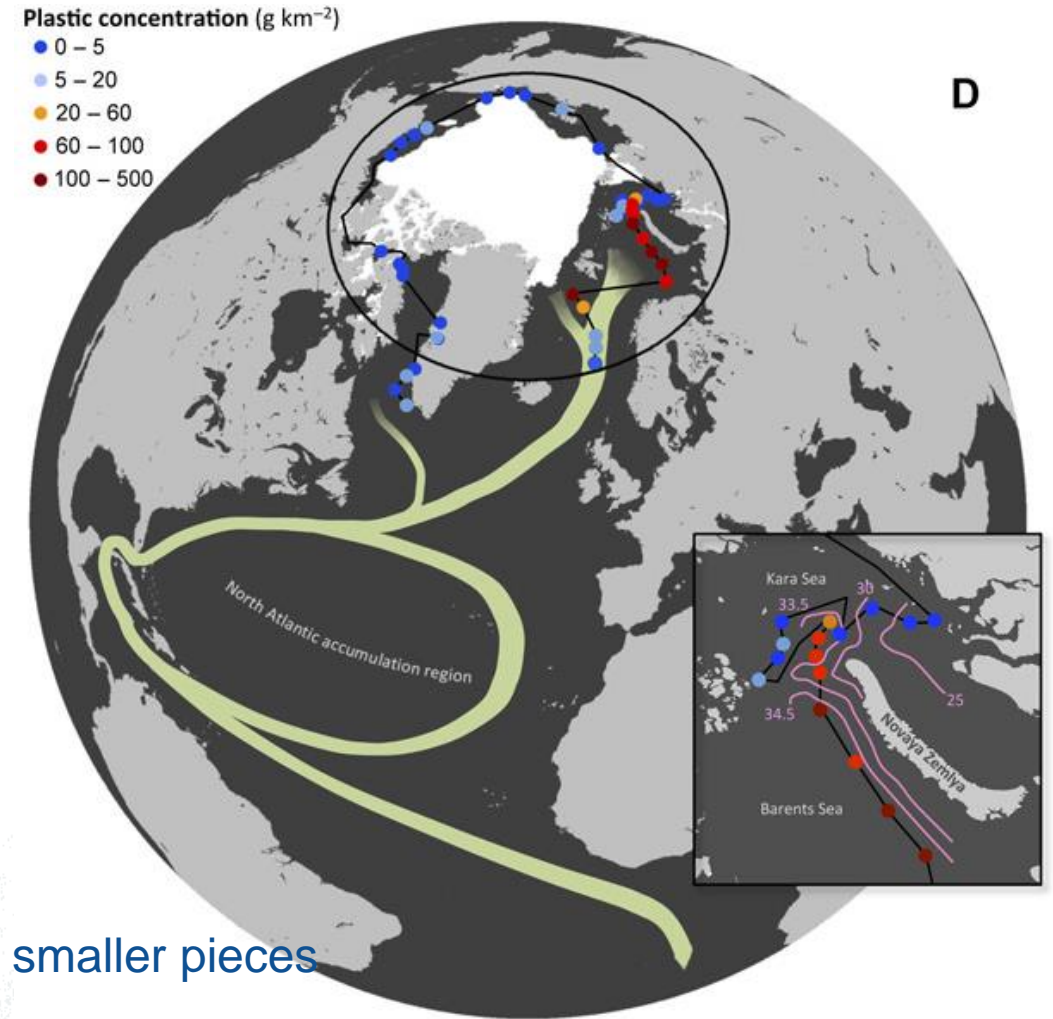
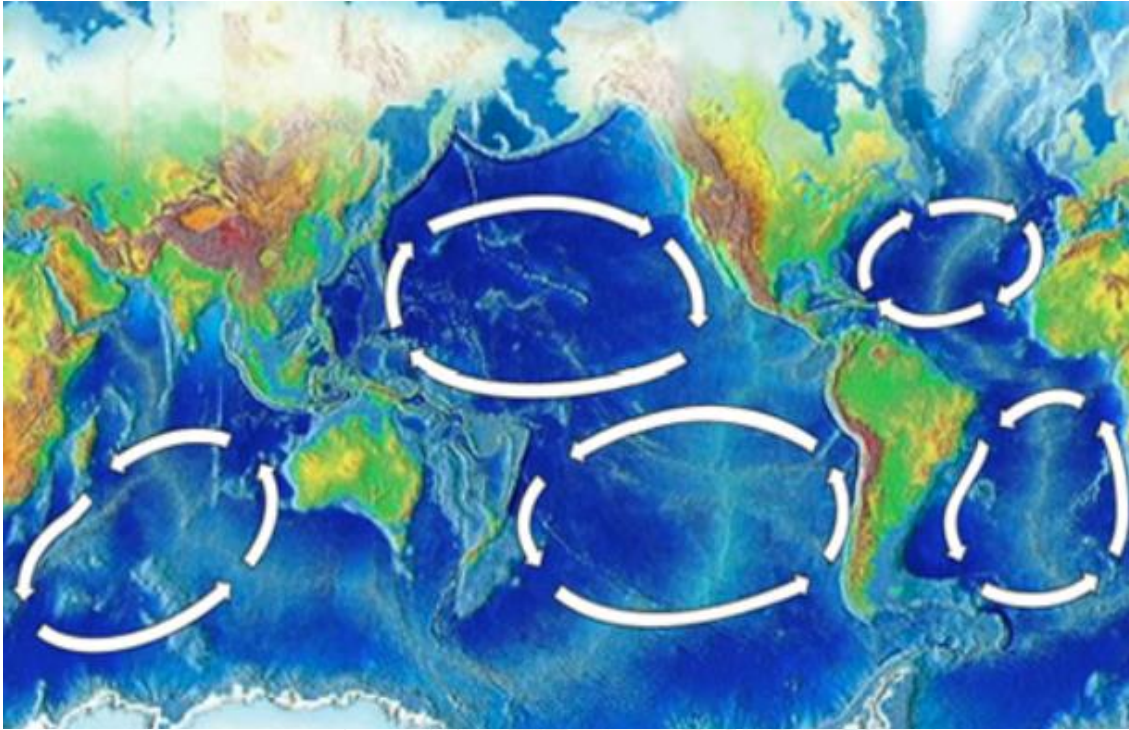
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# Plastics in the environment

- 370 million tonnes produced globally (2019)
- Estimated 19 - 23 million tons plastics enters aquatic ecosystems each year (Borrelle et al., 2020) (53 million tons by 2030)
- At least 5.25 trillion pieces of plastics currently in the oceans (Eriksen et al. 2014)
- One tonne plastics for every three tonnes of finfish by 2025
- 4 g plastics per person per enters the sea (5 g Greenland) (Jambeck et al. 2015)



# Plastics in the sea across the globe



Barents Observer 2013

- Plastics do not biodegrade but can break down into smaller pieces
- Microplastics (pieces  $< 5\text{mm}$ ) can be consumed by more species

# Birds and plastics



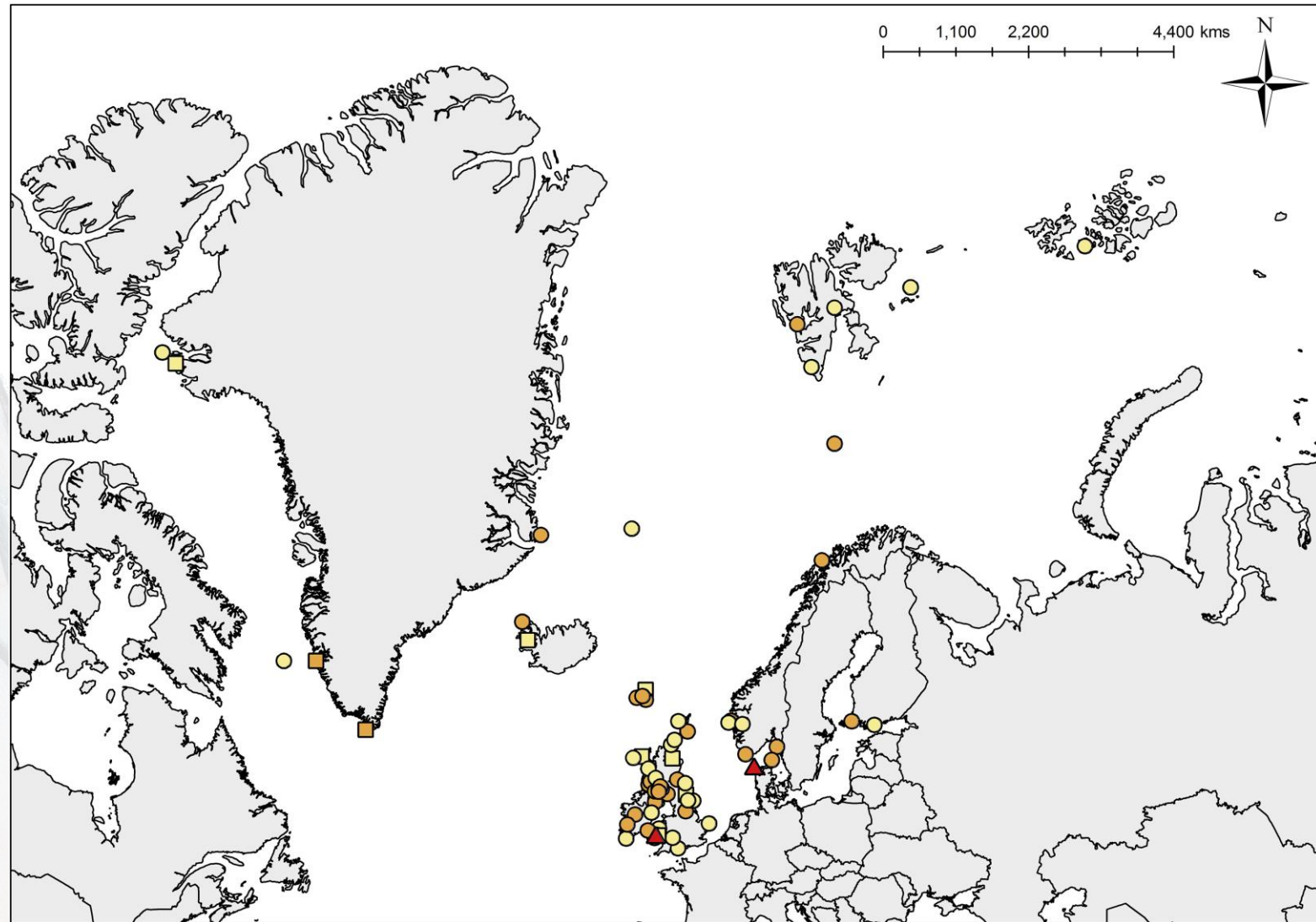
Over 56% of seabird species worldwide have been affected by plastic pollution



- First record of plastic in seabird gut in 1960
- Northern fulmar - 95% individuals sampled had plastic in stomach
- Potential transfer of micropollutants

# Seabirds & marine plastic debris in the north

- Completed a synthesis of information plastic ingestion & nest incorporation by seabirds in the northeastern Atlantic and Arctic region.
- Only three published studies on nest incorporation (Northern Gannet, *Morus bassanus*, & Black-legged Kittiwake (*Rissa tridactyla*))



Spatial distribution of documented seabird interactions with marine plastic in the northeastern Atlantic. The red triangles show nest incorporation. Squares show negative results for plastic ingestion and circles show the positive incidence of plastic ingestion. For plastic ingestion, dark orange shapes refer to studies that collected samples since 2000 and light orange prior to 2000.

O'Hanlon *et al.* 2017

<https://doi.org/10.1016/j.envpol.2017.08.101>

# Seabirds & marine plastic debris in Greenland



Miteq Sioraki, King Eider, *Somateria spectabilis*

(1 study, no ingestion found)



Appaliarsuk, Little Auk, *Alle alle*  
(4 studies, 0 – 100% ingestion)



Appa, Thick-billed murre, *Uria lomvia*

(3 studies, 0 - 6% ingestion)



O'Hanlon *et al.* 2017

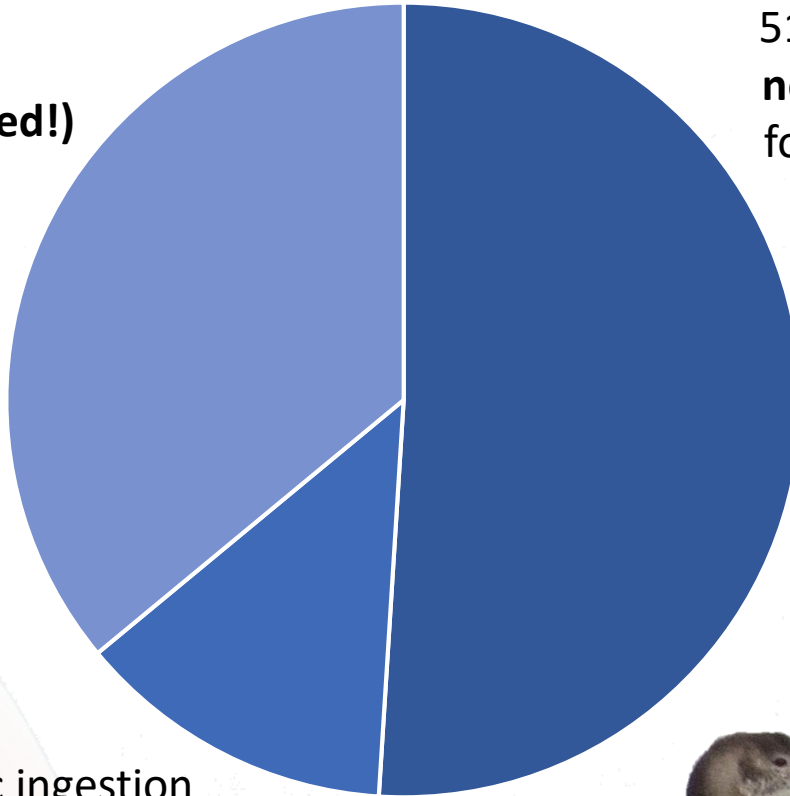
<https://doi.org/10.1016/j.envpol.2017.08.101>

# Seabirds & marine plastic debris in the north

Plastic ingestion was recorded in  
36% of species  
**(or 74% of those examined!)**



No evidence of plastic ingestion  
in 13% of species



51% of species have  
**not been examined**  
for plastic ingestion



**61 species**

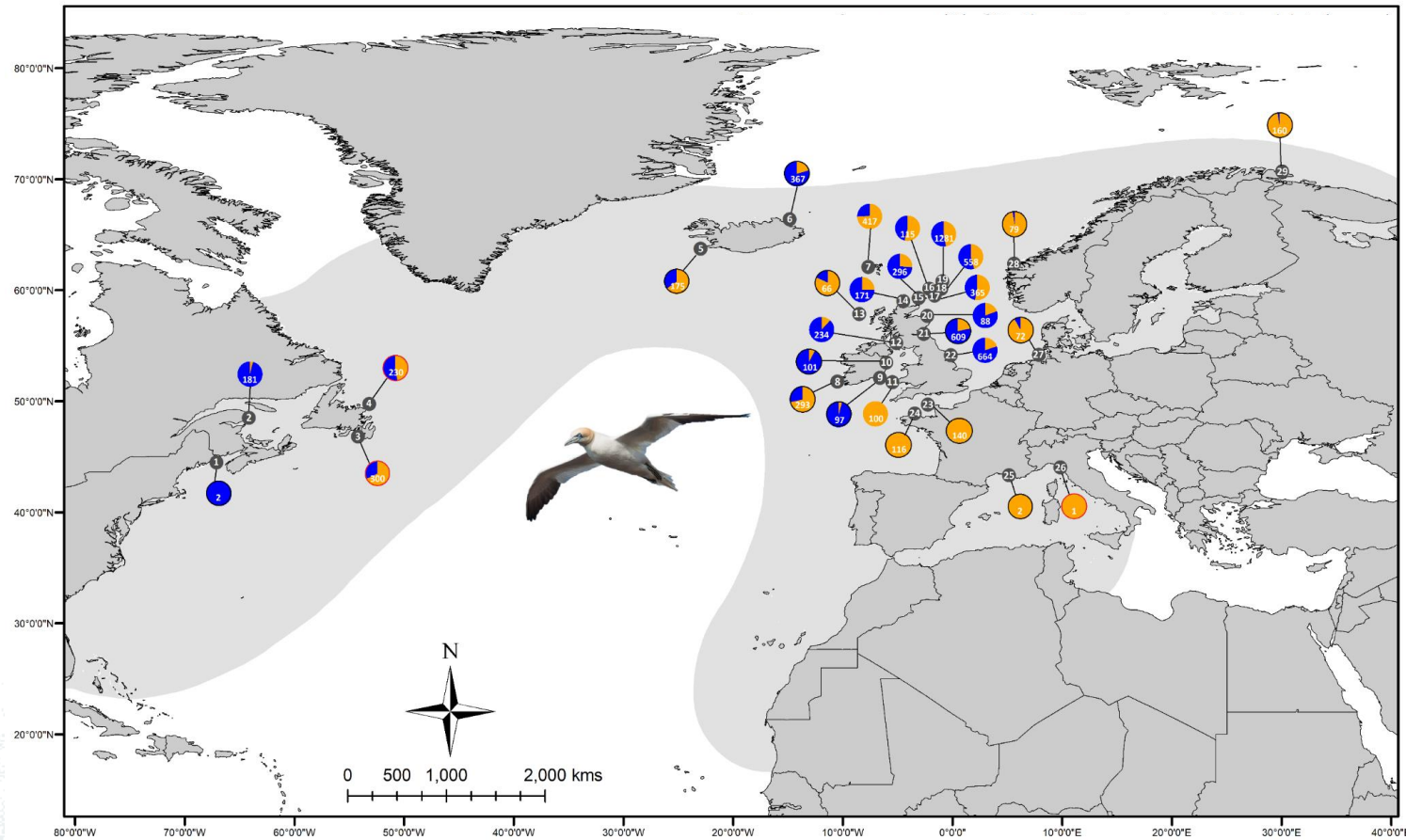
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# Birds & plastics debris in the north

Orange = nests containing debris. Blue = clean nests

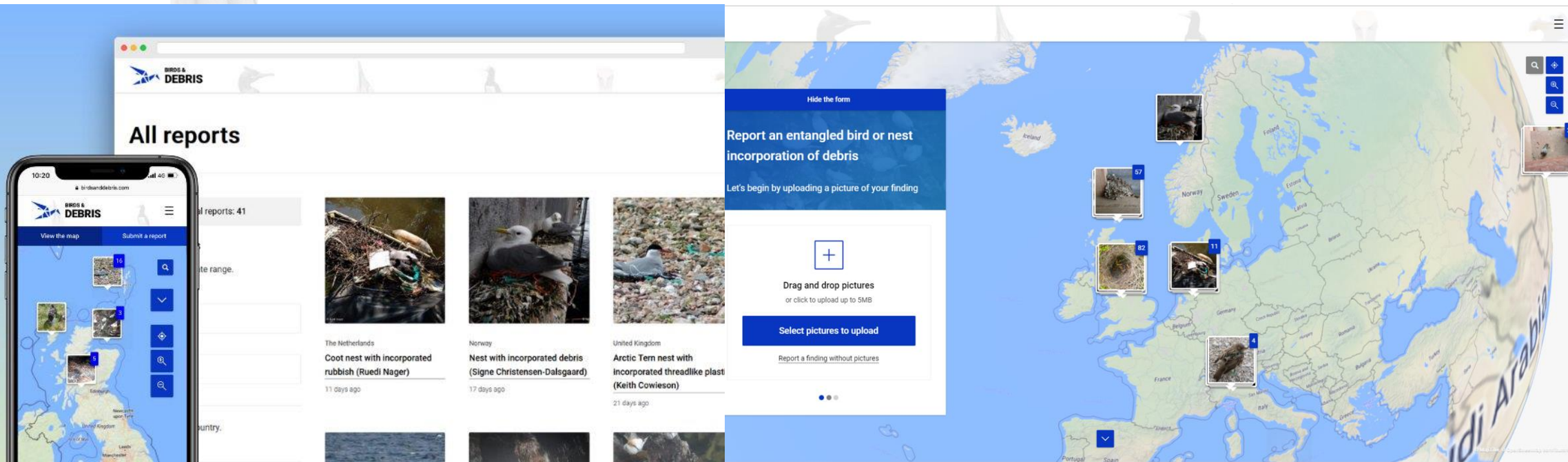


O'Hanlon *et al.* 2019

- Nest incorporation of debris by Northern Gannets occurred in 28 of 29 colonies.
- Of 7280 Northern Gannet nests examined, 46% contained debris.
- Debris was largely threadlike plastics thought to originate from fishing activities.



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Recently reported

# WE NEED YOUR HELP!

# Thank you!



**BIRDS &  
DEBRIS**

**Dr Neil James**  
Environmental Research Institute  
North Highland College UHI  
[Neil.James@uhi.ac.uk](mailto:Neil.James@uhi.ac.uk)

