

Fisheries as a source of beach litter in the Arctic: causes and solutions

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Introduction



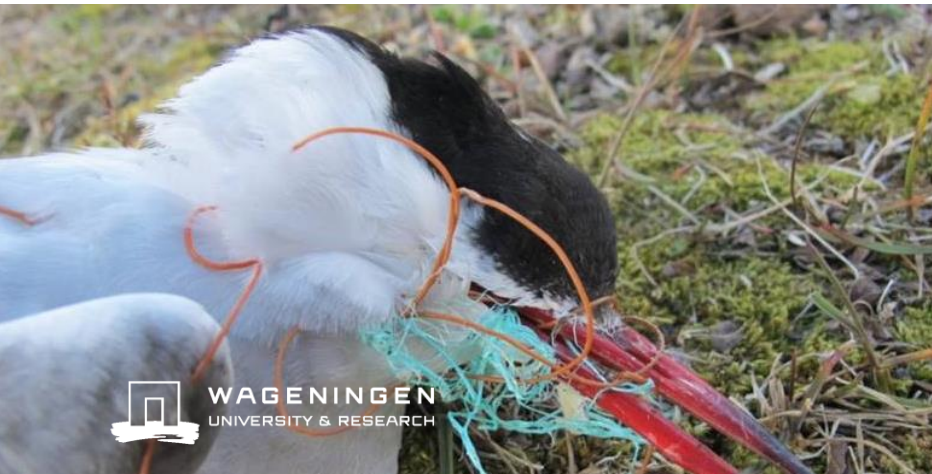
Wouter-Jan Strietman, MSc:

- Wageningen Social & Economic Research (part of Wageningen University & Research), the Netherlands
- Marine litter, fisheries and marine governance



A photograph of a rocky beach in an Arctic region, heavily littered with dark seaweed and various pieces of plastic debris, including green and blue fishing nets. A man in a grey sweater and blue jeans is bent over on the right side of the frame, collecting debris into a yellow bag. The background shows a calm body of water and rolling hills under a cloudy sky.

On Arctic beaches,
around 1 out of every 3 items is
fisheries related



Six rescued off Cork coast after ghost net wrapped around boat's propeller

Ghost nets are a major environmental hazard to both marine and other wildlife, the RNLI said.



The RNLI lifeboat, The Douglas Aikman Smith, was launched and the crew were able to locate the stricken vessel

THU, 16 FEB, 2023 - 15:07
MICHELLE MCGLYNN

Six people have been rescued off the coast of Cork after their fishing boat suffered propeller failure.



Photo: Governors

Trawlers in trouble - got a net in the propeller

A 20 meter long trawler with six people on trawl net in the propeller in Isfjorden.

Cruise ship's propeller reportedly gets stuck in fishing net, prompting San Diego stay



A cruise ship in need of repair will be in San Diego for an additional day after passengers say it received some sort of damage to its propeller.

By: Zac Self

Posted at 5:57 PM, Apr 29, 2019 and last updated 4:49 AM, Apr 30, 2019

SAN DIEGO (KGTV) -- A cruise ship in need of repair will be in San Diego for an additional day after passengers say it received some sort of damage to its propeller.



Nominate a Leader Today!

Fishing boat stranded at sea after propeller is snagged by drifting trawler nets off Newquay

The fishing boat was stranded at sea four miles north west of Newquay

SHARE     COMMENTS

By [Olivier Vergnault](#) Senior Reporter
09:50, 11 JAN 2018

NEWS

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Our mission

To create a deeper understanding of the sources and causes of marine litter on the coastline of the Arctic, in order to more effectively address the issue





100 metre area

OSPAR Marine Litter Monitoring Survey

OSPAR ID	Unep ID	Items	Total
29		Cryter trays found from oyster cultures	N/A
30		Plastic sheeting from mussel culture (Tandans)	N/A
31		Rope (diameter more than 1 cm)	+
32		String and cord (diameter less than 1 cm)	+
115		Nets and pieces of net < 50 cm	+
116		Nets and pieces of net > 50 cm	+
33		Tangled net/cord/rope and string	+
34		Fish bones	
35		Fishing line (angling)	
36		Plastic tubes	
37		Floats	
38		Buckets	
39		Straps	
40		...	
41		...	
42		...	
43		...	
44		...	
45		...	
117		...	
46		Plastic/polypropylene	
47		Plastic/rope	
48		Plastic/polyethylene pieces	
		Other plastic/polypropylene	
		Balloons, including plastic	
		Boats	
		Tires and belts	
		Other rubber pieces	

#	Top-10 of items (Jan Mayen)	Share
1	All under	60%
2	Nets and pieces of net	7%
3	Caps/lids	6%
4	Strapping band	5%
5	String and cho	3%
6	Industrial pack /sheeting	3%
7	Floats/buoys	2%
8	Plastic bottles /containers	2%
9	Plastic bags	2%
10	Cotton bud sticks	1%
	Other items	9%

QUAKER
MODEL SHIPS No 2

Be the first among your friends to collect this exciting series of 10 Model Ships. They're fun to paint, too. Do use oil-based paints. Pictures of five real-life ships are given below as a colour guide.

QUEEN MARY. Cunard Line. Sails between Southampton, Cherbourg and New York. Tonnage: 81,237, 1,070 feet in length, 118 feet in width. Carries 1,970 passengers. Held the "Blue Riband" of the world of United States.

MAURETANIA. Belongs to the Cunard Line. Tonnage: 35,677, 773 ft. in length by 89 ft. She was built by Cammell Laird in 1939. Carries 1,150 passengers. Sails between Southampton and New York.

DE WOU AMSTERDAM. Biggest Dutch Liner. Tonnage: 36,640. Flag ship of the Holland-America Line. Route: Rotterdam-Havre-Southampton-New York. 714 ft. long x 88 ft. Carries 1,200. Service speed 21 1/2 knots.

EDINBURGH CASTLE. Belongs to Union Castle Line. Tonnage: 28,705. 718 ft. x 84 ft. Built by Harland & Wolff 1946. Carries 750. Sails from Southampton to Madiers or to Las Palmas and South African ports.

ARCADIA. Belongs to the P. & O. Company. Tonnage: 29,734. 721 ft. long x 90 ft. Built by John Brown in 1954. Carries 1,400 passengers. Sails from London via the Suez Canal to Colombo (Ceylon) and Australia.

SUGAR PUFF WILL

Ahoy! a free toy!

FREE MODEL OF QUAKER'S BUILD IN SUGAR PUFFS

FOR THE ENTIRETY OF EVERY SACHET OF SUGAR PUFFS (except those Sugar Puffs which are a special gift to you) you will receive a free model of a famous ship. There is the Queen Mary, the De Wou Amsterdam, the Edinburgh Castle and other models to collect. And each one free! Just think! You can easily collect a whole fleet of ships. Reward Mother for giving you Sugar Puffs today!

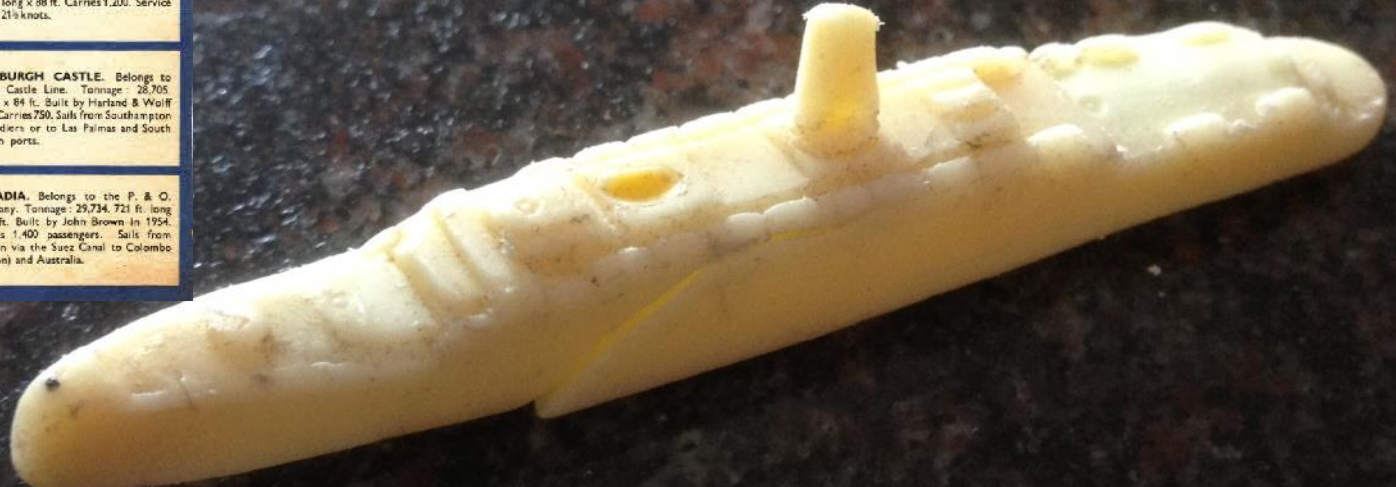
Sugar Puffs

THERE'S ALWAYS A FREE TOY IN SUGAR PUFFS

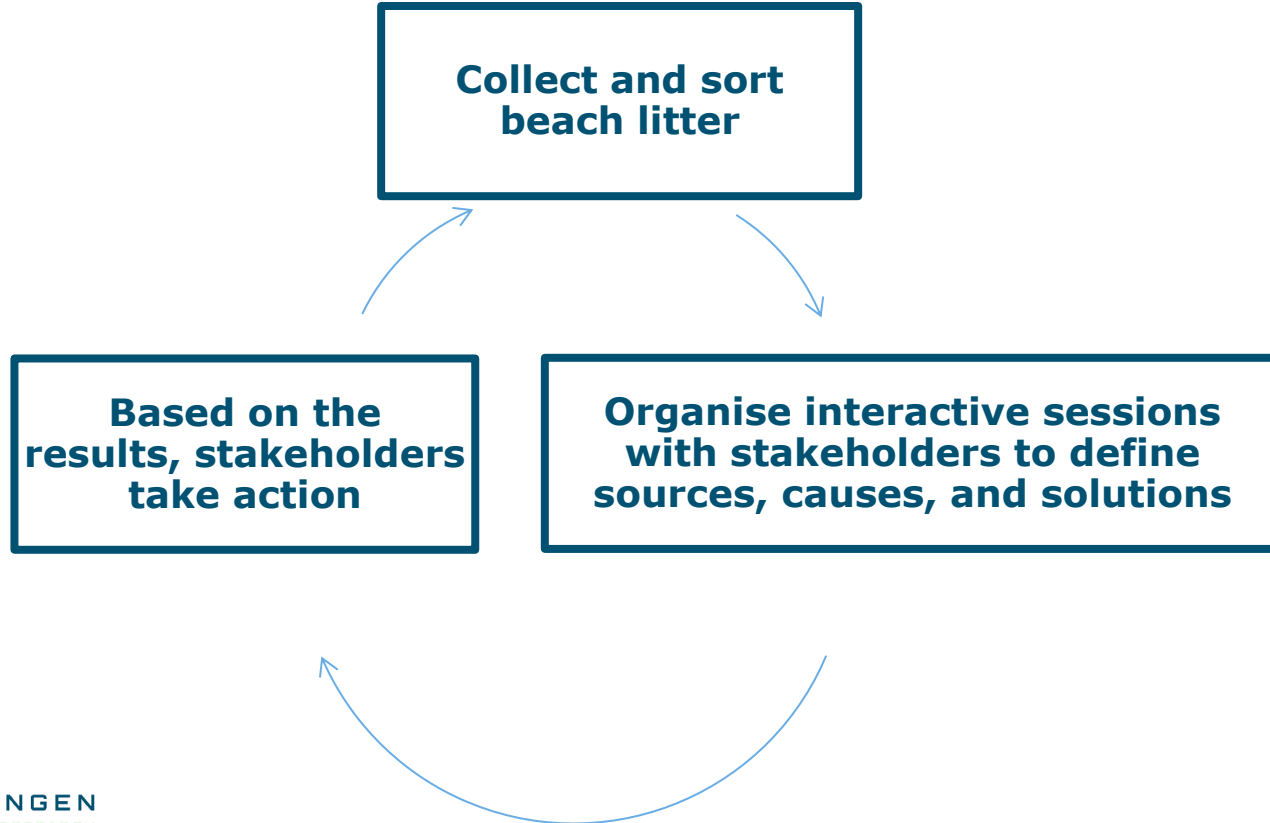
TO HELP YOU CHOOSE THE CORRECT MODEL SHIP TO COLLECT

- Queen Mary
- De Wou Amsterdam
- Edinburgh Castle
- Arcadia
- Mauretania
- De Wou Amsterdam
- Edinburgh Castle
- Mauretania
- Queen Mary
- De Wou Amsterdam
- Edinburgh Castle
- Mauretania
- Queen Mary

Issued in
the UK in
1958



Our approach



Study areas and collaboration partners since 2017



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NAALAKKERSUISUT
GOVERNMENT OF GREENLAND

Circumpolar Conservation Union

Maktisjezja van Dutenlaadse Zaken

Haskolasetur Vestfjarda
University Centre of the Westfjords

OCEANWIDE

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Jan Mayen

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Protecting and conserving the North-East Atlantic and its resources

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Ministerie van Natuur, Milieu en Landschap

DALVIQVIST ENVIRONMENTAL PROTECTION

Step 1: collecting litter



Step 2: involving fisheries experts, policymakers, researchers, NGOs, citizens and other stakeholders in determining sources, causes, and solutions



For each litter category, we conduct a detailed analysis and aim to gather as much information as possible about the items



Was it accidentally lost or cut out during repairs?

Cut or tear marks

What is the source and origin of the net?

Mesh size & material

Key finding 1: all fishing net litter consists of pieces (none were intact nets)

Most pieces are small



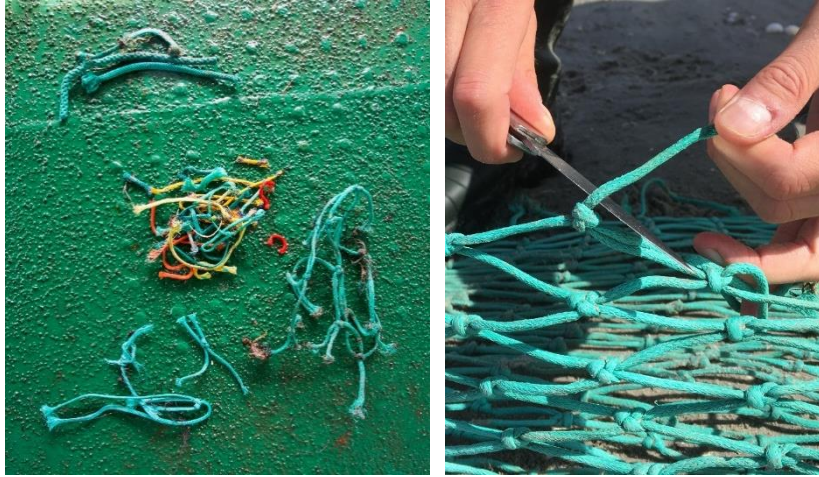
Photo: WJ Strietman

Of the larger pieces, most are less than 5m² in size



Photo: WJ Strietman

Key finding 2: Most of such pieces were net cuttings, produced on deck



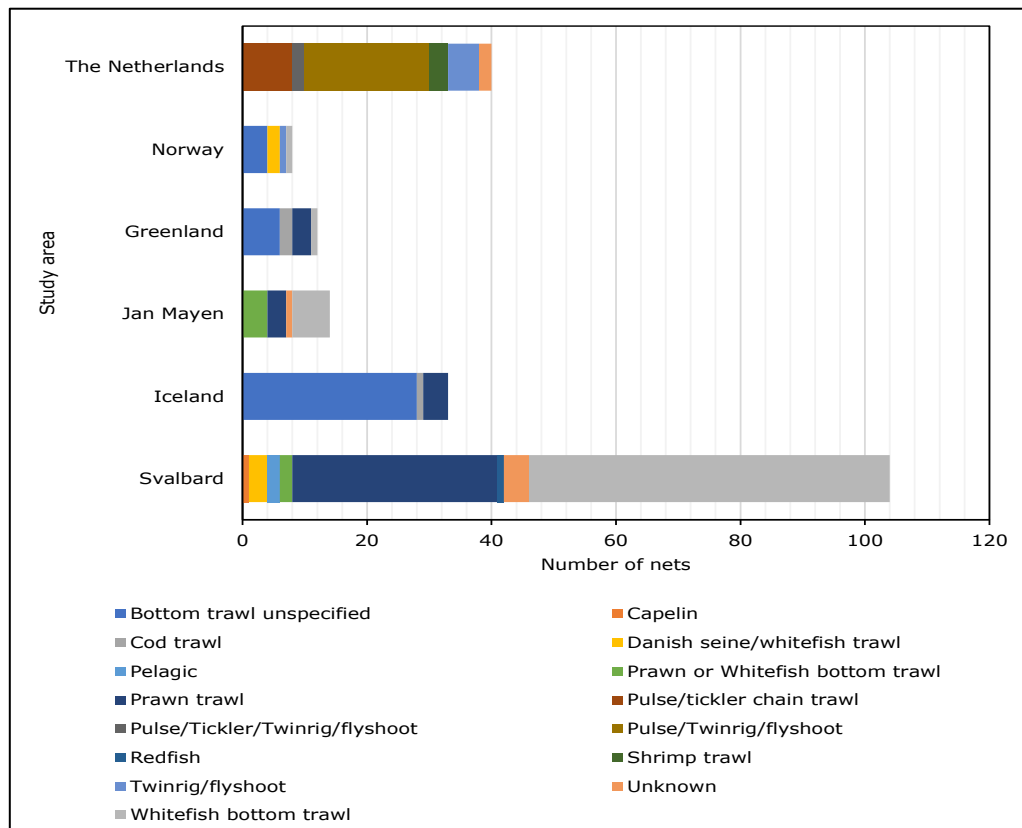
All of the small bits were off-cuts from loose mesh ends, a by-product of net repair




-> Of the larger net pieces, 80% were cut out during repairs, while only 20% were accidentally lost.

-> All study areas showed similar results, also outside of the Arctic

Key finding 3: Most nets are bottom trawl nets, used in nearby areas




Why is trawl gear more likely to wash up on the coast compared to set gear?



Gillnets, longlines and other set gear typically contain parts that tend to sink to the seabed after being lost or discarded

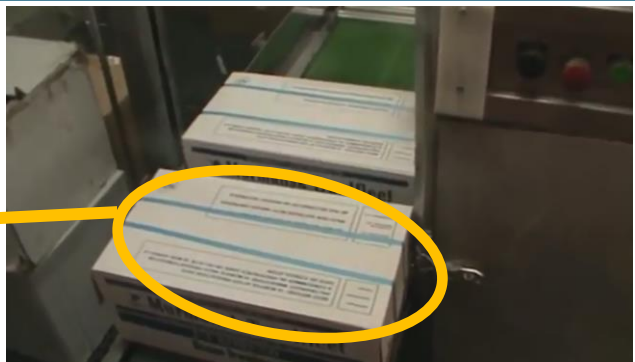
Photo: Carl Johnson



Trawl nets usually contain floating parts, which may end up on the shoreline after being accidentally lost or discarded

Photo: Alamy

Key finding 4: other types waste from fishing vessels are also a common feature of the Arctic coastline



Source: <https://www.youtube.com/watch?v=WC3CD4dmSdo>

Based on our research, we conclude that most fisheries litter on the Arctic coastline is caused by inadequate waste management practices on board (bottom) trawl vessels



Improving waste management practices

On board



- Adequate collection and storage of all waste produced on deck, specifically smaller bits and pieces
- Adequate collection and storage of all other types of waste produced below deck

In ports



Photo: Matthew Lloyd/Bloomberg/Getty Images

- Offering practical, affordable delivery options for fishing vessels to dispose of their stored waste

Fishing vessels across the Arctic are increasingly adopting good practices, but further efforts from the industry, ports, and governments are required to fully resolve this issue



Reflecting on the results, in relation to marking and reporting of lost gear

1. Marking or tagging of nets

- Since trawl nets are large and cuttings are usually small, it would be challenging to ensure that each part of the net that could potentially be cut is tagged or marked.

2. Reporting of (parts of) lost gear

- Most nets (along with ropes and other pieces of gear) found on the Arctic coastline are discarded and thus not accidentally lost (and thus not reported);
- Most accidentally lost pieces are small and likely also not to be reported if lost.
- Intact sets of lost gear are likely to be reported; however, such gear was not identified as a source of litter along the Arctic coastline (though such gear may lie on the seabed)

-> Such measures seem inadequate to prevent fishing gear litter that ends up on the Arctic coastline, but are adequate to prevent seabed litter caused by set gear

Policy recommendations

1. In the evaluation of the IMO Strategy on Marine Litter, consider including additional actions on improving waste management practices on deck & below deck & align with work on this topic by the Arctic Council, OSPAR, and others;
2. Include the topic of waste management practices on deck into education and awareness campaigns (e.g. by applying IMO model course 1.38 on Marine Environmental Awareness);
3. Strengthen efforts to implement the Cape Town Agreement to enhance fishing safety



Photo: WJ Strietman



Photo: ProSea

INF paper and submission on this topic by the Netherlands & Norway



E

SUB-COMMITTEE ON POLLUTION
PREVENTION AND RESPONSE
10th session
Agenda item 13

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FOLLOW-UP WORK EMANATING FROM THE ACTION PLAN TO ADDRESS MARINE PLASTIC LITTER FROM SHIPS

Comments on document PPR10/13

Submitted by The Netherlands

SUMMARY

Executive summary: This document is submitted as a response to the work of the Correspondence Group on Marine Plastic Litter from Ships under Terms of Reference number 2 described in the report of the Correspondence Group contained in document PPR10/13 and proposes additional discussions and research into the sources and causes of marine plastic litter, specifically for (floating) fishing net litter.



E

MARINE ENVIRONMENT PROTECTION
COMMITTEE
80th session
Agenda item 8

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FOLLOW-UP WORK EMANATING FROM THE ACTION PLAN TO ADDRESS MARINE PLASTIC LITTER FROM SHIPS

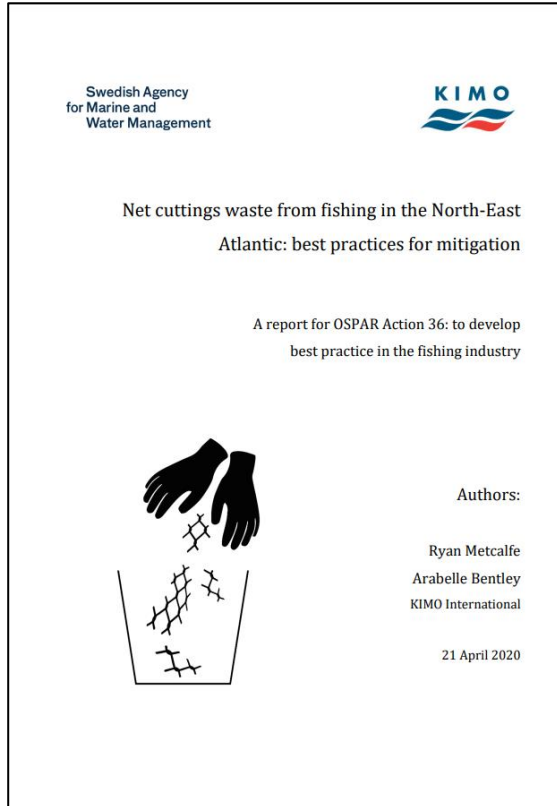
Measures to reduce the loss of fishing gear and parts thereof

Submitted by Norway

SUMMARY

Executive summary: This document provides information on reasons for loss of fishing gear and proposes additional active measures to reduce such losses and facilitate discussions on developing new guidance for management of fishing gear on board fishing vessels.

Relevant recent OSPAR reports by WUR & KIMO



Take home message

1. Most fishing gear litter on Arctic beaches can be prevented
2. Improved waste management on deck/board of (bottom) trawl vessels is key
3. This will not only improve marine environmental conditions, but also improve safety of navigation in the Arctic



Thank you for your attention



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