

Arctic Marine Litter Project

Knowing the sources to work on solutions

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UNIVERSITY & RESEARCH



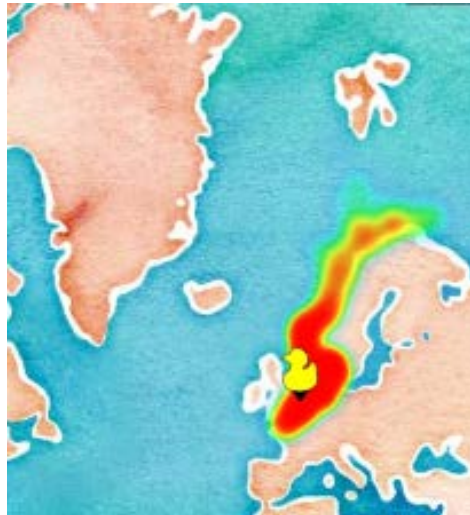


Plastic litter can travel to the Arctic within 3 years

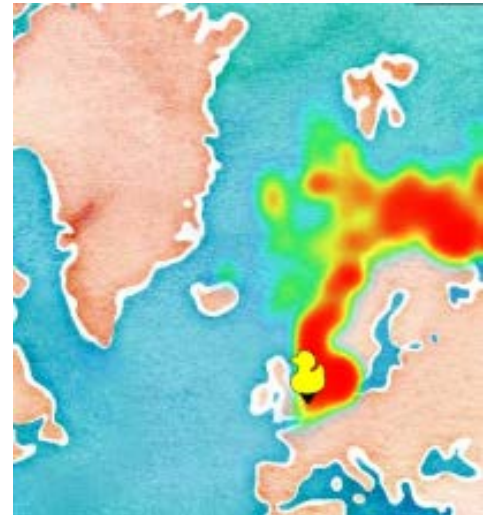
4 months



1 year



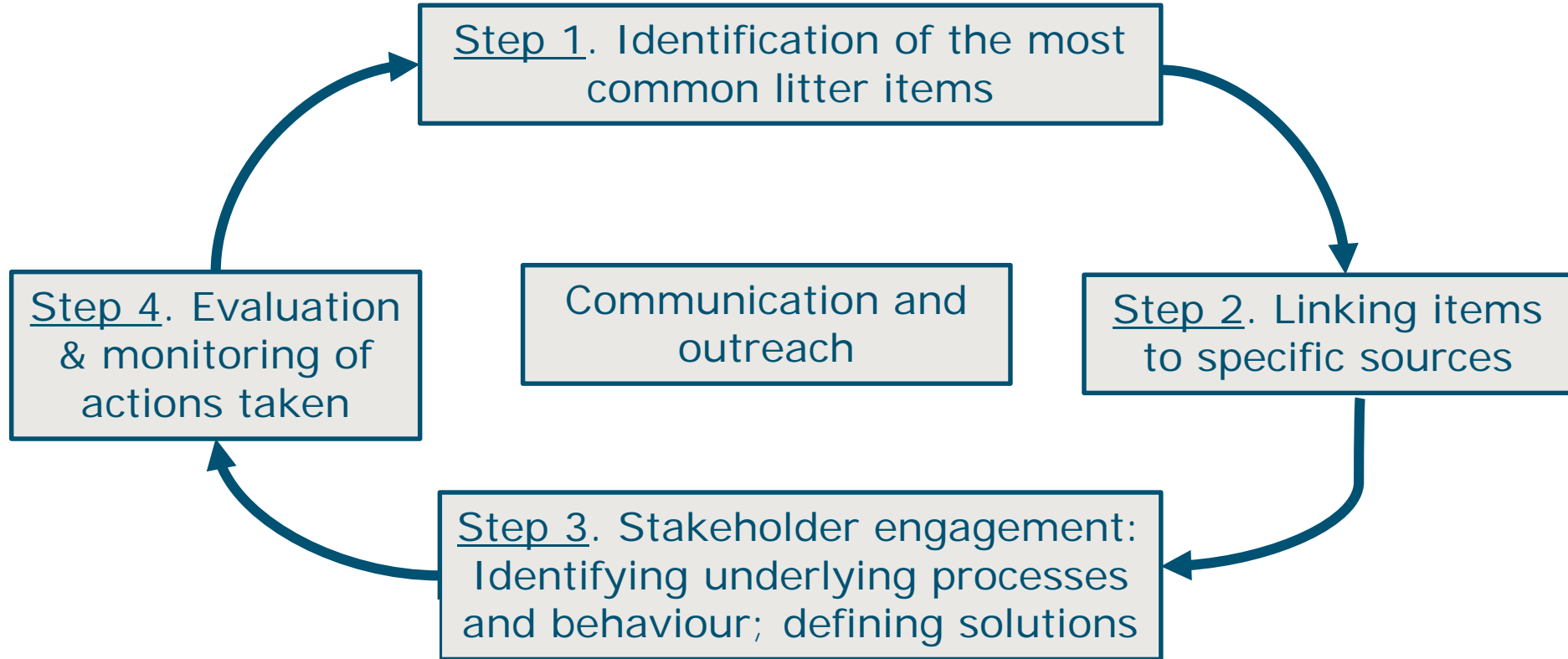
2 years, 4 months



How can we stop the influx of litter?



The Arctic Marine Litter project approach: focus on prevention



A collective effort

Project partners:

- Wageningen University & Research, SALT, Norwegian Polar Institute, University of Tromsø

Collaborating with:

- Oceanwide Expeditions, Prosjekt Isfjorden, Syssemmannen, Jan Mayen station, Avfallsmottaket Longyearbyen, University of the Westfjords & a lot of volunteers!

Funding by:

- Dutch Ministry of Foreign Affairs & Infrastructure and the Environment, Svalbard Environmental Fund, Dolfinarium



“Knowing the sources to work on solutions”

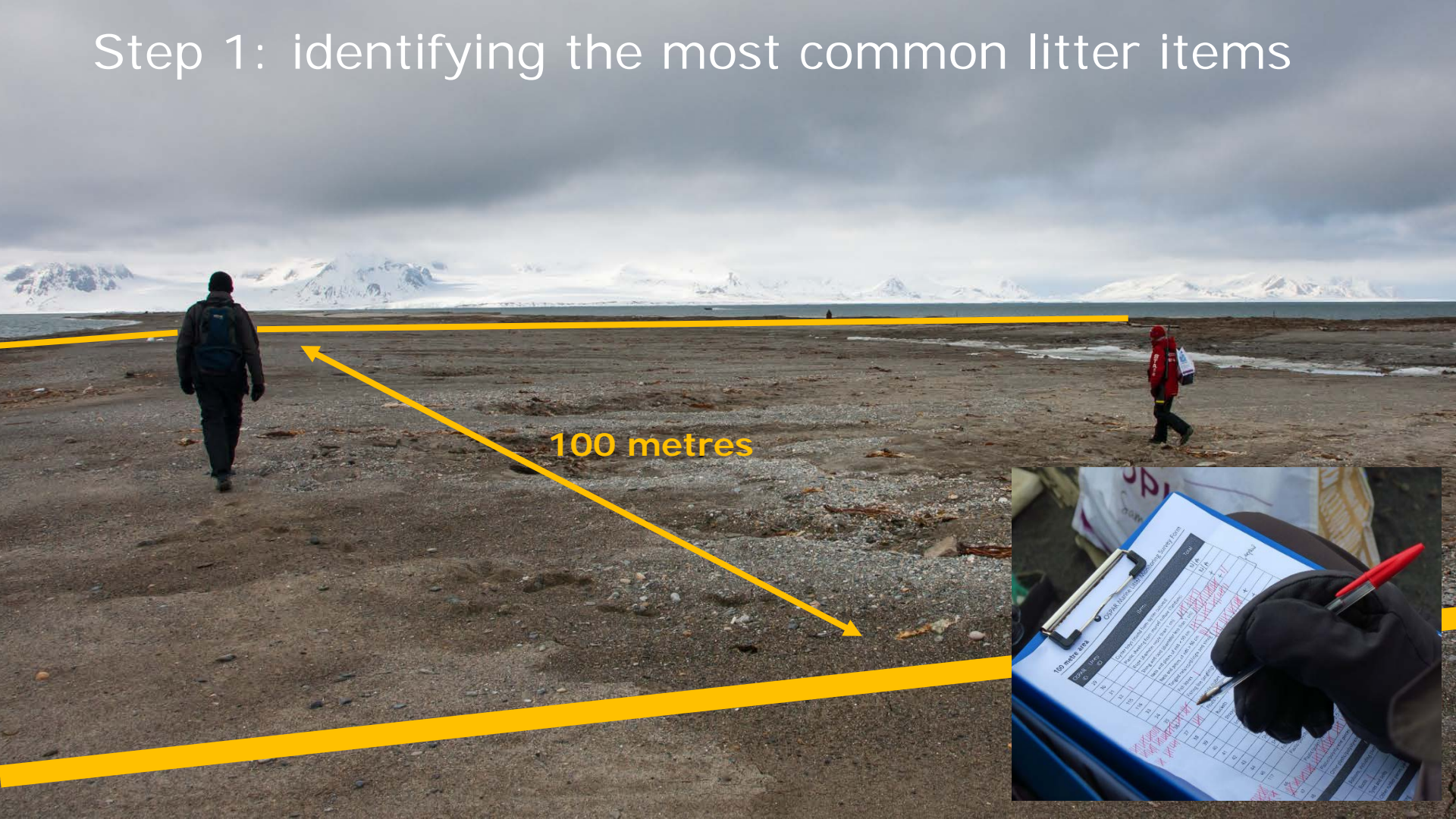
Project aims:

1. Deeper knowledge into the main litter items in the European Arctic: their origin, stakeholders, behaviour and underlying processes;
2. Input and support for Arctic policy initiatives (e.g. PAME/OSPAR);
3. Strengthening existing fisheries litter initiatives or initiating new ones;
4. Communications and outreach

Gaining insight into beach litter using the OSPAR method

- In the NE Atlantic, OSPAR data is the most detailed data available
 - OSPAR methodology effective to identify trends in the main categories
 - OSPAR data does, however, not distinguish between:
 - Specific sources (e.g. type of fisheries)
 - 'State of the litter item' (e.g. worn, cut, origin)
 - Underlying processes and behaviour why litter ended up in sea
- > **Our approach:** additional analysis of the main litter categories

Step 1: identifying the most common litter items





- Focus: Jan Mayen and Svalbard
- Litter collected at 15x 100m stretches:
- During 3 Oceanwide cruises & by Prosjekt Isfjorden
- Analysis carried out by project staff
- 5.676 items analysed and categorised

Main litter categories based on 5767 items analysed in 2017



#	Litter type	Share
1	All unidentifiable pieces	60%
2	Nets and pieces of nets	7%
3	Caps/lids	6%
4	Strapping band	5%
5	String and chord	3%
6	Industrial packaging/sheeting	3%
7	Floats/buoys	2%
8	Plastic bottles and containers	2%
9	Plastic bags	2%
10	Cotton bud sticks	1%
	Other items	9%

Nets and pieces of net (7%)



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All cleanup litter 2017: weight of fishing nets

Fishing nets

7,000 kilos, 35%



Other items

13,000 kilos, 65%



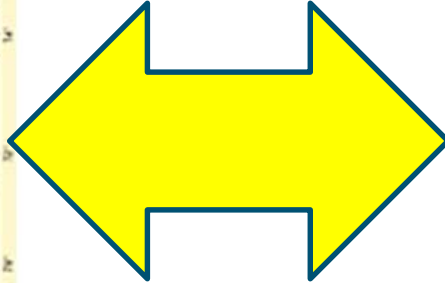
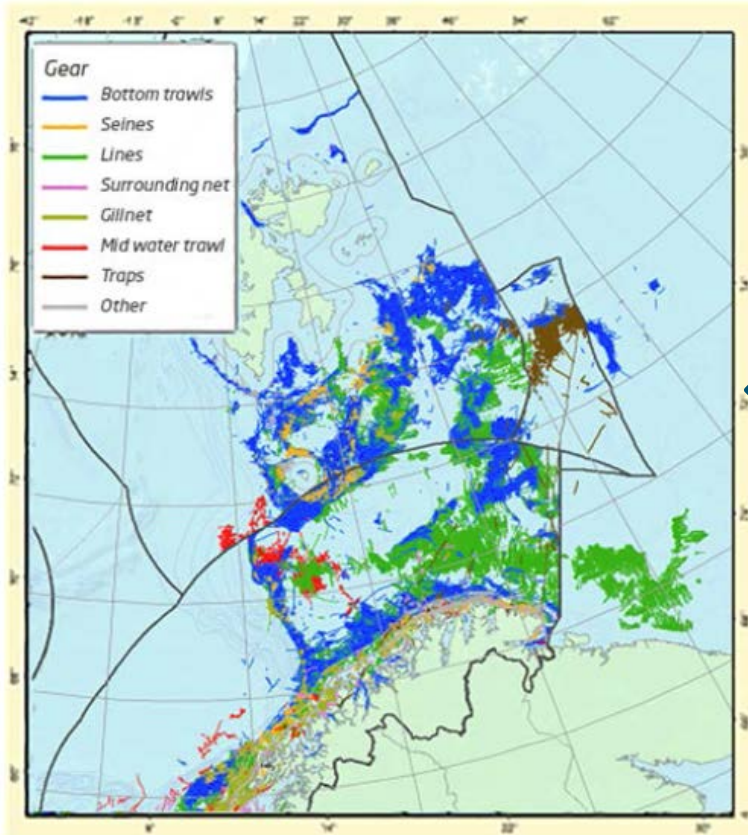
Fishing net analysis: first results



43 nets (2000 kilos) analysed:

- Average size: 25m²
- Average age: 0-5 years
- Most mesh sizes: 120 & 150mm
- None of the nets were full nets, all were parts of nets
- Almost all parts have been cut out of full nets probably due to replacement with new parts
- Intentionally discarded?

Next step: linking net types to specific fisheries



Caps & lids analysis

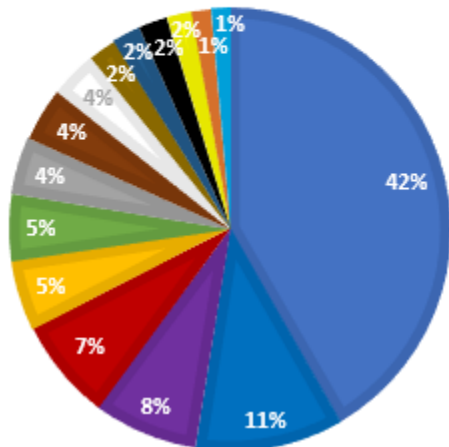


Over 2500 caps collected and analysed:

- Collected at Jan Mayen & Svalbard
- Indicators for the origin of litter
- Identification: type & category
- Similar analysis carried out in The NL
- Tool for education and awareness

Types of caps: first results

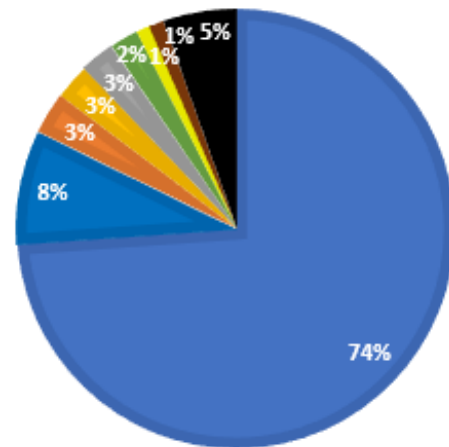
- Drink packaging - PET
- Stopper
- Chemical/detergent
- Unknown
- Medical / sanitary
- Sunscreen/deo/shampoo cosmetics etc.
- Drink packaging - carton
- Jerrycan / pull tab cap
- Food packaging
- Tube
- Lid (no brand)
- Other



Jan Mayen

- Drink packaging - PET
- Chemical/detergent
- Wine/liquor cork

- Drink packaging - carton
- Protective cap
- Unknown
- Food packaging
- Tube
- Other



Svalbard

Distribution countries of caps collected at Svalbard





"Nevalyashka" doll
Issued in the
60s/70s in the
Soviet Union

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-bound 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 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.

AMSTERDAM. Biggest Dutch Liner. Tonnage: 36,840. Flag ship of the Holland-America Line. Route: Rotterdam-Havre-Southampton-New York. 714 ft. long x 98 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 Maderia 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.

Ahoy! a free toy!

FREE MODEL OF FAMOUS SHIP IN SUGAR PUFFS

IT'S GREAT NEWS! A whole lot of fun in a single Sugar Puff. Here's a super giveaway at a Quaker Ship! There's the Queen Mary, the Mauretania, the Amsterdam, the Edinburgh Castle and the Arcadia and some models to color and make your first "ahoy!" You can even call it a whole lot of fun! "Sweet Mother" from Sugar Puffs, Ltd.

SUGAR PUFFS WILL

THERE'S ALWAYS A FREE TOY IN SUGAR PUFFS

Issued in
 the UK in
 1958



8	Food containers incl. fast food containers		
9	Cosmetics (bottles & containers e.g. sun lotion)		
10	shampoo, shower gel, deodorant	1	+
11	Engine oil containers and drums <50 cm		+
12	Engine oil containers and drums > 50 cm		+
13	Jerry cans (square plastic containers with handle)		+
14	Injection gun containers		+
15	Other bottles, containers and drums		+
16	Crates		
7	Car parts		
	Caps/lids		
	Cigarette lighters		
	Pens		
	Combs	7	+
	Chewing gum packets and lolly sticks		+
	Cups & party poppers		+
	Cutlery/trays		+



DFO LOB REPLACEMENT No 569114

Svalbard



Jan Mayen



Canada



United Kingdom



Actions planned for 2018-2020 (1)

Step 3: Engagement with key stakeholders

Workshops: Longyearbyen 2018 & Arctic Frontiers conference 2019:

- Defining the exact sources
- Identifying reasons why litter items end up in the sea
- Identifying possible solutions
- Supporting stakeholders in taking action



Actions planned for 2018-2020 (2)

- Further engagement with OSPAR, PAME, ICES, EU, and other projects
- Further collaboration with partners in Norway, Iceland, Russia and possibly Greenland
- Chemical analysis of unidentified pieces of plastic to define the category involved (e.g. food/jerrycans/etc)
- Communication and awareness (newspapers, TV/Radio, conferences)
- Step 4. Evaluation & monitoring of actions taken

The future is here...



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