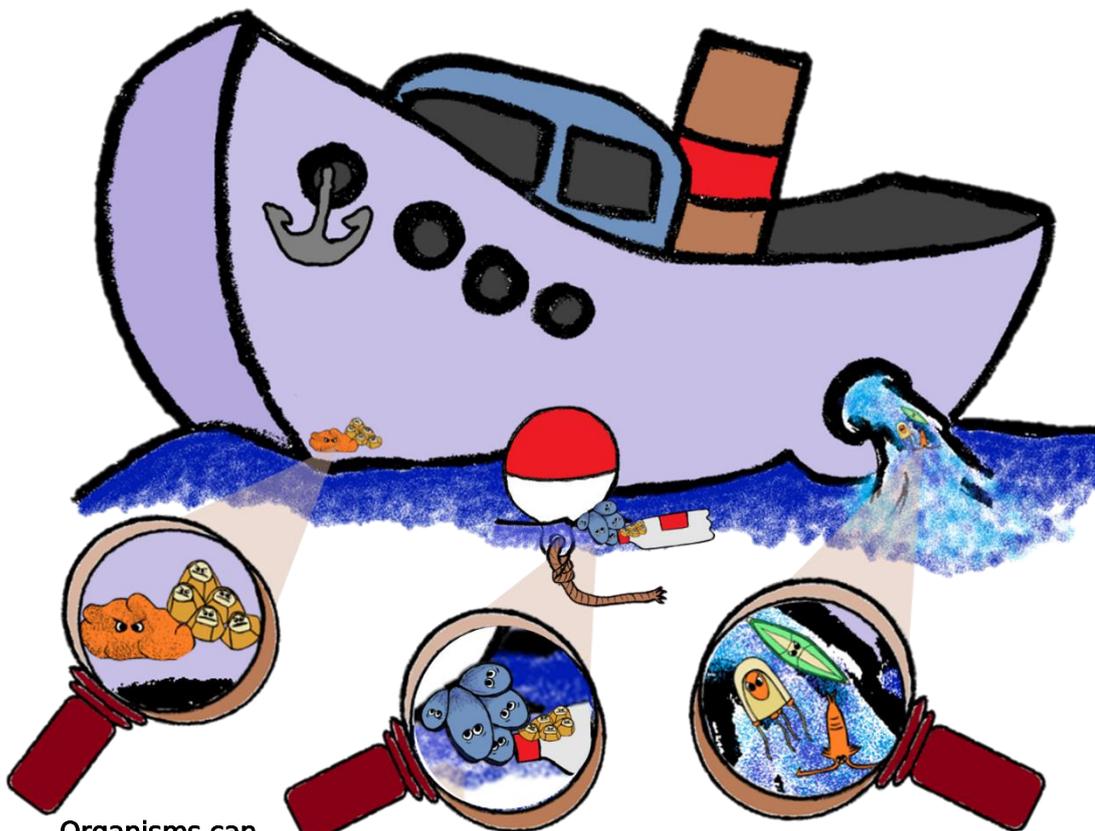


MARINE ALIENS ON SVALBARD

Climate change and increasing human activity in the Svalbard region raise the risk of the introduction of marine alien species.

Alien species are organisms that have been introduced into an environment where they do not occur naturally...

...most marine alien species are introduced to Svalbard by shipping or floating debris:



Organisms can hitch a ride on the hulls of ships

Organisms can attach to discarded floating (plastic) objects and travel hundreds of kilometres on ocean currents

Larvae and microscopic organisms can travel long distances in the ballast water of ships and be released into Svalbard waters

Alien species can put native species at risk and disrupt the local food web. Some can threaten local ecotourism and fishing industries



Photo: L. Solórzano

The tunicate *Botrylloides violaceus* is a marine alien that grows on hard surfaces like ship hulls and floating objects

Preventing the introduction of marine alien species will help preserve the delicate ecosystem of Svalbard



Photo: A. van den Brink

a potential marine alien that can hitch a ride in equipment, among shellfish or as larvae in ballast water.

Scientists at WMR are developing efficient monitoring methods to identify marine alien species around Svalbard. With this knowledge, effective prevention methods can be developed



SVALBARD ENVIRONMENTAL
PROTECTION FUND



WHAT CAN YOU DO TO PREVENT THE INTRODUCTION OF MARINE ALIEN SPECIES TO SVALBARD?

Are you a local?

If you see a marine species that you suspect to be alien, report it to us!

Observation.org



Together you'll discover more!



- Take a picture
- Record the date and place
- Submit this information (incl. photo) to: <http://svalbard.observation.org>
Observations are easy to add online or via the available apps (ObsMapp or iObs)
- See instruction video on <https://youtu.be/xGksc6xHrd4>

Are you a visitor?

Keep your equipment and clothing clean to avoid the accidental transfer of (microscopic) organisms.
Dry equipment thoroughly before you use it on Svalbard.



Are you a boat owner or user?

Clean the hull of your vessel and treat your ballast water in an effective way prior to discharge, before you arrive in Svalbard waters.



WMR PROJECT (2017-2018)

DEVELOPING EFFECTIVE NOVEL DNA METHODS TO DETECT MARINE ARCTIC ALIENS

Step 1:

Collection of local and potential Arctic alien species

Step 2:

DNA analysis of collected organisms to build a DNA database of relevant species

Step 3:

Scanning DNA in environmental (sediment) samples from Svalbard to detect marine aliens using the DNA database

Our results so far:

- Addition of 31 species to the DNA database (of which 8 potential aliens for Svalbard)
- Identification of at least one marine alien species in sediment at Kongsfjorden in 2017

This project was funded by the Svalbard Environmental Protection Fund and the Knowledge Base Program 'System Earth Management' of Wageningen University and Research.

For more information:

Wageningen Marine Research (WMR)
www.wur.eu/arctic-aliens