

REPORT – GRANT FROM THE SVALBARD ENVIRONMENTAL PROTECTION FUND

Organisation number:

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Case number: 23/12

FINAL REPORT REFERENCE NUMBER:23/00358

Description and localisation of key coastal points that will show the migration of coastal organisms

Project results:

Over 220 sites around Svalbard were visited for the macroplastic count (directly on site) and simultaneous driftwood count (satellite imagery). As was expected the land promontories facing NW of Svalbard were the sites with highest density of macroplastic items as well as highest driftwood count. The fishing remains (nets, ropes, boxes, buoys) were the most common items, followed by plastic bottles and household remains. Range of estimated macroplastic mass goes from 123 to 519 tonnes on Svalbard (along 77% of its entire coastline). Encrusting organisms (mussels, barnacles, bryozoans and hydrozoans) were found on large items and on the NW coast only. The topography of the shore (low sedimentary coast versus rocky reflective coast) was of key importance for the litter accumulation.

All source data (tables with georeferenced plastic count, photos of the litter) are stored in the data repository at IOPAN and are available free on the project web page

Table 2 Summary of macroplastic count

https://old.iopan.pl/projects/key_coastal_points/index.html

Documentary movie (20 minutes) was produced and broadcasted on nature film festivals and free on the You tube.

<https://outdoormagazyn.pl/plastic-arctic-kuba-witek/>

<https://www.youtube.com/watch?v=MtENaZ8mULU>

Two research papers were prepared, one is being published

Urbański J. 2026 Spatial distribution of driftwood on Svalbard. Polish Polar Research 47, 27-34

Another one in reviews:

Dragańska- Deja K., Urbński J., Kotwicki L., Herman A., Węśławski JM 2027 Macroplastic deposition on Svalbard shores.

The leaflet describing methodology was distributed among researchers and volunteers that were interested in the project:

There are three steps for costal observation

1. Take a general photo how look the shore from the water line level .
2. Look for stones, rocks, skjerra – if they are nearby take a photo from 1m distance showing the hard substrate – how it is covered with algae/organisms or they are barren.
3. If there is a low tide – look for the loose stones and check underneath if there are
4. crustaceans (few cm long) collect from few to several specimens into the plastic jar. If there are barnacles, bivalves or snails on the rocks – collect few specimens into the plastic jar. You may collect them by hand, spoon or little net, whatever works. Take a note about date, hour, place name, if possible geographic position. Fix the collected organisms in alcohol above 50% strong.

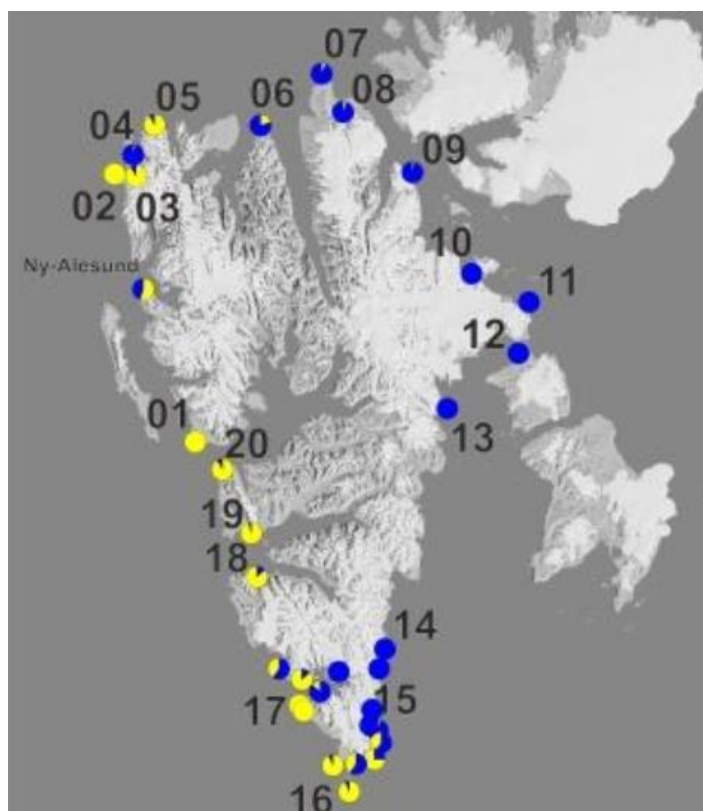
Example of general and close up photo.



Crustaceans under stones on the low water level.



Example map shows occurrence of Atlantic, (yellow) versus Arctic (blue) species of coastal crustaceans on Spitsbergen as of 2019.



Self-assessment of the project's implementation:

Project was completed as promised, the most important implementation is the documentary movie shown in number of nature film festivals and conferences. Key research paper is still in reviews, as the complicated methodology needs longer discussion and corrections.

Environmental impact/environmental benefits of the measure/project, final assessment:

Project description, data and key findings are presented on project web page, the environmental benefits are:

- 1) North West Spitsbergen peninsulas confirmed as the sites of most common species and litter deposition from the South
- 2) The correlation between driftwood (seen from satellite imagery) and macroplastic deposition is satisfactory and indicates the total amount of plastic macro litter on the shores as 500 tonnes weight (over 700 mln objects).
- 3) Web page - https://old.iopan.pl/projects/key_coastal_points/index.html

Start and end

Start date: August 2023

Date of completion/closure: October 2025

Accounts: 502-E23NO058

Costs Budget Accounts: 200.000 NOK

Total costs Financing Budget Accounts: 73.781,66 PLN

Total financing: 73.781,66 PLN

Accounting balance: 0 PLN

Explanation of the accounts, including any savings/variances compared to the application: in accordance with the application

Grant disbursement: 200.000 NOK

Amount for disbursement: 200.000 NOK

Previously disbursed from Svalbard Environmental protection fund: 200.000 NOK

Remaining grant commitment to be returned Svalbard Environmental protection fund: 0 NOK

You stated account number BGKPL98113011210006562315200001 in the application. Is this the correct account number? YES

Attachments

- Scientific report - text above
- 2-3 images/photographs attached

- Short text for website Three summers of field work (2023-2025) focused on the land promontories of Spitsbergen (peninsula, cape, oden, kapp, huken etc) to indicate the land forms that are most important for the accumulation of drifting debris, including species that are presently colonising Svalbard with the ongoing climate change. Driftwood and macroplastic litter were used as proxies for this proces, and North West sector of Spitsbergen was found to be the area where most of the outhern transport is gathered in retained.

- Printed accounts: Expenses 2023-2024-2025

- Documentation of hourly wages: Payrolls_L2311D10, L2509DO1