

Guide: Beach clean-up on Svalbard



Students at Svalbard folkehøgskole help each other to move a big seine net that has washed ashore.
Photo: Stian Pedersen/Polarnatt Media

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1 Why it is important to clear marine litter on Svalbard

When clearing marine litter along the beaches of Svalbard, you must take special considerations into account. Here you will find guidance on how to proceed.

Large amounts of marine litter wash ashore along the coast of Svalbard. Much of the waste comes from shipping and fisheries, and particularly from the Barents Sea fishing fleet and the seas around Svalbard.

Plastic decomposes slowly in nature. The impact of UV radiation, wind and waves breaks down the plastic into smaller pieces that finally become microplastics. Marine litter has multiple negative consequences for animal life.

The Governor of Svalbard has been conducting clean-up operations on the beaches on Svalbard for many years. Annually, they clear approximately 13 tonnes of waste.

Despite extensive clean-up efforts, enormous amounts of waste remain. Therefore, the Governor is positive to the increasing number of people who want to clean the beaches. Every year, the local population of Longyearbyen are invited to take part in a clean-up expedition. These events are very popular since many people want to contribute to a cleaner environment.

This beach clean-up guide is for those who want to arrange clean-up actions. It also contains useful knowledge for those of you who want to take part in an action.

The guide describes both the prior planning and how to safeguard the health and safety of the beach cleaners.

2 Planning a clean-up action

Good planning forms the basis of a successful clean-up.

Beach cleaning actions on Svalbard clearly require more planning than do actions on the mainland. Various factors come into play, including challenging logistics, long distances, climatic conditions, and the threat posed by polar bears.

Therefore, it is important that you familiarise yourself well in advance with the planning required.

At the early planning stage, you should think about:

- Where will the clean-up take place?
- Who will do the clean-up?
- When will you do the clean-up?
- Is a site visit necessary?
- Is the area protected?
- Assess what equipment you need
- The need for insurance to cover the volunteers

Where will the clean-up take place?

When planning where the clean-up action is to take place, it is wise to choose an area that you know is littered. If you are not familiar with an area, you can get good advice and tips from someone with local knowledge.

It might be the Governor, local clubs and associations or others that organise cleaning of an area. Aktiv i friluft¹, the Association of Arctic Expedition Cruise Operators (AECO²) and Svalbard folkehøgskole³ are local actors with experience of big clean-up projects on Svalbard.

With the digital tools, Rydde⁴ and Rent hav⁵, you can see where others have cleaned or are planning to clean. In addition, you can see areas where there is a known need for a clean-up.

Pay attention to restrictions on access when choosing areas. Read more about this in the section on access restrictions (Chapter 6).

¹ <https://aktivifriluft.no/>

² <https://www.aeco.no/>

³ <https://svalbardfolkehogskole.no/>

⁴ <https://ryddenorge.no/>

⁵ <https://kart.renthav.no/>

Who will do the clean-up?

This will depend on conditions at the clean-up site, the amount and type of rubbish and the accessibility of the area.

Cleaning vulnerable areas and places that are difficult to access should be carried out by experienced beach cleaners or professional clean-up operators. Clean-ups in easily accessible areas with lower risk can be carried out by volunteers.

You should invite participants who have the necessary qualifications to clean-up the selected area.

When will you do the clean-up?

Several factors have an impact on when an area can be cleaned:

- Season: The clean-up season on Svalbard is limited to approximately the end of June to the beginning of September due to the Arctic climate.
- Weather conditions: Low air and water temperatures, ice, fog, and wind are typical of Svalbard weather.
- Wave and tide conditions.
- Respect for the flora and fauna, for example the nesting season for birds on Svalbard is from **15 May to 15 August**.
- Any access restrictions in protected areas. You will find more information about this in the section on access restrictions (Ch. 6.1).

Checking the clean-up site

If you are going to do a clean-up close to Longyearbyen, it may be a good idea to visit the clean-up site at the planning stage if possible.

A site visit will provide useful information about a number of factors you should take into account in the planning:

- How much rubbish is there on the site?
- What kind of rubbish is there?
- How many beach cleaners are needed for the size of the area to be cleaned?
- What is the simplest way to access the area?
- What is the terrain like in the area?
- What kind of equipment is needed?
- How will you transport the waste away from the clean-up site?
- Are there any special factors to take into account in the area?

Outside Isfjorden, or if you do not live on Svalbard, it may be difficult to carry out site visits.

In this case, the digital tool Rent hav⁶ can be used as a source of information for the clean-up action. Use this tool to check if anyone has checked the area you want to clean.

Cleaning equipment

The action leader must assess what equipment is needed for a clean-up expedition. This depends, for example, on the site and the type of waste.

You can collect clean-up equipment at the Office of the Governor in Longyearbyen. They provide reusable polyethene bags in two different sizes: small bags for collecting waste on beaches and large bags (1m³) for storing waste on boats and large objects.

The action leader must contact the Governor before the clean-up and arrange where and when the equipment can be collected. The bags must be returned to the Governor at the end of the action.

See the section on Health and safety for beach cleaners (link) for information on clothing, protective gear and other important equipment that should be brought along.

Minimum equipment at all clean-up actions:

- bin bags for picking up litter
- gloves (preferably puncture resistant)

The following equipment may also be useful:

- knife (preferably with a serrated blade)
- litter picker
- rakes or potato forks
- spade
- crowbar
- axe
- hacksaw or saw
- hook to pull out rope
- lifting tongs

⁶ <https://kart.renthav.no/>

3 Dealing with waste

A clean-up expedition is not completed until the waste has been delivered.

Only pick what you are able to transport back to the waste disposal facility. It is forbidden to leave bags of waste behind on the beach.

All waste that is cleaned up must be transported to a waste facility. On Svalbard this is the recycling station in Longyearbyen. Marine waste can be delivered free of charge to the recycling station and in separate containers.

If you have picked or plan to pick large quantities of marine waste, you should contact the recycling station in Longyearbyen beforehand to arrange for further handling.

To be able to deliver marine waste free of charge, the clean-up action must be registered in either *Rydde* or *Rent hav*. Remember to give the action code in *Rydde* or the event ID in *Rent hav* when you deliver the waste at the recycling station.

Clean-up projects that have received grants for waste management from the Norwegian Environment Agency or the Norwegian Retailers Environment Fund, for example, cannot deliver waste free of charge but will be invoiced by the recycling station.

The waste is ground at the recycling station and sent to the mainland for further treatment. To avoid damage to the grinder at the recycling plant, it is vital to separate metal (for example, wire or metal floats) and thick mooring lines/rope from the rest of the waste.

Containers are available at three locations in Longyearbyen

Containers are available at three locations in Longyearbyen where you can discard small amounts of marine litter that you have cleared: Bykaia, Gamlekaia and Kullkaia on Hotellneset.

The containers are yellow and marked 'Clean up Svalbard' and are marked with the logos of the Governor.

The containers must only be used for waste from volunteer beach clean-up actions on Svalbard, and not for waste from ships. The reason for this is to acquire an overview and better statistics in respect of how much rubbish is cleared on Svalbard each year. The containers are only dimensioned for small amounts of waste.

Chemicals and other hazardous waste must be separated since these can pose a risk for workers at the recycling plant. Use the orange bags for this type of waste in order to distinguish it from other types of rubbish in the container.

Do not throw away reusable polythene bags. At the end of the clean-up expedition, the bags should be returned to the Governor. Ordinary plastic bags can be discarded in the container.

Contact the recycling station to find out the code for the containers (telephone +47 79 02 23 18). If the container is full or there are other problems, please contact the recycling station. Do not leave anything outside the container or on the jetty.

4 Registration in Rent hav

Rent hav⁷ is a digital tool for those of you who work with marine littering in Norway.

You can register, plan, coordinate and prioritise clean-up activities in Rent hav. By registering data here, you provide important knowledge about marine littering nationally.

Use Rent Hav to register when, where and approximately how much rubbish was cleared. The tool also has an offline app for iOS and Android.

On the mainland, this is used by many different beach clean-up operators. Thus, it provides a reliable database for everyone who is interested in marine litter data in Norway.

The tool can also be used for registering litter that can be cleared on a later occasion (for example, large objects).

⁷ <https://kart.renthav.no/>

5 Areas that must not be cleaned

There are two areas on Svalbard where volunteers must not clear marine litter because this is carried out by others.

The Governor of Svalbard's registration areas

The Governor is responsible for areas where beach litter is registered for the monitoring of the environment on Svalbard and Jan Mayen (MOSJ) and for the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR).

Please do not pick up rubbish in the following areas:

Poolepynten, Brucebukta between the positions UTM 33X 8709893 0429822 (WGS 84) and UTM 33X 8709901 0430022⁸

Luftskipodden between the positions UTM 33X 8849261 0415272 (WGS 84) and UTM 33X8848556 0415262⁹

There are also signs marking the areas.

⁸ <https://beachlitter.ospar.org/beach/brucebukta>

⁹ <https://beachlitter.ospar.org/beach/Luftskipodden>

6 Access restrictions

A number of access restrictions have been introduced on Svalbard.

6.1 Is the area protected?

Svalbard has seven national parks and 22 protected areas that constitute 65% of the land area in the archipelago. The purpose of the protected areas is to protect the vulnerable flora and fauna.

Access restrictions apply for the whole year or parts of the year in the national parks and protected areas.

An overview of areas with legal provisions on access¹⁰.

You will also find an overview of protected areas in the Miljødata (environmental data) thematic layer of Rent hav.

See also the regulations on the protection of the relevant national park or protected area for more information and provisions on access restrictions, and whether there are any special considerations you must take into account if planning to clean the area.

Overview of the body of regulations and access restrictions on Svalbard¹¹.

Contact the Governor if you are uncertain and require guidance.

All flora and fauna are protected on Svalbard. When you clear up rubbish, you must do this without harming or removing the vegetation.

6.2 Obligation to notify the Governor

A notification obligation¹² means that you are obliged to inform the Governor if you plan to visit areas outside management area 10¹³. The Regulations relating to tourism, field operations and other travel in Svalbard – also known as the ‘tourist regulations’¹⁴ – contain various requirements on the notification obligation for visitors, permanent residents, travel agents/tour operators, and research and educational institutions that intend to visit areas outside management area 10.

Since, in principle, beach cleaners may be included in all of these categories, a description of differences in the notification obligation for the different groups is provided below.

- **Visitors:** Individual visitors outside management area 10 must notify the Governor of their travel plans at the latest **four weeks before** a planned trip and must report

¹⁰ https://www.syssemesteren.no/siteassets/kart/temakart/ferdselsrestriksjoner/ferdsel2022_no.pdf

¹¹ <https://www.syssemesteren.no/nb/reiseliv/regelverk-og-ferdseksrestriksjoner/>

¹² <https://www.syssemesteren.no/nb/reiseliv/melde--forsikrings--og-rapporteringsplikt/>

¹³ <https://www.syssemesteren.no/siteassets/kart/temakart/ferdselsrestriksjoner/forvaltningsomrade-10.pdf>

¹⁴ <https://lovdata.no/dokument/SF/forskrift/1991-10-18-671>

after the trip.

- **Permanent residents:** Permanent residents who are travelling to areas where there is a notification obligation¹⁵, must notify the Governor of the trip.

-

Areas where there is an obligation to notify the Governor are:

- Nordvest-Spitsbergen National Park
 - Forlandet National Park
 - Sør-Spitsbergen National Park
 - Nordaust-Svalbard Nature Reserve
 - Sørøst-Svalbard Nature Reserve
- **Travel agents/tour operators:** Tour operators shall give a notification of their planned travel programme for each summer and winter season and **no later than eight weeks prior to the start** of the scheduled travel programme. A new notification must be given in the event of any significant changes to the reported programmes.

Tour operators and research and educational institutions must give notification of their plans to take anyone to a site outside of management area 10 for an extended stay. For journeys at sea, notification must be given of the sailing schedule, including any planned visits ashore.

- **Research and educational institutions:** Research and educational institutions that are to travel or have activities outside of management area 10, must notify the Governor about the trip **no later than four weeks** prior to the planned trip.

You will find more information and an online notification form on the Governor's website.

6.3 Need for insurance

Tour operators are responsible for taking out insurance or providing a bank guarantee to cover expenses related to potential searches, rescue operations or patient transport that may be necessary in connection with activities in Svalbard. The Governor of Svalbard determines the amount based on the information given about the tour schedule.

Other relevant insurance policies may be accident insurance for beach cleaners, liability insurance for damage to third party property and damage due to natural disaster. This is in addition to the insurance of vessels and other equipment.

Prior to taking out insurance, it may be wise to check whether the participants in the clean-up action are already insured through the organisation they represent, for example, a school, company, club or association, in order to avoid double insurance.

¹⁵ <https://www.sysselmesteren.no/siteassets/kart/andre-kart/ferdselsomrader-svalbard.pdf>

6.4 Cultural remains

Cultural remains are found in many parts of Svalbard, and all objects dated earlier than 1946 are automatically protected.

Automatically protected cultural remains are surrounded by a security zone of 100 metres in all directions around them. The same provisions on protection apply.

Most cultural remains are found along the coast, and often far from settlements.

Some date back 400 years, including, for example, objects from Norway's Arctic Sea hunting activities and Western-European whaling in the 17th and 18th centuries, objects from international mining operations in the 20th century or objects from the Second World War.

Bones and bone fragments in and on the ground as well as all traces of human graves, including crosses and gravestones, are automatically protected regardless of age. This also applies to walrus and whale skeletons.

It can often be challenging for beach cleaners to distinguish between marine litter that can be freely picked and cultural remains that must not be moved.

To make it easier for beach cleaners, an overview has been drawn up including photos and descriptions of some of the most common cultural remains that beach cleaners may come across during a beach clean-up, and which must not be removed (NB! This is not an exhaustive table).

If you are unsure whether you can pick an object, you are recommended to leave it or contact the Governor for guidance.

Examples of cultural remains



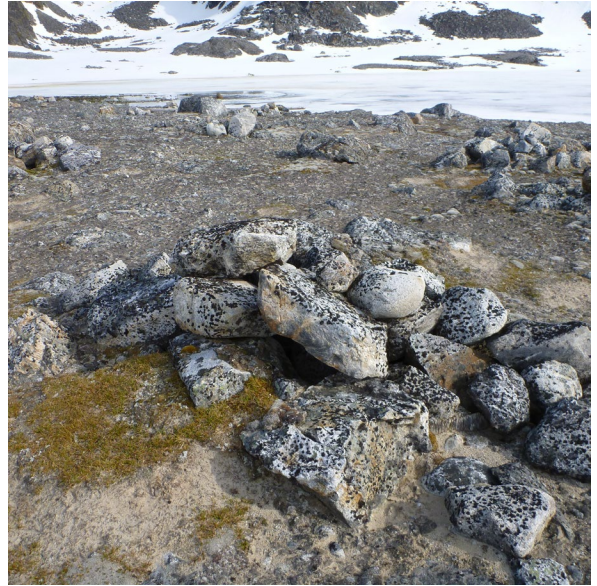
1. An old wooden cross washed ashore on Svalbard. Photo: Norwegian Environmental Agency



2. Photo of an old wooden hut on the north-west tip of Svalbard. Photo: Norwegian Environmental Agency



3. Glass float found on the foreshore. Photo: Governor of Svalbard



4. An old burial cairn. Photo: Governor of Svalbard



5. Fox trap. Photo: Governor of Svalbard



6. Remains of a fox trap. Photo: Governor of Svalbard



7. Foundations of ruined house. Photo: Governor of Svalbard 8. Crafted wood and driftwood. Photo: Governor of Svalbard

The Governor has prepared an overview map showing the locations of various automatically protected cultural remains on Svalbard where access restrictions apply throughout the year¹⁶.

¹⁶ <https://www.syssemesteren.no/contentassets/bffbcd7fa7ae42ad8c6c22f047b360b3/kulturminner---ferdselsforbud.pdf>

7 Use of drones

If you are planning to fly a drone, you must first check if the area in question is situated in a protected area.

There are separate regulations for all protected areas. If you are not in a protected area, you still have to make sure that flying a drone will not disturb birds and wildlife in the area concerned.

As a main rule, drones are banned in national parks and in the large landscape protection areas. There is also a potential that they may be banned in nature reserves; you must check what the regulations on protection say about the use of drones¹⁷.

In Longyearbyen, flying drones closer than five kilometres from the airport is forbidden. If you are planning to fly a drone outside the restricted zone, the following rules apply:

- Disturbing wildlife on Svalbard is forbidden.
- Do not fly higher than 120 metres above ground level.
- You must always be able to see your drone.
- Familiarise yourself with the rules about filming and photographing other people. The Norwegian National Security Authority (NSM) and the Norwegian Data Protection Authority provide information about the rules that apply to aerial filming and photography.
- Flying a drone in the dark is forbidden.

Around Ny-Ålesund Airport, drones are banned in a zone with a five-kilometre radius. For more information on the prohibition on aircraft, see the Kings Bay website.

In addition, Ny-Alesund is surrounded by a 20-kilometre radio silence zone. This means that in practice, flying drones in Ny-Ålesund and the whole of Kongsfjorden is forbidden.

The Norwegian Communications Authority manages radio frequency resources in Norway. For more information about radio silence in and around Ny-Ålesund, contact Kings Bay AS and the National Communications Authority¹⁸.

¹⁷ <https://www.miljodirektoratet.no/ansvarsomrader/vernet-natur/regler-for-droner-i-naturen/>

¹⁸ <https://www.syssemesteren.no/droner-pa-svalbard/>

8 Health and safety for beach cleaners

Safeguarding the health and safety of all those who take part in beach clean-ups is important.

Responsibility for health and safety

The aim is to carry out beach clean-ups in a proper manner without injury to the beach cleaners. The risk of injury depends on where the clean-up takes place, the terrain, what type of waste is found and who takes part.

The Norwegian Working Environment Act sets out requirements as to a satisfactory working environment, and states that when planning and arranging the work, emphasis shall be placed on preventing injuries and diseases.

Following an overall assessment, volunteers can also be regarded as workers under the Working Environment Act. Therefore, an action owner is responsible for preventing accidents during clean-ups and for ensuring that the activity is planned, organised, and carried out in accordance with the provisions of the Working Environment Act.

The action owner is responsible for:

- preventing accidents
- planning operations, assessing risk, and implementing measures
- assessing the need for necessary training and implementing this
- assessing whether the working hours are such that safety is safeguarded
- paying particular consideration to children and adolescents

The participants in a clean-up action are responsible for:

- being observant and careful, and looking after their own safety
- complying with information given about the clean-up
- using appropriate clothing and protective equipment
- taking along enough food and drink if this is not supplied

Assessing risk

Assessing risk is important for safeguarding health and safety and preventing accidents during a clean-up action. You must adjust your risk assessments based on the dangers that may affect the clean-up in question.

By assessing the risk, you become more aware of what might happen during the clean-up action and can assess what measures you need to take to safeguard the safety of the participants.



Hiking in rugged terrain entails risk. Photo: Stian Pedersen / Polarnatt Media

Three simple questions are at the heart of a risk assessment:

- What could go wrong?
- What can we do to prevent this from happening?
- What can we do to reduce the impact of a potential incident?

In situations that are particularly dangerous, complex and confusing, or if you are uncertain whether safety has been adequately addressed, there may be a need for a more thorough risk assessment. This would involve a safe-job-analysis (SJA).

When you conduct an SJA, you need to consider all the tasks systematically and step by step while assessing the associated risk factors. You also need to implement measures to reduce the risk when necessary.

Make sure to conduct the SJA before the clean-up action. A standard SJA form is a good tool and will guide you through the analysis.

The information below is primarily concerned with the health and safety of beach cleaners, but you can also use this to assess whether the clean-up may disturb animals and birds or cause harm to vegetation, cultural remains or property.



Wind and waves are risk factors. Photo: The Norwegian Environment Agency

Question 1 – What could go wrong?

The first question is all about mapping the hazards and envisaging what events might happen during a clean-up operation.

It is a good idea to use this checklist to assess what could go wrong. The list is not exhaustive, and the nature of the hazards and events you should assess will vary between clean-up actions. The objective is to assess all risk factors that are relevant to your particular operation.

Risk factors

General conditions:

- Conditions at the clean-up site
- Communication and network system
- Weather, wind, and wave conditions
- Visibility (fog)
- Ice conditions
- Glacier calving
- Tide conditions
- The experience of the beach cleaners
- Stings and bites
- Not enough food and drink
- First aid kit and expertise
- Nesting bird colonies

Transport by boat:

- Transporting personnel by sea

- Suitable boats
- Minimum 200 metres from the edge of any glacier
- Boarding and alighting, by a jetty, between boats, at the clean-up site, etc.
- Skerries, swells etc. (navigational charts for Svalbards are generally poor)
- Mooring of boats
- The weather makes it difficult or impossible to travel
- The weather changes en-route and puts the action at risk
- Breakdown or accident at sea
- Participants become seasick and/or anxious
- People getting wet aboard the boat
- The experience of the boat crew
- Safety equipment aboard boats

Off-road travel:

- Travel in difficult terrain
- Fall injuries or sprains
- People may go missing
- People may fall in the sea

Polar bears and walrus:

- Encounters with polar bear or walrus on the beach/at sea
- Polar bears enter the clean-up area and move too close to the beach cleaners

Clean-up:

- Stings and cuts
- Strain injuries (from heavy lifting or pulling)
- Crush injuries
- Body cooling and hypothermia
- Handling large and heavy objects
- Handling hazardous waste, e.g. chemicals, waste oil, syringes, vials, sharp objects, explosives, and any unknown content
- Acute illness

Transport of waste:

- Safe storage of waste
- Loading/unloading waste from boats
- Safe transport of hazardous waste
- Sea transport of waste
- Land transport of waste

Question 2 – What can we do to prevent this from happening?

When you have gained an overview of what might happen, you need to consider what to do to prevent this from happening.

These are general precautions you should take:

- Safe transport of personnel
- Keeping at a good distance from the edge of glaciers (minimum 200 metres).

At times of calving, the splash from breaking chunks of ice can be fatal

- Protection against polar bears in the field
- Good organisation of the clean-up
- Necessary training and information
- Good communication
- Correct handling of hazardous waste
- Appropriate clothing and protective equipment
- Safe storage and transport of waste

Safe transport of personnel

Make sure that all transport complies with current rules and regulations and that the transport provider is familiar with these rules. The Norwegian Maritime Authority is the regulatory body for both commercial vessels and leisure craft.

The Code of Conduct for Safe Boating provides some basic rules for safe travel by boat. The International Regulations for Preventing Collisions at Sea apply for all who travel by sea and describe principles of navigation and sailing. The regulations regarding vessels under 24 metres load line length that carry 12 or less passengers provide guidance for carrying up to 12 passengers¹⁹.

Good organisation of the clean-up

As the action owner you should draw up a plan that describes how the clean-up will be organised and conducted. Your plan should take account of who your clean-up participants are.



From a clean-up expedition on Svalbard. Photo: The Norwegian Environment Agency

Every clean-up action should have a HSE officer in charge of health, safety, and environment issues. The HSE officer will be responsible for the care of any casualties and must ensure

¹⁹ https://www.sdir.no/veiledninger/12-passasjerer-eller-farre-sporsmal-og-svar/#Fart%C3%B8y_med_flere_enn_12_passasjere

that accidents are reported, and appropriate transport provided for any casualties. See separate instructions for HSE officers for further information.

Polar bear safety in the field

In all parts of Svalbard it is illegal to lure, stalk or track polar bears in such a way that the animals may be disturbed or put at risk, or people put in danger.

Every clean-up action must have a designated officer in charge of polar bear safety as well as several polar bear guards who are specifically assigned to keeping the clean-up action safe from polar bears. Polar bear guards keep a lookout for polar bears and assist with the evacuation of the group if polar bears are spotted in the area. The number of guards will depend on the size and experience of the group and how easy it is to establish a good view of the terrain. There should be a minimum of two polar bear guards per group of up to ten beach cleaners.

Polar bear guards must be equipped with deterrents, rifle, ammunition, binoculars, and a communication system. Note that polar bear guards must hold a firearm permit or a permit to borrow a firearm. If this is not in place, an application must be submitted well in advance of the action. More information is available on the Governor's home page²⁰.

Deterrents should be used if a polar bear is getting close to the group before all participants have been evacuated. The use of firearms and the killing of polar bears is a last resort in situations of acute danger. Polar bear guards must be assigned to no other duties than protecting the group from polar bears and they should not take part in the clean-up activities. To ensure that they are able to maintain concentration throughout their shift, it is important to split shifts into manageable sessions (e.g. swap after lunch).

Polar bears can be difficult to spot and will often be lying in hollows or behind terrain formations and boulders. Keep in mind that the eyes of a polar bear are set high up on their head so the bear will be able to see you even if you cannot see the bear. This makes it important to protect the area well, first by looking out from the boat along the shoreline of the chosen area and then by climbing to higher ground in order to get a better view of the full area. A minimum of 2 polar bear guards must keep the area safe as the group alights, so that they can protect each other in case of a polar bear attack. See separate instructions for polar bear guards for further information.

Necessary training and information

It is good practice to talk through the clean-up procedures with the team before the action starts. This should include information about:

- Where we will be cleaning
- What we will be cleaning
- Timetable
- Organisation
- Assembly point
- Handling of waste and hazardous waste

²⁰ <https://www.syssemesteren.no/nb/vapen/>

- Risk factors
- Precautionary measures and the reporting of incidents

Safe communication

Field work can be carried out in areas without a mobile phone signal. The action owner must consider the need for communication and what communication equipment is required.

Satellite telephone (Iridium), InReach and VHF are essential communication systems on Svalbard.

Correct handling of hazardous waste

During the clean-up you may come across hazardous waste that needs to be safely handled in different ways depending on its type. If you are unsure whether what you find is safe to handle, then keep at a distance and leave the object behind.

The Norwegian Environment Agency has worked with the Norwegian Retailers' Environment Fund to produce a picture guide that shows various types of hazardous objects that beach cleaners may come across when picking marine litter ²¹. Any hazardous waste should be kept apart from other waste and must be clearly labelled before depositing with a waste disposal facility.

Appropriate clothing and equipment

Clean-up personnel should wear appropriate footwear, clothing and protective equipment suited to the conditions and type of activity. Boots should have a good grip and provide ankle support; they should be watertight and preferably knee-high. This is important to be able to cross meltwater streams and move around in the tidal zone without getting wet.

Protective equipment:

- Gloves (preferably puncture resistant)
- Sun glasses or safety goggles
- Life vest or survival suit
- Ski goggles for use in small boats

Other equipment:

- Hi-viz vest
- Knee protectors
- Waders or wet suit

The HSE officer and the polar bear safety officer should bring the following equipment:

- VHF communication system
- Locator beacon
- Rifle and signal gun with ammunition
- Binoculars
- Whistle

²¹ <https://www.marfo.no/artikkel/bildeguide-for-farlige-gjenstander/>

- GPS, compass, and map of the area
- Satellite telephone or other emergency communication equipment in areas without a mobile signal
- Mobile phone in areas with a signal

Ergonomics and correct lifting technique

Take care when moving large and heavy objects. It is important to use the correct lifting technique if you need to lift heavy objects, and it is a good idea for several people to join forces to remove them.

If you come across objects that you are unable to lift manually, the objects can be registered in the Rydde or Rent hav tool so that they can be picked up by people with access to appropriate equipment.



Finding large objects. Photo: The Norwegian Environment Agency

Question 3 - What can we do to reduce the impact of a potential incident?

Accidents can happen even if a risk assessment has been conducted in advance and measures have been taken to reduce the risk. You will therefore have to be prepared to handle potential incidents and accidents.

Before a clean-up action, consider:

- Reporting of accidents
- Emergency and first aid equipment
- First aid for injuries
- Transport of casualties

Reporting of accidents

If a serious accident happens on Svalbard, this must be reported on 112. Incidents can be reported on VHF channel 16.

If the clean-up action takes place in an area without a mobile phone signal, you need to bring along an appropriate communication system such as VHF, satellite telephone or an inReach GPS transmitter. All clean-up participants should be told where this communication equipment is kept.

If there is an accident, it is important to keep all participants informed of what has happened and the status of any casualties.

Emergency and first aid equipment

The action owner must consider what emergency and first aid equipment will be necessary to bring along to each clean-up action.

Relevant equipment includes:

- First aid kit
- Rescue throw line
- Whistle
- Communication equipment
- Emergency flares

It can also be useful to bring along equipment that will help you look after casualties for some time. Such equipment should be kept in an 'emergency box' positioned in an easily accessible location on the clean-up site. The box should include:

- Jervenbag or similar
- Sleeping mat
- Material for rigging up a splint
- More sophisticated first aid equipment (pain killers etc.)
- Camping stove and fuel
- Cooking set
- Emergency rations (biscuits, drytech, drink powder etc.)

General lifesaving first aid

Every clean-up action must include at least one participant who is a certified first-aider. Below is a list of general first aid advice.

- If there are injuries caused by an explosion:
 - Call 112
 - Shout for help if anyone can hear you.
 - Consider whether it is safe to move into the area (more explosives?)
 - Secure the site of the accident (prevent further injuries, put out fires)
 - Give lifesaving first aid
 - Evacuate the casualties if required and if possible

- If the casualty is unconscious (does not respond when addressed or lightly shaken):
 - Call 112
 - Shout for help if anyone can hear you.
 - Maintain free airways by tilting the head carefully backwards and lifting the chin forwards
 - Check if the person is breathing (look, listen and feel for breath).

- If the casualty is breathing normally:
 - Place the person in the recovery position (remember to maintain free airways and try to keep the casualty's body temperature normal).

- If the casualty is not breathing, or is not breathing normally:
 - Give CPR: alternate between 30 chest compressions and 2 breaths of rescue breathing until the casualty regains consciousness or medical personnel take over.
 - If available, ask someone to get a defibrillator and hook it up.

- In case of severe bleeding:
 - Call 112
 - Stop the bleeding by pressing your hand/fingers firmly against the wound or use a hard object that will provide pressure against the bleed (e.g. a stone).
 - Put a gauze pad or similar between the wound and the hand/fingers/object.
 - If possible, raise the bleeding area.
 - Then apply a pressure bandage. If you don't have access to a ready-made pressure dressing, you can make one by using a pressure element (such as stone or similar) and stretching a bandage around the stone /the wound.
 - If there are major cuts/tears, push gauze swabs or similar into the wound and then apply a bandage on top, preferably elastic, to press the tissue together and stop the bleeding. It is a good idea to use rolled-up bandages for pushing the gauze into the wound.
 - In case of penetrating wounds, do not remove the penetrating object as this may lead to more rapid bleeding and exacerbate the injury.

- In case of burns:
 - Ring 112 ved store major burns.
 - Cool down the burn immediately by keeping it under water for at least 20 minutes. If possible, use tepid water (20 degrees). Do not use ice, as this may damage the skin even further.
 - If possible, keep the injured area well raised to avoid swelling.
 - If possible, remove clothing to cool down all burnt areas. Do not pull off clothes that are stuck to the skin.

- If you need to see a doctor, cover the burn after cooling it down. Thin, clean cling film can be directly onto burnt skin and fastened with plaster. Do not apply anything sticky or fluffy to the burn. Do not apply grease, cream, butter or oil.
- For more first aid advice:
 - <https://www.113.no/forstehjelp/>
 - <https://www.rodekors.no/forstehjelp/tema/>

Transporting casualties

Before the activities start, the action leader must consider how any potential casualties will be transported from the clean-up site. This is particularly important if the action is taking place in an area where it is impossible to raise the alarm and call for transport assistance.

9 Instructions for HSE officers

Below are details of tasks to be assigned to the HSE officer during a clean-up action as well as a list of equipment.

9.1 HSE officer

Main tasks: Ensure that activities within the chosen area are organised and managed in a way that prevents damage, injuries and near-misses affecting participating personnel, equipment or cultural remains.

Position: With the participants within the chosen clean-up area.

Tasks:

- Lead the activities and maintain communication with the polar bear safety officer and the first aider
- Coordinate and manage the activities in liaison with the leader of the clean-up action/officer in charge
- Report to the leader and the drivers of the vessels/boats
- Keep in touch with all participants in the designated area at all times

Special risks for the HSE officer to control:

- General activities
- Transport of participants to/from the area
- Transfer of participants from a large vessel to a small boat
- Stepping ashore on the beach, alighting from a small boat
- Conducting the clean-up activities on the beach
- Boarding a small boat and transport to the vessel or returning to Longyearbyen
- Setting up and running the camp

Necessary material and equipment:

- VHF communication system
- Mobile phone, or satellite phone in areas without a mobile signal
- Locator beacon/InReach if required
- Simple first aid kit
- Binoculars
- Whistle
- Firearm & signal gun with ammunition (only in the field)
- Lists of participants
- GPS, compass and map of the area

Required competence for being assigned to this job:

- Experience of managing field work on Svalbard
- Experience of similar activities
- Good level of competence with respect to field safety on Svalbard

10 Instructions for polar bear safety officers and polar bear guards

Below are details of the tasks assigned to polar bear guards as well as a list of equipment.

10.1 Polar bear safety officer

Main tasks: Maintain polar bear safety during the activity and throughout the night if an overnight stay is involved. Will not be taking part in any other activity to keep focused on keeping a lookout across the area to spot polar bears or other potential hazards and making sure that no participants move too far away from the group. The polar bear safety officer will be liaising with the HSE officer about the deployment of polar bear guards, and they will maintain constant communication before, during and after the expedition/boarding of the boat in order to protect participants and equipment against polar bears and walruses.

Position: With the participants within the designated clean-up area. The first to go ashore and the last to board the boat.

Tasks, polar bear safety officer:

- Liaise with the HSE officer before, during and after an expedition
- Make decisions and issue instructions regarding the deployment of polar bear guards along the beach/in the terrain, and VHF communication with the guards as required
- Keep contact with the partner team's polar bear safety officer
- Assist with the evacuation if polar bears have been spotted in the area (first response if a polar bear enters the designated clean-up area)
- Use any available deterrent if a polar bear approaches the group before the evacuation has been completed
- Discharge the firearm and kill the polar bear only as a last resort in case of danger
- Maintain safety in case of accidents or undesirable incidents, inform the HSE officer and liaise with them about the appropriate response
- Instruct participants assigned to polar bear guard duties on their overnight responsibilities and distribute shifts from 11pm to 8am.
- Follow procedures for safe firearms handling and instructions for polar bear guards

Appropriate materials and equipment for the polar bear safety officer:

- VHF communication system
- Rifle & signal gun with ammunition (only in the field)
- Rifle to be semi-loaded in the field
- Binoculars (if available – it is most important that the polar bear guards have binoculars)
- Whistle
- GPS, compass and map of the area

- The polar bear officer wears the satellite phone (or other means of emergency communication)
- Mobile phone (in areas with a signal)
- Yellow vest or similar to highlight the role in the field

Required competence for being assigned to this job:

- Experience of tour planning and having conducted tours on Svalbard:
- Experience of working as a polar bear guard
- Training in the use of VHF
- Experience with safe handling of firearms

10.2 Polar bear guard

Main tasks: Will take part in no other activities in order to maintain focus on keeping a lookout across the area and spot bears or other potential hazards during the activity and through the night if an overnight stay is involved. Polar bear guards work with the polar bear safety officer to decide on their best position, and they constantly communicate before, during and after the expedition/boarding the boat to keep the participants and all equipment safe from polar bears and walruses.

Position: On the periphery of the clean-up team/group and a little higher up for a good view. Should step ashore after the polar bear safety officer and board the boat before the polar bear safety officer.

Tasks, polar bear guard:

- Take instructions from the polar bear safety officer
- Immediately notify the polar bear safety officer if a bear is spotted and discuss the next moves
- Assist with the evacuation of the group if there is a polar bear in the area (first response if a polar bear approaches the clean-up area) and keep an eye on the polar bear during the evacuation while updating the group as necessary
- Make use of any available deterrent if a polar bear approaches the group before the evacuation has been completed – if possible in liaison with the polar bear safety officer.
- Discharge the firearm and kill the polar bear only as a last resort in case of danger
- In case of accidents or incidents, polar bear guards must stick to their primary function which is to keep the area safe from polar bears (keeping a lookout and raising the alarm, further action if required) and maintaining constant communication with the polar bear safety officer. Ensure that all participants are at a safe distance

from those carrying firearms, i.e. the polar bear guards and the polar bear safety officer.

Necessary material and equipment, polar bear safety officer:

- VHF communication system
- Rifle & signal gun with ammunition (only in the field)
 - Rifles to be semi-loaded while in the field. Buddy checks on loading and unloading.
- Binoculars
- Whistle
- Hi-viz vest
- Mobile phone (in areas with signal)
- Yellow vest or similar to highlight the role in the field.

Required competence for being assigned to this job:

- Experience of tour planning and having conducted tours on Svalbard:
- Experience of working as a polar bear guard
- Training in the use of VHF
- Experience with safe handling of firearms