



# SAFETY IN SVALBARD

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## THE MOUNTAIN CODE

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- 1.** Plan your trip and leave word of your route.
- 2.** Adapt your route to your ability and the conditions.
- 3.** Be weather-wise and pay attention to avalanche forecasts.
- 4.** Be equipped for bad weather and frost, even on short trips.
- 5.** Bring sufficient equipment to be able to help yourself and others.
- 6.** Make safe route choices. Recognise avalanche terrain and weak ice.
- 7.** Use a map and compass. Always know where you are.
- 8.** Turn back in time. Sensible retreat is no disgrace.
- 9.** Save your strength and seek shelter if necessary.  
Have a nice trip!

# THE SVALBARD GUIDELINES

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- 1.** Don't be an Arctic litterbug!  
Leave no lasting signs of your visit.
- 2.** Birds and other animals are not to be disturbed. Remember, you are the guest.
- 3.** Help take care of the biodiversity.  
Do not pick flowers.
- 4.** Leave old cultural remains alone. Law protects all traces of humans from before 1946.
- 5.** It is prohibited to lure, pursue or otherwise seek out polar bears in such a way as to disturb them or expose either bears or humans to danger.
- 6.** Don't leave settlements without a suitable gun, and experience in using it.
- 7.** Be considerate to others.
- 8.** Contact the Governor's office (Sysselmannen) if planning a longer field excursion. A mandatory registration applies for travel to large parts of Svalbard.
- 9.** Acquaint yourself with the rules and regulations pertaining to travel and other tourist activities in Svalbard.
- 10.** For the sake of both the environment and yourself, we recommend organised tour arrangements.

*It is impossible being an invisible tourist, but we do appreciate your trying.*



Photo: Ståle Nylund



## FIELD SAFETY IN SVALBARD

This brochure includes the most important safety factors you need to consider when venturing into the wild in Svalbard. The contents will not provide you with all the answers or detailed descriptions of how to act in every situation. It is therefore crucial that you personally acquire the knowledge and skills necessary in order to face the challenges described.

Svalbard tour operators offer a wide range of guided trips with tour managers who are familiar with the local areas, and where the tour operators are responsible for the safety of the participants. The guides also convey information about the environment and culture in Svalbard, which can enhance your overall hiking experience. If you do not have the knowledge and experience required to go off on your own, you should join a guided tour.

This brochure focuses on safety in the field, and measures each individual can take in order to prevent dangerous situations and accidents. However; it is not our intention to put you off hiking in Svalbard. Most excursions are successful because each individual has assumed responsibility for their own safety and adapted to the special conditions in Svalbard.

### **Experience Svalbard on nature's own terms**

Svalbard is one of the largest wilderness areas left in Europe. Protection of the distinctive natural wilderness is one of the main objectives of Norway's

Svalbard policy. Svalbard is also an increasingly important area for climate and environmental research. At the same time, there is a political wish to facilitate a sustainable tourism industry so that visitors can experience this marvellous environment on nature's own terms.

Being a tourist in Svalbard is first and foremost about experiencing nature in its most unique and magnificent splendour, varied and fascinating fauna and interesting cultural heritage. The Arctic environment is very vulnerable and requires careful travel. There are several laws and regulations with the purpose of protecting the environment and cultural heritage of Svalbard. Some areas have traffic restrictions. You are responsible for familiarising yourself with rules and regulations before setting off on an excursion.

Please be aware that all visitors venturing alone outside Management Area 10 are obligated to notify the Governor and take out a search and rescue insurance. Get in touch with the Governor of Svalbard in good time before you start your excursion.

*For more information: [www.sysselmannen.no](http://www.sysselmannen.no)*

# BEFORE YOUR EXCURSION

## Clothing and equipment

Your clothing should be adapted to the season, and should always be windproof and waterproof. Additional clothing for extreme weather conditions goes without saying. During winter, it is important that you are able to cover all bare skin with insulating and windproof clothing – including your face. Several layers of clothing are usually more effective than one thick layer. Shoes and clothing must be big enough to fit extra insulating layers.

There is no single piece of 'wonder clothing' to cover all your needs, so you need to make sure you choose varied clothing adapted to your needs and your excursion. Frostbite is among the most common injuries in Svalbard, and is mainly due to lack of, or incorrect clothing. Always bring extra mittens and an extra hat, even on short excursions.

The list on page 7 includes the minimum of safety equipment required for staying in the wilderness in Svalbard. All the advanced equipment in the world could never compensate for knowledge and skill. The equipment is not worth much if you cannot use it. Level-headed consideration of your own limits and well thought through decisions that prevent you from stepping into dangerous situations will always be your best tools.

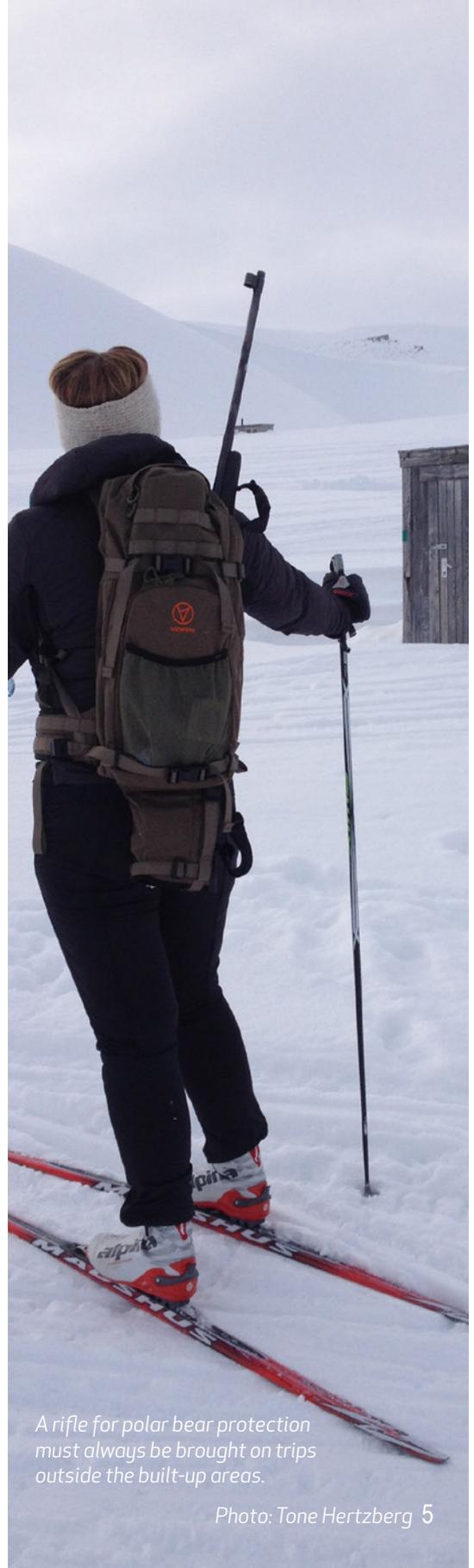
## Weapons and intimidation aid (pyrotechnical aids)

There is a very real danger of running into polar bears in Svalbard.

The Svalbard Environmental Protection Act, section 30a states that any person travelling outside the settlements, with the exception of visitors and permanent residents who are taking part in organised tours, has a duty to familiarise themselves with safety measures in respect of polar bears. Necessary measures shall be taken to avoid the danger of polar bear attacks and to ward off an attack without injuring or killing the animal.

Any person travelling outside the settlements, with the exception of visitors and permanent residents who are taking part in organised tours, shall be equipped with appropriate means of frightening and chasing off polar bears. This may include a flare gun, thunder flashes and the like. Remember to bring extra flares.

We recommend that you bring a .308 Win calibre rifle or higher for protection against polar bears.



*A rifle for polar bear protection must always be brought on trips outside the built-up areas.*

You need comprehensive firearms knowledge and proper target practice. Never set out on an excursion without the necessary firearm skills. The Firearms Act applies for storage, transport and use of firearms. Carrying loaded weapons within built-up areas is illegal, and the weapon must be carried in such a way that everyone can see that it is empty, meaning that you have to remove the breechblock (vital weapon piece). Intimidation aids such as flare gun and thunder flashes are better suited than rifles when it comes to scaring off polar bears. However; a flare gun can never be a substitute for a rifle. It should only be a supplement. A flare gun is also useful for danger or accident alerts. A red flare means emergency, and can trigger a rescue operation if it is observed and reported to the Governor.

The Governor recommends that the weapon is carried semi-loaded and with the safety mechanism off when moving around outside the built-up areas. Semi-loaded means that there is ammunition in the magazine clip, but not in the barrel. This prevents accidental discharges. Flare guns must not be loaded within the built-up areas.

The Governor recommends keeping someone on polar bear watch in tent camps, alternatively supplementing with tripwire and/or dogs trained to give warning of polar bears. Please be aware that not all dogs are able to warn you of polar bears.

A tripwire is a device with a wire stretched between a fixed point and the trigger mechanism of a piece of equipment (flare) that lights up and/or emits sounds. When the wire is touched, the trigger mechanism should be activated and the signal should go off. Polar bears have been known to get through these devices without triggering the tripwire. Assembling and installing a tripwire takes skill and experience, and tripwires can never completely replace an alert polar bear watch.

Test your weapons, flare guns and pyrotechnical aids before your trip.

1.

Put the cartridges into the magazine clip.



2.

Press the cartridges down as you drag the breechblock over.



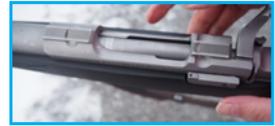
3.

Check that no cartridges are in the barrel.



4.

Push in the breechblock completely.



5.

Pull the trigger while holding the weapon in a safe direction so the weapon is not at full cock. The weapon is now semi-loaded.



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### Renting weapons and equipment

Some weapons, pyrotechnical aids (intimidation aids) and means of communication can be rented in Svalbard – but not everything. If you are planning to rent any equipment, you need to check this in advance. When you rent a weapon, it is assumed that you know how to use it. Each type has many different models. Refer to the Governor's website for information on weapon rental and permit applications.

*Tripwires can be used to protect tent camps, but there are several examples of polar bear attacks when this has not worked.*





Rifle and flare gun with ammunition.



Two different emergency beacons, satellite phone, VHF radio and InReach.



Map, compass and GPS.



Avalanche probe, metal snow shovel and sender/receiver for avalanches.



Ice claws and heaving line.



Equipment for rescue on glaciers

# EQUIPMENT

**Firearms**, .308 Win calibre rifle or higher.

**Intimidation aids for polar bears:** flare gun, thunder flashes etc.

**GPS**

**Map and compass**

**Emergency beacon**

**Other communication equipment** (satellite phone, VHF radio, InReach)

**Additional clothing adapted to the duration of the trip.** Wool, down and windproof clothing. All skin must be covered, including your face. NB: Extra mittens and hat

**Emergency rations**, hot drinks

**Rope for towing**, rescue, mooring, anchorage, splinting etc.

**Windbag;** the Jerven or the equivalent

**Sleeping bag adapted to the season**

**Ground sheet**, and a seating pad if required

**Tent** suitable for extreme weather conditions

**First aid equipment** adapted to the length of the trip

**Equipment for traffic and rescue on glaciers**

**Equipment for securing your camp from polar bear attacks**

**Matches** in a watertight container

**Burner and fuel** for heat and cooking

**Cooking vessels**

**Survival suit** (if travelling by open boat/smaller vessels)

## ADDITIONS FOR THE DARK SEASON AND WINTER CONDITIONS

**Sender/receiver for avalanches**

**Avalanche probe for searching in avalanches**

**Metal snow shovel**

**Head torch with extra batteries**

**Axe for checking the thickness of the ice**

**Ice claws**

**Heaving line**

**Candles**

**Extra fuel for snowmobiles**

**Reflective safety vest**

*Photo: Frede Lamo*



Photo: Lise Ottem

### Means of communication

There are limited communication possibilities in Svalbard. There is no mobile phone signal outside the local communities of Longyearbyen, Svea and Barentsburg. You are obligated to bring an emergency beacon on trips in Svalbard. The beacon can be switched on in the event of life-threatening danger and will trigger a rescue operation. An emergency beacon sends one signal to the joint rescue coordination centre via the satellites, and one that allows rescue helicopters to localise you in the event of bad weather/poor visibility. A satellite phone is a good mean of communication but is not a substitute for an emergency beacon.

When calling for help, you need to state who you are, GPS coordinates, the closest known location, number of people in the group, how many injured or ill as well as weather conditions.

The emergency telephone number for the Governor is **0047 79 02 12 22/112**. Please be reminded that you always need to dial the 0047 prefix first when calling from a satellite phone. VHF radio has limited coverage in Svalbard, but may come in handy as a means for internal communication and communication with rescue helicopters, planes or vessels. Remember to distribute the safety equipment among several people in the group!

### Means of navigation

The Svalbard map series uses a 1:100 000 map scale. This means that some terrain details will not be easy to spot on the map. The terrain also changes due to erosion, water flow and snow storms. Glaciers will advance or retreat and will often differ to the map. Compass deviations vary greatly in various areas of Svalbard, and must be checked before you set off.

Some of the sea charts may be inaccurate, especially due to changes (glacier fronts) that have occurred, and a lack of surveys. The GPS is a very useful aid, but all technical devices can fail, so make sure you always bring a map and compass as well.

### Notification routines

The population density in Svalbard is low, and you can find yourself going days without seeing other people, even close to the built-up areas. As mentioned, the communication possibilities are limited. This means that you need to make sure someone knows where you are going, how long you plan to be away, any alternative routes you might take and what sort of equipment you have.

You should make a binding agreement with someone so that you will be reported missing if you do not return by the agreed time. People are not recommended to move around the Svalbard terrain



The police carry out regular blood-alcohol checks on snowmobile riders.

Photo: Ståle Nylund

by themselves.

If you are visiting a cabin, it is always a good idea to write your time of departure, route going forward and your destination in the cabin guest book.

### Laws and regulations

Svalbard is a part of the Kingdom of Norway and, in most cases, the same laws and regulations apply here as on the mainland. The speed limit for snowmobiles in the terrain is 80 km/h. The speed limit along the riverbed in Longyearbyen is 50 km/h. In all other areas of Longyearbyen, Barentsburg, Pyramiden and Ny-Ålesund, both on and off road, the speed limit for snowmobiles is a maximum of 30 km/h.

The regulations for blood-alcohol limit when riding a snowmobile are the same as for cars (0.2 ‰). The police carry out regular blood-alcohol checks on snowmobile riders, both in the built-up areas and in the field. Wearing a helmet when riding a snowmobile is required by law. In order to legally ride a snowmobile, you need to be able to provide a valid driver's license.

There are several laws and regulations with the purpose of protecting the environment and cultural heritage of Svalbard. Motorised traffic (snowmobiles) in the terrain is governed by a separate regulation. The same applies to camping, hunting, fishing, tourism etc. Acquaint yourself with the rules and regulations before your trip. The Governor of Svalbard can provide you with more information.

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### Frostbite

Frostbite can occur very suddenly. Your face, fingers and toes are the most vulnerable to frostbite. The initial stages of frostbite will give you a feeling of numbness or a stabbing cold feeling in your skin. The pain disappears when frostbite has set in. The skin turns white (white spots). Frostbite is treated by carefully heating up the frostbitten area. Left untreated, a superficial frostbite can develop into a more serious injury. Act immediately if you feel or see symptoms of frostbite, and check each other for white spots.



Photo: Lise Ottem

# EN ROUTE

## Weather conditions

The greatest challenge in Svalbard may be the at times extreme and changing weather conditions. Svalbard is located in a zone where cold air from the north and hot air from the south meet. This means that the weather can change very suddenly. In the summer, this can cause a thick fog. In addition to white-outs, intense cold combined with wind is very challenging in the winter. The apparent temperature (felt air temperature) can be much lower than what the thermometer tells you (see the table).

The average temperature during the summer is approx. 5 degrees. In the winter, temperatures can fall to minus 30 degrees. Weather conditions may cause delays and equipment malfunction. This means that you have to plan your trip with generous time margins.

## White-out and flat light

Light and weather conditions can keep you from being able to distinguish topographical features in the terrain or the transition between land, sea and sky. You lose all visibility and further travel is obstructed. White-outs occur when it is intensely cloudy and snowy, or when strong winds whirl up snow from the ground (snow flurries).

		Air temperature											
		5 <sup>o</sup>	0 <sup>o</sup>	-5 <sup>o</sup>	-10 <sup>o</sup>	-15 <sup>o</sup>	-20 <sup>o</sup>	-25 <sup>o</sup>	-30 <sup>o</sup>	-35 <sup>o</sup>	-40 <sup>o</sup>	-45 <sup>o</sup>	-50 <sup>o</sup>
Wind force (Beaufort)		Index											
Light air to light breeze	1,5	4 <sup>o</sup>	-2 <sup>o</sup>	-7 <sup>o</sup>	-13 <sup>o</sup>	-19 <sup>o</sup>	-24 <sup>o</sup>	-30 <sup>o</sup>	-36 <sup>o</sup>	-41 <sup>o</sup>	-47 <sup>o</sup>	-53 <sup>o</sup>	-58 <sup>o</sup>
	3	3 <sup>o</sup>	-3 <sup>o</sup>	-9 <sup>o</sup>	-15 <sup>o</sup>	-21 <sup>o</sup>	-27 <sup>o</sup>	-33 <sup>o</sup>	-39 <sup>o</sup>	-45 <sup>o</sup>	-51 <sup>o</sup>	-57 <sup>o</sup>	-63 <sup>o</sup>
Gentle to moderate breeze	4,5	2 <sup>o</sup>	-4 <sup>o</sup>	-11 <sup>o</sup>	-17 <sup>o</sup>	-23 <sup>o</sup>	-29 <sup>o</sup>	-35 <sup>o</sup>	-41 <sup>o</sup>	-48 <sup>o</sup>	-54 <sup>o</sup>	-60 <sup>o</sup>	-66 <sup>o</sup>
	6	1 <sup>o</sup>	-5 <sup>o</sup>	-12 <sup>o</sup>	-18 <sup>o</sup>	-24 <sup>o</sup>	-31 <sup>o</sup>	-37 <sup>o</sup>	-43 <sup>o</sup>	-49 <sup>o</sup>	-56 <sup>o</sup>	-62 <sup>o</sup>	-68 <sup>o</sup>
Moderate to fresh breeze	7,5	1 <sup>o</sup>	-6 <sup>o</sup>	-12 <sup>o</sup>	-19 <sup>o</sup>	-25 <sup>o</sup>	-32 <sup>o</sup>	-38 <sup>o</sup>	-45 <sup>o</sup>	-51 <sup>o</sup>	-57 <sup>o</sup>	-64 <sup>o</sup>	-68 <sup>o</sup>
	9	0 <sup>o</sup>	-7 <sup>o</sup>	-13 <sup>o</sup>	-20 <sup>o</sup>	-26 <sup>o</sup>	-33 <sup>o</sup>	-39 <sup>o</sup>	-46 <sup>o</sup>	-52 <sup>o</sup>	-59 <sup>o</sup>	-65 <sup>o</sup>	-72 <sup>o</sup>
Fresh breeze	11	0 <sup>o</sup>	-7 <sup>o</sup>	-14 <sup>o</sup>	-21 <sup>o</sup>	-27 <sup>o</sup>	-34 <sup>o</sup>	-40 <sup>o</sup>	-47 <sup>o</sup>	-53 <sup>o</sup>	-60 <sup>o</sup>	-66 <sup>o</sup>	-73 <sup>o</sup>
Strong breeze	12	-1 <sup>o</sup>	-7 <sup>o</sup>	-14 <sup>o</sup>	-21 <sup>o</sup>	-27 <sup>o</sup>	-34 <sup>o</sup>	-41 <sup>o</sup>	-48 <sup>o</sup>	-54 <sup>o</sup>	-61 <sup>o</sup>	-68 <sup>o</sup>	-74 <sup>o</sup>
	14	-1 <sup>o</sup>	-8 <sup>o</sup>	-15 <sup>o</sup>	-21 <sup>o</sup>	-28 <sup>o</sup>	-35 <sup>o</sup>	-42 <sup>o</sup>	-48 <sup>o</sup>	-55 <sup>o</sup>	-62 <sup>o</sup>	-69 <sup>o</sup>	-75 <sup>o</sup>
Near gale	15	-1 <sup>o</sup>	-8 <sup>o</sup>	-15 <sup>o</sup>	-22 <sup>o</sup>	-29 <sup>o</sup>	-35 <sup>o</sup>	-42 <sup>o</sup>	-49 <sup>o</sup>	-56 <sup>o</sup>	-63 <sup>o</sup>	-70 <sup>o</sup>	-76 <sup>o</sup>
	17	-2 <sup>o</sup>	-9 <sup>o</sup>	-15 <sup>o</sup>	-22 <sup>o</sup>	-29 <sup>o</sup>	-36 <sup>o</sup>	-43 <sup>o</sup>	-50 <sup>o</sup>	-57 <sup>o</sup>	-63 <sup>o</sup>	-70 <sup>o</sup>	77 <sup>o</sup>
Gale	18	-2 <sup>o</sup>	-9 <sup>o</sup>	-16 <sup>o</sup>	-23 <sup>o</sup>	-30 <sup>o</sup>	-37 <sup>o</sup>	-43 <sup>o</sup>	-50 <sup>o</sup>	-57 <sup>o</sup>	-64 <sup>o</sup>	-71 <sup>o</sup>	-78 <sup>o</sup>
	20	-2 <sup>o</sup>	-9 <sup>o</sup>	-16 <sup>o</sup>	-23 <sup>o</sup>	-30 <sup>o</sup>	-37 <sup>o</sup>	-44 <sup>o</sup>	-51 <sup>o</sup>	-58 <sup>o</sup>	-65 <sup>o</sup>	-72 <sup>o</sup>	-79 <sup>o</sup>
	21	-2 <sup>o</sup>	-9 <sup>o</sup>	-16 <sup>o</sup>	-23 <sup>o</sup>	-30 <sup>o</sup>	-37 <sup>o</sup>	-44 <sup>o</sup>	-51 <sup>o</sup>	-59 <sup>o</sup>	-66 <sup>o</sup>	-73 <sup>o</sup>	-80 <sup>o</sup>
Strong/severe gale	23	-3 <sup>o</sup>	-10 <sup>o</sup>	-17 <sup>o</sup>	-24 <sup>o</sup>	-31 <sup>o</sup>	-38 <sup>o</sup>	-45 <sup>o</sup>	-52 <sup>o</sup>	-59 <sup>o</sup>	-66 <sup>o</sup>	-73 <sup>o</sup>	-80 <sup>o</sup>
	24	-3 <sup>o</sup>	-10 <sup>o</sup>	-17 <sup>o</sup>	-24 <sup>o</sup>	-31 <sup>o</sup>	-38 <sup>o</sup>	-45 <sup>o</sup>	-52 <sup>o</sup>	-60 <sup>o</sup>	-67 <sup>o</sup>	-74 <sup>o</sup>	-81 <sup>o</sup>



Photo: Ståle Nylund

## Rivers and valleys

Svalbard has many water-bearing valleys. The permafrost keeps the water from draining deep down into the ground, causing it to spread all over the valley and create a river delta. This in turn causes the soil to dissolve, making passage difficult. The water turns brown, making it impossible to tell how deep the river is. The water flow in all rivers and streams may vary drastically within 24 hours. This is due to varying amounts of melting snow and deglaciation from the glaciers. Open water in the terrain can also occur in the winter, even in harsh cold. This usually occurs in front of glacier fronts or close to pingos. Sign of open water in the winter may include local stratus clouds over an area or colour differences in the snow.

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## Pingo

A pingo is a tall mound of gravel-covered ice created by water being pushed up through a weak layer in the permafrost. The water pushes loose soil up and forms a mound. Pingos can be up to 40 meters tall.

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## Permafrost

The ground in Svalbard is permanently frozen (permafrost). Only the top layer (approx. 1 meter) defrosts in the summer. This prevents water from running further down into the ground, and can cause a very wet terrain.



### The mountains

The mountains in the central parts of Svalbard consist of rapidly disintegrating sedimentary rock. Due to the loose rock, the mountains in Svalbard are unsuited for mountain climbing. When hiking in the mountains in Svalbard, you need to be prepared for loose and slippery stones. Disintegration causes loose soil and rocks to continuously roll down the mountain sides. People are therefore recommended not to travel and camp close to the mountain sides.

### The waters

The waters surrounding Svalbard are full of shallow areas with skerries, drift ice and glacier fronts that meet the fjord bed. Disembarkation can also be

difficult because of mountain sides plummeting straight down into the water. Early in the season, ice dunes may obstruct disembarkation. The temperature in the water is usually between 0 and 7 degrees in the summer. Drift timber of various sizes float around on the surface. Drift ice, sometimes in large quantities, is common in Svalbard in the summer. Belts of drift ice move quickly, and can block movements by boat within a short space of time.

Small ice bergs formed by calving from the glaciers are also common in the fjords. Ice bergs only hold 1/9 of their mass above water and can be very unstable. Ice bergs breaking or flipping over can cause waves, putting small boats close by at risk. It may be tempting to get close to glacier fronts that

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### Calving

There are many glaciers with precipitous fronts that are tens of meters tall and plummet straight into the sea. These glaciers are constantly on the move, and calve both in the summer and winter. Calving causes large tidal waves, and you can get hit by ice that is flung out from the waves. This is why keeping your distance is crucial.

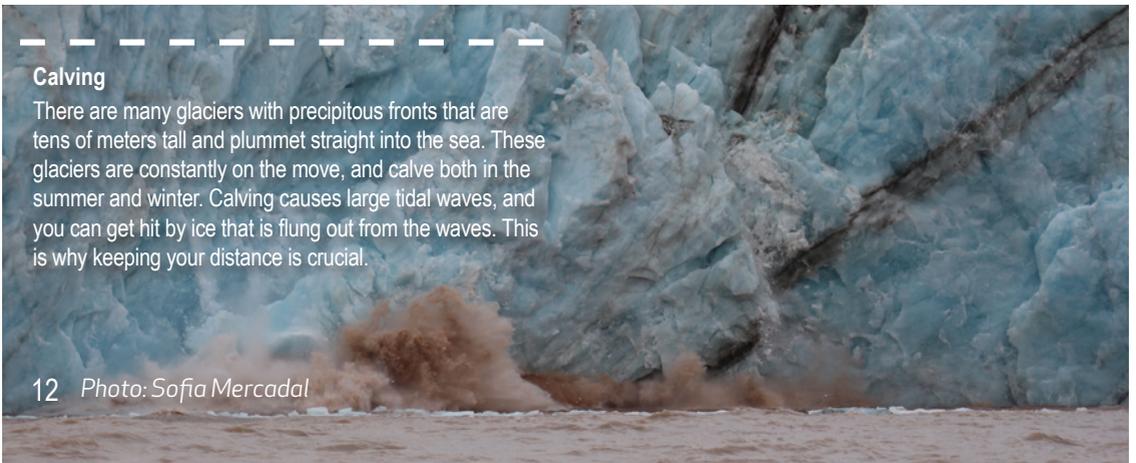




Photo: Tone Hertzberg

plummet into the fjord. This is dangerous however, as the glaciers calve and serious damage can be caused by falling ice or tidal waves. You should therefore keep at a distance of several hundred meters from all glacier fronts.

Glaciers can calve on land and calving can also occur in the winter, causing large cracks and tidal waves in the ice.

Refer to the Governor's website and/or the Norwegian Polar Institute for up-to-date information on necessary distance to glacier fronts. Please be aware that the tidal range in Svalbard can be up to two meters.

Both polar bears and walrus can cause significant problems for small vessels such as kayaks and rubber boats. These conditions, combined with ever changing weather conditions with strong winds or fog pose a significant challenge for those travelling in small vessels.

You should always wear a survival suit in open boats and small vessels, as the water is very cold.

### **The glaciers**

Approx. 60 per cent of Svalbard is covered by ice. Traffic on glaciers requires specific skills and knowledge, as well as suitable equipment. All glaciers have crevasses and channels of melted water that are covered by snow bridges almost all year round. Crevasses and other openings in the glacier are very difficult to spot.

The largest crevasses are usually found by the glacier front, in areas with icefall and where the terrain under the glacier is uneven. You will also find crevasses between glacier and mountain, and where glaciers meet. Glaciers are not necessarily flat, and they may contain some very steep and slippery areas.

Please be aware of surging glaciers – there are many of these in Svalbard (see frame).

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### **Ice dunes**

When temperatures are low, water washing up on the beaches will freeze. The ice gradually builds up to form a ridge that can be several meters tall, preventing disembarkation.

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### **Icefalls and surging glaciers**

Icefalls are very steep parts of the glacier. The ice will usually crack due to high speeds and tensions in these areas. "Surging" means that a glacier advances substantially, moving at relatively high speeds. This also causes the ice to crack.

Avoid riding snowmobiles over a glacier that no one in your group is properly familiar with. If stopping on a glacier, check the area with an avalanche probe before stepping off the snowmobile or dog sledge. The same should be done before you take your skis off and set up your tent. Always keep an avalanche probe and rope close by. Forming a rope team is common practice when travelling by skis or on foot on a glacier. Proper reference points for navigation may be hard to come by on glaciers, and white-outs occur more frequently in large glacier areas. In bad weather, you can lose all visibility. Glacier travel under these conditions is very dangerous. It is important to be aware that glaciers are constantly changing, and crevasses and channels of melted water will open and close. A route across a glacier does not necessarily remain safe from one year to the next.

### **Sea ice and ice on water**

Both the sea and lakes can be covered by ice for large parts of the year. The sea ice is usually weaker, but more elastic than fresh water ice. The spread and thickness of the sea ice varies in the different areas from one year to another. Please be aware that the thickness will also vary within each area, and can change very suddenly. Banks, strong currents, gas emissions from the seabed, glacier fronts in motion, weather changes, headland and islands cause thin ice or holes in the ice. Studying charts of the area may help you understand how the ice can vary. Some areas will have temporary surface water. In the spring, the ice is also broken up from underneath due to warm sea currents coming in from the fjords. If you set out onto sea ice, try to gain perspective from a higher point. Look for holes or colour changes in the ice or in the snow covering the ice. Measure the thickness before setting out, and keep measuring frequently along the way. If you are travelling by snowmobile and you are uncertain about the thickness of the ice, or if you come in to an area with thin ice, it is important to keep the speed up and drive out of the area – do not stop. Ice claws are important equipment when travelling on sea ice, as you might need to climb



up out of a hole in the ice. A long rope is also important, both for rescuing people and equipment. Watertight, vacuum packed 'passenger suits' can be worn over your snowmobile suit.

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### **Surface water**

Surface water is water on the surface of the ice formed by water running out onto the ice from rivers or glaciers, or by the ice being pushed down by the weight of the snow so that sea water is pushed up onto the surface.

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## ASSA:

Always Sender/receiver, Shovel and Avalanche probe

### Snow and avalanche risk

Svalbard is exposed for much wind and snow is transported on the wind. Certain areas can therefore get large amounts of snow. There may be incidents of local heavy snowfalls. These conditions, combined with brief substantial temperature variations and strong winds will at times cause significant avalanche risk. Several of the popular routes from Longyearbyen run through areas of significant avalanche danger under such conditions. Be especially wary after periods of snowfall, wind and large temperature variations.

Avoid steep mountain sides with large amounts of snow, narrow valleys and mountain sides with overhanging snow drifts.

Be especially cautious during the polar night, as the avalanche risk is difficult to assess.

Always remember to bring a sender/receiver, shovel and an avalanche probe (ASSA). Even relatively small avalanches can be fatal.

### The fauna

Polar bears live all over the archipelago and you can run into one anywhere, all year round. The polar bear is one of the world's largest predators, and is dangerous to humans. You are required by law to bring your own intimidation aids when moving around outside the built-up areas. You also need firearms; a .308 Win calibre rifle or higher. You need to know how to use both your intimidation measures and weapon.

### The most important thing is to avoid situations with polar bears that may turn out to be critical for you or the polar bear.

The best way to experience polar bears is by studying the bear when it is undisturbed, at long range with binoculars. It is prohibited to seek out, stalk or disturb polar bears. Always keep at a safe distance from polar bears, both on land and at sea. They are good swimmers and can run up to 8 meters per second (more than 30 km/h) over short distances. Please be aware that polar bears can destroy equipment such as kayaks, rubber boats and tents.

### If you run into a polar bear, you should react as follows:

1. If you see a polar bear, you must not under any circumstances approach the animal.
2. If the polar bear follows you and you have no way of escaping, you need to try to scare it off. Keep the group together and make as much noise as possible. Act confident, and use the intimidation measures you have. Start using intimidation measures from a distance of at least 200 meters. Make sure you place flares in front of a polar bear that is heading towards you.
3. If the polar bear is not frightened off, and the situation escalates in such a way that it may be fatal, you need to prepare for putting the animal down.
4. Select a point or line in the terrain and decide to fire if the bear crosses this point. You should aim for vital areas such as the heart or lungs (shoulder) if possible. Keep firing until you are certain that the animal is dead.

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### Polar bears in Svalbard

Polar bears are unconditionally protected. The polar bear spends most of its life on sea ice and in the sea, but can also be encountered all over the archipelago, all year round. Adult males usually weigh in at about 300-600 kilos, with females up to about half of that. The polar bear feeds mainly on seals that it catches on the ice.



The polar bear is a protected animal, and can only be killed in an emergency situation if there is no other way to save human life or prevent injuries. If you have killed or shot at a polar bear, you must immediately report the incident to the Governor. There will always be an investigation after a polar bear has been killed or fired at.

**Rabies** exists in Svalbard, so dead animals must not be touched. Avoid animals that are acting strangely, are especially aggressive, social or show signs of disease. Such animals must be reported to the Governor.

The **walrus** population is steadily increasing, and you can encounter the animal all along the coast of Svalbard. The walrus can be aggressive, and may pose a threat to small vessels such as kayaks and rubber boats. Make sure you keep at a safe distance, both on land and at sea.

### Mouse parasites

Mouse parasites have been found in Svalbard, and can be transferred to humans. In order to avoid infection, always boil water you fetch around cabin areas and current or previous settlements. Wash your hands thoroughly before meals.

### Setting up camp

Choosing the right camp site is important for many reasons. Setting up camp or lighting a camp fire closer than 100 meters from protected cultural monuments and cabins is prohibited, and you need to stay away from vegetation if possible. Camp fires should preferably be lit along the shoreline, and not on soil or vegetation.

Polar bears will often move around on the ice or along the shoreline. Tents or other alien objects in the terrain will make polar bears curious. Choose a camp site with sufficient view around you, and at a long distance to the sea.

We recommend keeping someone on polar bear watch, alternatively supplementing with tripwire and/or dogs that give warning of bears. Please be aware that not all dogs will warn you if a polar bear is approaching. There are also several types of tripwire, but correct use is essential for them to be of any use at all. If you do not plan to use any other watch system, two levels of wire or a double set of tripwires at different distances from the tent should be considered. Tripwires will never completely replace an alert polar bear watch. Polar bears have been known to get through these devices without triggering the tripwire, which proves that correct and careful installation is crucial.

Always keep intimidation measures and weapons to hand in the camp.

If possible, do not cook food in the tent. The smell of food can stick to the tent canvas and attract polar bears. Store food and keep the latrine at a distance from the camp, but make sure you are able to keep an eye on both the food preparation area and latrine area from your tent.

Make sure you consider falling rocks and avalanches when choosing your camp site. You should also take into consideration the local weather conditions, such as accumulation of snow behind steep ridges or strong winds through valleys. Always check glacier areas for crevasses, and indicate the safe area before you set up camp on a glacier. Before moving on, make sure you clear up the camp site leaving no lasting signs of your stay, out of consideration for other travellers. Fill up the cold pit and tear down walls of snow.

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### Mouse parasite

The eastern field mouse in Svalbard is an intermediate host for the tapeworm *echinococcus multilocularis*. The main hosts of the parasite are dogs, cats and foxes. Humans can suffer serious liver damage and death if they ingest the eggs of the parasite. These eggs are found in the faeces of the main hosts.



*Food stored in a tent can attract polar bears.*



*Photo: Ståle Nylund*

### **Travelling by snowmobile.**

You need a driver's license to operate a snowmobile, and you are required by law to wear a helmet. Snowmobile riding causes many accidents. Although the vehicle seems relatively easy to operate on flat terrain, it can be difficult to manoeuvre at high speeds and in uneven and sloping terrain. The snowmobile can take you very far in a short space of time. When you have ridden a snowmobile for one hour, you will have at least a day's walk back to your starting point. Always be prepared for the snowmobile to break down, and never ride out alone. Local knowledge of the terrain you are travelling in, spare parts and emergency equipment (refer to list on page 7) are crucial on all trips. The ever changing weather and terrain in Svalbard are the biggest challenges for snowmobile riders. Be aware that flat-light, white-outs, fog, bad weather and icy goggles/visor can make it very difficult to see terrain details. Due to the weather, the terrain

changes character throughout the season. GPS tracks are therefore perishable. You cannot trust them blindly, especially if you have not driven them yourself. GPS tracks are not 100 per cent accurate either.

Wind holes are created by the wind, and snowdrifts drift over the tracks. Valleys made by streams can also be very difficult to spot, and can therefore cause accidents. Many snowmobile accidents are caused by the riders pushing the limits for what they can handle and lacking the necessary equipment and knowledge. If the weather and visibility are so bad that you cannot see where you are going – stop and wait for the conditions to improve. You need to bring the necessary equipment to be able to set up an emergency camp and wait. Always plan your trip and pack your equipment keeping in mind that you may end up being delayed several days.



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### **Wind holes**

A wind hole is a hole in the snow that has been created by the wind, and is usually found next to large rocks or other elements in the terrain. They can occur in new places depending on the direction of the wind and snow conditions, and they are often hard to see.

*Photo: Arild Lyssand.*



Photo: Ståle Nylund

## IF SOMETHING GOES WRONG

### Notify

Make sure you have brought the necessary means of communication to be able to report accidents. The emergency beacon should be brought along on all longer excursions, and can be used in life-threatening situations.

Make sure you provide your correct position when you report by satellite telephone or VHF.

This information is crucial in order for the Governor's rescue services to be able to get to the location quickly, which in turn increases the possibility of saving lives.

If you are merely behind schedule and able to let someone know, e.g. by using a satellite phone: Do so, even if you do not need assistance. Someone at home may get worried and notify the rescue services without it being necessary. You should therefore call someone you know or the Governor and let them know you are delayed.

The Governor's duty number when calling from a satellite phone is 0047 79 02 12 22. Remember to dial the 0047 prefix before the telephone number. You can only call 112 from a mobile phone.

### Take care of yourself

Make sure you and your excursion companions have first aid knowledge and have brought sufficient first aid equipment. It can take a long time for help to arrive, as challenging weather conditions may heavily delay rescue services. Correct emergency equipment and your knowledge and experience with first aid may be crucial. Do not hesitate to entrench yourself in the snow or set up an emergency camp.

*Bring the necessary equipment to set up an emergency camp.*

*Photo: Trond Berg*



## SAFETY IN THE BUILT-UP AREAS

### Rescue service

The Governor of Svalbard is in charge of the local rescue service on the archipelago. The Governor has a ship, helicopters, tracked vehicles, snowmobiles and other vessels at their disposal for this purpose. The Longyearbyen Red Cross Emergency Service (Longyearbyen Røde Kors Hjelpekorps) and other organisations are also important parts of the rescue service. Svalbard has good rescue equipment and skilled manpower to put into rescue operations, but there are some limitations. The area is very large, and it is often characterised by extreme conditions. You might get into a situation that makes rescue either impossible or very difficult.

***You must do everything in your power to avoid situations that may trigger rescue operations.***

**Remember that your safety is your responsibility.**

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**How to report an accident to the rescue services on tel. 0047 79 02 12 22/112:**

Who are you?

Where are you? GPS position and place name

What has happened? How many are injured? How many are there in the group?

If you have brought a dog, remember to mention this!

What type of equipment do you have?

What is the weather like?

### Road safety

There are a relatively large number of vehicles in the built-up areas in Svalbard.

During the dark season with bad visibility and slippery roads, it is important to use reflectors. Bicycle lights are also necessary. As a driver in Longyearbyen, you need to be especially wary of pedestrians. Longyearbyen is a small town, but there can be activity here 24 hours a day, and both animals and people travel along all roads. Please be especially aware that there are many children in Longyearbyen. There are sledging slopes, ski slopes, nursery schools and schools close to the roads.

Snowmobile riders are required to take special care as the snowmobile can be difficult to manoeuvre when crossing roads or travelling along them. Snowmobile riders are obligated to give right of way to all other vehicles and pedestrians.

### Polar bears in the built-up areas

Polar bears will from time to time be observed in the local communities. This must be taken into consideration, especially during the dark season when visibility is limited. The Governor must be notified immediately of any polar bears sightings in or around the built-up areas.

**Be humble towards the forces of nature in Svalbard. Take responsibility for your own safety.**

Have a nice and safe stay!



*Polar bears can from time to time be observed in the built-up areas. This is a photo of polar bear tracks near the houses in Longyearbyen.*

# MORE INFORMATION

## **The Governor of Svalbard (Sysselmannen)**

Administration of Svalbard, information on laws and regulations, notification routines and insurance requirements for trips outside Management Area 10. Head of local rescue services and Chief of Police. Website: [www.sysselmannen.no](http://www.sysselmannen.no)  
Email: [firmapost@sysselmannen.no](mailto:firmapost@sysselmannen.no)  
Telephone: 79 02 43 00

Police officer on duty: 79 02 12 22. If you call from a satellite phone, remember to dial 0047 before this number. Emergency number: 112. Does not work from satellite telephones.

## **The University Centre in Svalbard (UNIS)**

Research and education in Svalbard. For questions on field safety in Svalbard. Website: [www.unis.no](http://www.unis.no)  
Email: [post@unis.no](mailto:post@unis.no)  
Telephone: 79 02 33 00

## **The Norwegian Polar Institute**

Consultative body for the management of Svalbard. Information about the environment and information for researchers. Maps and handbooks. Website: [www.npolar.no](http://www.npolar.no)  
Email: [post@npolar.no](mailto:post@npolar.no)  
Telephone: 79 02 26 00

## **Visit Svalbard**

Tourist information, information about various guided tours and other activities. Website: [www.visitsvalbard.com](http://www.visitsvalbard.com)  
Email: [info@visitsvalbard.com](mailto:info@visitsvalbard.com)  
Telephone: 79 02 55 50

## **Longyearbyen Red Cross**

**Emergency Service**  
Volunteer emergency patrol. The glacier and avalanche group participates in rescue operations led by the Governor. Website: [www.lrk.no](http://www.lrk.no)  
Email: [koordinator@lrk.no](mailto:koordinator@lrk.no)  
Telephone: 79 02 12 88

## **Weather and ice conditions**

[www.yr.no](http://www.yr.no)  
[www.met.no](http://www.met.no)

## **Avalanche forecasts**

[www.varsom.no](http://www.varsom.no)



**THE GOVERNOR  
OF SVALBARD**

Longyearbyen 2019

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