



IW Training

THE (POLAR) BEAR NECESSITIES

It is very important that every member of a team is aware of how to act and react in the presence of such a dangerous animal. The notes below are intended to prepare the team for polar bear encounters of any type.

Curious Bears

If a bear knows you are there and shows signs of being curious such as moving slowly with frequent stops, standing on hind legs and sniffing the air, holding its head high with ears forward or to the side, moving its head from side to side, or trying to catch your scent by circling downwind and approaching from behind, back away slowly. Help the bear identify you as human by talking in low tones. Move slowly, upwind of the bear so that it can get your scent. Always leave an escape route for the bear. Do not run.

Defensive Bears

If a bear has been surprised at close range or shows signs of being agitated or threatened such as huffing, panting, hissing, growling, jaw-snapping, stomping its feet, staring directly at a person, or lowering its head with ears laid back, back away slowly. Do not shout or make sudden movements. Avoid direct eye contact. Act non-threatening. Be prepared to use deterrents. Do not run.

Predatory Bears

If a bear shows signs of stalking or hunting you such as: following or circling you, approaching directly, intently and unafraid, returning after being scared away, or appears wounded, old or thin, group together and make loud noises. Be prepared to use deterrents. Be prepared to fight back. Do not run.

Bears with Cubs

Never get between a bear and her cubs. If you come across a bear with cubs, do not run. Group together and leave the area immediately. Be prepared to fight back if the bear attacks. If you experience a polar bear attack use any available weapon such as rocks, blocks of ice, knives, skis or poles.

1. PROBLEMATIC HUMAN-BEAR CONFLICTS can arise when a bear is:

- Surprised by the approach of a person
- Attracted to a camp by odours from improper storage of food or disposal of garbage
- Attracted to humans because it has learned from experience to associate people with food
- Is in poor physical condition and searching for any available food

2. THE POLAR BEAR

i Size:

Adult male – may weigh over 700 kg and reach a height of more than 1 metre at the shoulder.

Adult female – averaging closer to 300 kg.

ii Mobility:

They can travel several hundred kilometres in a few days. They can run short distances at up to 30-40 km/h. They can move easily over rough ice or steep slopes. They can swim at about 10 km/h, dive to depths of several metres and stay underwater for up to two minutes. They have been sighted in open water many kilometres from shore.

iii Senses:

Sense of smell can lead it to a food source many kilometres away. Eyesight is equal to a human's.

iv Diet:

Mainly meat – seal, however any animal is potential prey. Also attracted to many of the goods which humans carry such as rope, rubber, plastic, canvas, oil and garbage.

v Location:

Live mainly on sea ice. Most abundant in areas of unstable active ice. They travel continuously (except denning females), the availability of food, in particular seals, and ice condition will give some areas seasonal importance. From late fall until early summer they are found most often along floe edges and in areas of broken unstable ice in search of seals. Females give birth in dens between November and January. These dens are usually located in deep snow drifts, on slopes, riverbanks or stream banks which have drifted over. They are often on land near the coast, but can be many kilometres inland. In March to April the cubs follow their mother to the sea ice where they usually hunt for seal pups in their birth lairs on landfast ice along the coast. Mating takes place on the sea ice between late March and early June.

3. POLAR BEAR BEHAVIOUR

Individual bears are as unique as individual people. The following are generalisations only.

i Reactions to human encounters:

A bear may flee, charge or remain and try to pick up your scent.

ii Curiosity:

Bears are curious, not just about food. It is natural for bears to approach manipulate any new objects in *their* environment. They often respond to a new object by approaching it, smelling it, holding it with their front paws and chewing it. A curious bear may approach you and try to pick up your scent by sniffing the air and moving its head from side to side, sometimes while standing on its hind legs. The bear may circle and approach from downwind to try and more effectively catch your scent. Curious bears do not usually vocalise. Bears often leave once they have identified a human, either visually or by scent.

iii Threat displays (bear seeing you as a threat):

The most common signs of an agitated polar bear are:

- loud huffing or blowing sounds, snarling or hissing
- staring directly at you
- lowering its head below its shoulder level with the ears laid back
- moving the head up and down, or swaying it back and forth

Polar bears rarely exhibit threat displays or bluff charge before attacking people. Bluff charges are usually initiated by subadults or females with cubs.

iv Predatory behaviour:

In a few rare cases bears have considered humans to be prey and stalked or attacked them. A hunting bear will not bother with displays and thus a predating bear is unlikely to give any warning. The bear will not show any fear but an intense interest in you. Polar bears are usually silent but may give a sudden puff of air just before an attack. The bear may make a direct approach, sometimes at a run or fast walk, follow you, or circle carefully, making cautious approaches. Note however, that young bears often approach and circle out of curiosity.

v Factors influencing bear's reaction:

Your behaviour – running or making sudden movements may cause the bear to attack. Slowly backing away or standing your ground, depending on the situation is more likely to result in the bear leaving.

The bear's physical condition – a bear in poor physical condition i.e. wounded or very old, which is starving, is more likely to aggressively seek food from humans than one in good physical condition.

Special circumstances – sub-adult bears are often driven from the best feeding grounds by more dominant bears and must therefore travel long distances in search of food. Adult males may be more aggressive during breeding season (spring and early summer) particularly if they are with a female.

Bear's previous experience with people – any bear which has eaten human food or garbage and become accustomed to people is dangerous. These bears have learned to associate people with food. A bear which has encountered people, but has never fed on people's food, may be less aggressive or indifferent during a people-bear encounter.

Bear's perception of threat – a bear actively defends an individual space, its cubs and its food, its natural tendency to remove a threat to the above is to scare it off with displays or an attack.

Individual space – each bear has a different individual space, it may be a few metres or a hundred metres. If a human-bear encounter occurs outside of the individual space then the bear may leave without threatening. If an encounter occurs within the bear's minimum distance, the bear is likely to respond with threat displays and possibly an attack. This is a defence reaction and a bear's reaction to a surprise encounter at close range depends on the extent and suddenness of your intrusion, whether the bear has an escape route or feels cornered, and whether the bear is defending food or cubs.

Defence of cubs – females are aggressive in their defence of their cubs. If a female with cubs is disturbed at close range she is more likely to attack than flee.

Defence of food – bears are aggressive in the defence of their food.

Provoked attacks – provoked attacks by polar bears are rare, most will retreat if injured during a people-bear encounter.

vi Problem bear:

A bear that has lost its fear of people and defies them in attempts to gain food. They occur when bears associate people with food or that people are not a threat. Infrequent rewards of food from humans or human sources are enough to encourage a bear to keep returning. The bear will become bold as it loses its tendency to avoid people. If bears have frequent contact with humans which does not relate with unpleasant experiences such as fear or pain, they will learn that there is no reason to avoid people. Once this process has begun, it is difficult to reverse, the importance of preventing problem bears is of obvious importance.

Prevention can be maintained if:

- absolutely no food is made available to them at any time
- they are taught to associate human food sources with a painful or frightening experience

4. AVOIDING BEAR PROBLEMS

Bears are encountered by chance or because they are attracted to you.

i Precautions whilst travelling:

Know the areas and habitats bears use at different times of year. Watch for bear signs such as

- fresh tracks
- droppings
- animal carcasses – seal kills

Use binoculars in open terrain.

Travel in daylight.

Make noise where visibility is impaired (announcing presence may avoid a chance encounter), however be aware that making noise may raise a bear's curiosity.

Travel in large groups.

Do not take a pet dog – it may attract or aggravate a bear and run back to you with the bear in pursuit.

Avoid using strongly smelling products such as deodorants, cologne or perfume, they may attract bears.

There have been suggestions that odours associated with menstruation attract bears, this is controversial, however women should be cautious and minimise odours through careful personal hygiene and the use of tampons rather than external sanitary protection.

Carry deterrent devices and a firearm. Make sure you are familiar with them and they are easily accessible.

ii How to react to a bear encounter:

Every encounter is unique. The following are guidelines only and are based on good judgment, common sense and familiarity with bear behaviour.

iii General recommendations:

- Assess the situation and think about your surroundings before you act
- Try to remain calm

- Try to keep the bear in sight, even in open habitat a polar bear can hide
- When travelling in a group, remain close together
- Do not run, unless you can reach safety before the bear catches up, a bear is faster than you

iv Responding to a bear in camp:

- A bear is sighted at a distance, approaching camp – walk to the nearest safe shelter. Make sure everyone in the area is aware of the bear. Try to drive the bear away using an appropriate deterrent (having a firearm ready as a back up), if the bear continues to approach and time permits try a different deterrent. Fire waning shots. Give the bear a chance – it may leave after its curiosity is satisfied – shooting the bear should be considered a last resort.
- A bear is in camp – if no immediate danger, scare away with deterrents. If people are in immediate danger, shooting may be the only option. Flashing a strong light back and forth across a window rapidly may coax a polar bear out of an unoccupied cabin or building (or tent?) at night. The bear can then be deterred.

v Reacting to a chance encounter away from camp:

- Bear is unaware of you and feeding – If possible to do so undetected, leave the area. Move only when the bear's head is down, stop when it lifts its head to look around. Stay downwind. When you are a safe distance away, wait until the bear leaves or make a wide detour around. If not possible to leave undetected, let the bear sense you by smell first. Quietly move upwind. If possible, keep the bear in sight. The bear may leave when it smells a person nearby.
- Bear is unaware of you but approaching – give the bear right of way. Try to get out of the way without being noticed – if not possible announce presence by shouting. Bears should be able to determine that you are human by the time they are 100-150 metres away. Give the bear a chance to leave.
- Bear is aware of you, but distant – stay calm. Continue moving slowly but away from the bear. If bear follows, leave behind a hat or scarf to distract it and allow it to identify you as a person.
- Bear is aware of you and close – bear is likely to feel threatened, therefore act in non-threatening manner, particularly if adult or female with young. Do not make sudden movements and keep bear in sight without making direct eye contact. Help the bear identify you as a person – stay upwind if possible, talk in low tones and wave arms slowly. Give the bear opportunity to leave, make sure it has an open escape route. Back away slowly. Try to deter the bear if in a safe position. If bear is young and possibly curious, may be best to yell or in some way be more aggressive to drive it away.
- Bear is close and threatening – scare off with deterrent. If the deterrent is unsuccessful, act as non-threatening as possible. Talk in a calm but authoritative voice. No sudden movements. Do not imitate a bear's aggressive sounds, signals or postures. Back away slowly and drop hat or scarf to distract bear. Drop food only as a last resort. If bear is young and possibly curious, may be best to yell or in some way be more aggressive to drive it away.

- Bear is very close and approaching – if bear does not respond to deterrent, stand your ground. If unarmed – do not play dead unless bear charges and is close, standing will enable you to dodge an attack, distract the bear by dropping something or by flashing clothing and allow you to monitor a bear's actions. If you are armed and the bear continues to approach aggressively, be prepared to shoot – once the bear is within 20m you will have little time to act should a bear charge.
- Bear charges – they charge at high speed on four legs, often crouched low to the ground, they do not charge on their hind legs. If a polar bear charges, shoot to kill. Bluff charges are rarely observed in polar bears, they occasionally stand on their hind legs before initiating a charge.

vi Shooting a bear:

When – personal decision made quickly. Experts recommend waiting until the bear is 20m and as close as 3-10m if using a 12 gauge shotgun.

Where – Kill should be clean and quick. First shot most important. Aim for the low neck if the bear is broadside. Low centre neck between the shoulders if the bear is facing you. Front shoulder area to knock the bear down and disable it. Avoid head shots as they often do not kill a bear. Do not stop to check results, if bear goes down, keep shooting vital areas until it is still, make sure it is dead.

A wounded bear is a dangerous bear. If you wound a bear it is your responsibility to find and kill it or report it to the nearest Renewable Resources office.

It is legal to shoot a bear to preserve a life, or to protect property. A kill must be a last resort and must be reported.

vii Playing dead:

May prevent serious attack if a surprise encounter brings on an attack and you are unable to kill the bear. This may reduce the threat you represent to the bear. If you appear harmless, the bear may leave, however playing dead too soon (i.e. before an attack is imminent) may lead a curious bear to approach and investigate rather than leave. Never play dead if the bear considers you prey.

Position – minimise exposure of vital organs, lie on side in a ball with legs drawn to chest and head buried in knees. Clasp hands behind neck with fingers interlocked. Use forearms and elbows to protect face. Keep legs together. Stay in position even if moved. Try not to resist or call out as it may intensify the attack. Look cautiously to ensure bear has left before moving.

viii Predating bear:

Never play dead, act aggressively and defend yourself with whatever means available. Appear dominant and frighten the bear – jump up and down, shout, wave arms, fight back, raise jacket or pack to make yourself look bigger.

Unarmed person presents little opposition to a bear, however fighting may frighten them into leaving or buy time for someone to assist. Fighting only applies to predating bears, not when surprising a bear at close range.

ix Responding to a bear attack:

If an attack, mauling or carrying off is occurring, other members of the party should not hesitate in using a deterrent or weapon. The risk of injury from a deterrent or misplaced shot is less, at this point, than the injury or possible death that could result from the bear attack.

If in a close group, do not scatter, panicked activity may increase a bear's perception of threat. Once a polar bear mauling has begun, the bear is extremely difficult to deter.

x Injuries:

Face and skull commonly receive injuries from bear attacks.

Be aware and have medical provision for injury caused by deterrent or firearm.

5. CAMP DESIGN AND MAINTENANCE

i General precautions:

Avoid the following areas:

- Bear feeding areas, the floe edge, leads, open water areas and heavily pressured near shore ice.
- Bear travel lanes and trails, along shorelines, points of land and pressure ridges on sea ice
- Den sites, especially known bear denning areas
- Summer retreats, coast lines and off-shore islands
- Locations with previous bear problems
- Locations where bear signs are evident
- Locations where loud sounds would drown out the sound of an approaching bear.

ii Camp layout, guidelines:

- Consider windows in tents to check for bears, heads out of tents may resemble bears sticking heads out of breathing holes.
- Fewer bigger tents are advantageous to numerous smaller ones. As surrounded bear may feel confused and charge.
- Place tents in a line or semi-circle, always providing the bear with a route of escape, this also provides safer use of deterrents or firearms.
- Toilets should be 50metres from, but in view of, sleeping quarters.
- Sleeping quarters should be upwind from toilets.

iii Food preparation and Storage:

- Minimise food waste
- Minimise food odours
- Use airtight containers
- Be aware that grease is especially attractive to bears
- Keep kit as free from food odours as possible
- Avoid hair picking up food odours
- Clean kitchen utensils/cutlery after use
- Synthetic materials, such as rubber, sleeping bags and motor oil are also bear attractants

iv Waste disposal:

- It is odours which must be minimised
- Toilet areas should be covered with lime.

6. BEAR DETECTION SYSTEMS FOR CAMPS

- Trip wire fence
- Microwave motion detection system
- Dogs
- Bear monitors
- Infra-red
- Conventional security system

7. BEAR DETERRENT METHODS

Two aims of deterrents, firstly to chase away bears in the short term and secondly to eliminate a bear's habit of visiting areas of human activity by having the bear associate such areas with an unpleasant experience. To emphasise this unpleasant experience, a deterrent should be used every time a bear enters human activity areas.

i Use of deterrents:

Must be governed by judgement and common sense. Each encounter is unique.

Guidelines:

- No deterrent is 100% effective
- Concentrate on avoiding situations where a deterrent is necessary
- Effort needed to deter bear is dependent on circumstances, e.g. a starving bear may not be easily scared off by any deterrent
- Some deterrents, especially noise makers, become less effective with repetition
- Deterrents must not make you overconfident in an encounter or complacent in avoiding bear problems.
- Training and practice are necessary to use deterrents safely and with confidence.
- Ensure a back-up weapon, preferably a partner with a back-up weapon for protection in case the deterrent fails.

ii Choice of deterrent:

- The best deterrent for each situation will depend upon:
- Its practicality, cost and availability
- The size and permanence of a camp
- Your training, experience and confidence in using the deterrent
- The type of bear encounters which you may face

- The behaviour of the bear
- The surrounding terrain

iii Methods for deterring bears:

Warning shots:

Effectiveness:

- Not all bears scared.
- Repeated use may decrease effectiveness.

Practicality:

- Practical for most situations where portable, short term deterrent is needed. Suitable for people travelling in bear country

Advantages:

- Readily available. Easy to use. Portable.

Limitations:

- Injury to bear.

Use:

- Do not aim directly at the bear. Shoot in the air to the side of the animal and remember the bullets can ricochet off the ice. Reload as soon as possible. Ensure no people are in your line of fire.

Cracker shells:

Effectiveness:

- As for warning shots. Should not be relied upon for personal protection

Practicality:

- As for warning shots

Advantages:

- As for warning shots

Limitations:

- Not dependable. Shells can misfire or fail to explode. Limited to open areas. May be a fire hazard.

Use:

- Fire at 45 degree angle in the air to the side of the bear. Do not fire directly at the bear. Never fire behind the bear.

Thunderflashes:

Effectiveness:

- As for warning shots. Should not be relied upon for personal protection

Practicality:

- As for warning shots, effectiveness limited.

Advantages:

- As for warning shots.

Limitations:

- As for cracker shells. Limited range.

Pencil flares guns:

Effectiveness:

- As for warning shots. Should not be relied upon for personal protection.

Practicality:

- As for warning shots.

Advantages:

- As for warning shots.

Limitations:

- As for cracker shells.

Airhorns (boat horns):

Effectiveness:

- As for warning shots. May be used to prevent surprise encounter. Should not be relied upon for personal protection.

Practicality:

- As for warning shots

Advantages:

- As for warning shots

Limitations:

- Not reliable in very cold temperatures. May provoke aggressive or curious reactions from some bears. Source of noise is on person.

Birdscaring flare cartridges:

Effectiveness:

- More effective than cracker shells but do not scare some bears. During field tests this deterrent scared away most polar bears.

Practicality:

- As for warning shots

Advantages:

- As for warning shots. Reliable. Consistent trajectory. Flare component useful in darkness.

Limitations:

- Limited to open areas. May be a fire hazard.

Acoustic deterrents:

Effectiveness:

- Some frequencies (0.1 – 9khz) have good potential. Further research is required.

Practicality:

- May be useful at permanent or semi-permanent camps

Advantages:

- Appears physically harmless. Versatile. Easy to install.
- As for warning shots

Limitations:

- Further research required.

Vehicles:

Effectiveness:

- Engine noise often scares bears away. Chasing bears for short distance often effective.

Practicality:

- Useful while travelling or in small camps where vehicles used

Advantages:

- Easy if vehicle accessible

Limitations:

- Hazardous to bear and people if not used properly

Use:

- Do not chase for in excess of 5 minutes, you may tire and kill the bear, particularly in warm weather. Stay at least 30m from the bear. Do not turn engine off until sure bear will not return.

Dogs:

Effectiveness:

- Specially trained dogs may be effective. Not reliable.

Practicality:

- Suitable for camps of all sizes

Advantages:

- Easy

Limitations:

- Untrained dogs may aggravate bear or lead it back to camp. Dogs can be killed. Require a responsible handler.

Rubber bullets:

Effectiveness:

- Very effective

Practicality:

- Useful in most situations

Advantages:

- Bears do not act aggressively toward person firing gun. May cause behavioural changes resulting in long term deterrence

Limitations:

- Restricted weapon – use limited to RCMP. Intensive training necessary. Injury to bear. Special rifle required. Expensive. Single shot weapon.

12 gauge plastic slugs:

Effectiveness:

- Quite effective although some bears not deterred.

Practicality:

- Suitable for most problem bear situations.

Advantages:

- Accurate. Can be fired from 12 gauge shotgun. Portable. Inexpensive.

Limitations:

- Injury to bear, especially if used at closer range than recommended.

Capsicin sprays:

Effectiveness:

- Not rigorously tested on polar bears. Should not be relied upon for personal protection. If effective, effect is likely to last between 5 to 15 minutes.

Practicality:

- Portable. Useful as backup for other deterrent methods. Useful whilst travelling or in small camps.

Advantages:

- Readily available. Portable. Easy to use.

Limitations:

- Not useful in all situations e.g. wind. Limited range (6-8 metres). Not reliable in subzero temperatures, range greatly reduced.

Use:

- Downwind if possible. Short bursts. Continue spraying until deterred. Spray in eyes to be effective.

Three slug system:

Often the best deterrent is a combination of deterrents e.g. the three slug system. Use of cracker shells, plastic slugs and lead slugs in a short barreled 12 gauge shotgun. Cracker shells fired as a deterrent at 150-200m, if that fails to deter, plastic slug fired at 30-60m and as a last resort the lead slug should be fired at 0-30m to destroy the bear.

8. FIREARMS AND BEARS

Choice of firearm:

Single shot weapons are not good protection against bears as it often requires several bullets to kill a bear. Semi-automatic weapons are not recommended due to being more prone to malfunction, especially in cold temperatures. In cold temperatures, always guard against condensation.

Shotgun:

Suitable for those with little experience. Good killing ability when used with a combination of rifled slugs and large buckshot. Short barreled shotgun may be used with crackershells.

Rifles:

For use by those with experience. .30-06 or one of comparable power is recommended. More accuracy required. Soft point bullets of 200 grains or heavier are recommended.

Handguns:

Use is controversial. Revolvers of .357 are capable of killing a bear, but require experience.

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