

SKI SOUTH POLE REQUIRED CLOTHING AND EQUIPMENT LIST



Conditions in Antarctica change drastically throughout our season and vary depending on your location. Temperatures can reach as low as -40°F (-40°C) and as high as 23°F (-5°C) and can feel colder due to the prevailing headwind. To be prepared for all conditions, you must have a selection of items you can mix and match. Skiing while towing a sled generates heat and it is important to regulate your body temperature throughout the day by adjusting your layers.

Some days you will need more insulation than others, but in general a windproof outer layer and complete face protection are always necessary. On a typical day, most people will wear a thin and thick pair of leggings and a thin base layer top and a mid-layer top, and their windproof jacket and windproof pants. Some guides suggest wearing your sledging harness underneath your windproof jacket as it can make it easier to get into pockets and to vent. If it is cold, you will add the down vest on top of your windproof jacket. During breaks you will put on the down parka. It is crucial to prevent sweating, as your sweat will freeze and render your high tech clothing useless. The layering system described below will keep you safe and comfortable in all conditions - it is also the same system utilized by our Antarctic field staff.

Face, hands, feet, and thighs are especially vulnerable to cold injury. Pay particular attention when choosing boots, gloves, mitts and face/head coverings.

On a long ski expedition, there are additional concerns about abrasion injuries associated with the repetitive motion of skiing for 40+ days. Thighs are particularly vulnerable and once sores develop, cold temperatures and continued activity inhibit healing. Base layers designed for mountaineering and short journeys may contribute to 'polar thigh'. Instead choose items that are not too tight or abrasive.

This list is broken up into two sections with photos and descriptions of the more technical items up front and the complete clothing and equipment checklist with required quantities at the back. The suggested items are examples of products that meet the recommended criteria. Use them to compare specifications with your existing equipment or to find equivalent products from manufacturers available where you live. It is essential that you have suitable equipment for this challenging expedition. If in doubt, please contact us for further advice.

Undergarments



Materials

Silk, polyester/merino mix, polyester, merino wool. NO COTTON. Note that although merino has excellent thermal qualities, it is more abrasive than silk or synthetics.

Examples

Patagonia, Icebreaker, Brynje, Aclima

Description

Bring undergarments, sports bras, and/or camisoles in a wicking material. Test fabric options before your expedition, as it will not be practicable to change underwear as often as you would at home. Try different options for a few days and pick the most comfortable.

For the legs, we recommend silk leggings or shorts. These reduce the risk of abrasion injuries, by providing a smooth sliding surface next to the skin for clothing layers that come above (rather than those layers rubbing directly against the skin).



Base Layer



Materials

Choose your favorite of polyester/merino mix, polyester, merino wool or wool net. Do not bring cotton as it traps moisture and can cause you to chill more rapidly.

Examples

Patagonia, Icebreaker, Brynje, Aclima

Description

Your base layer goes above your undergarments and consists of a long-sleeved top and bottom. **Make sure these items are loose fitting and not too tight or abrasive.**

Mid Layers



Materials

Merino Wool or Fleece

Examples

Patagonia R1-R2, Mountain Equipment Eclipse Pant

Description

Your mid-layer consists of a long-sleeved heavyweight (expedition weight) top and bottom or lightweight stretch fleece top and bottom. They should not be so tight that they produce chafing or constriction, if they do, they are too small. Tops with hoods are great as they seal the neck to keep you warmer. Chest pockets are useful for keeping batteries warm and they don't interfere with the sledging harness.

Your next item is a midweight fleece jacket . It should be a full-zip jacket but a hood is not essential. Multiple pockets are useful. This can be worn instead of your mid layer hoodie on colder days and as a cosy dry layer inside the tent in the evening.

Optional: Hiking/Trekking Pants

Hiking/trekking pants, also known at 'guide pants,' are useful for Union Glacier Camp before and after the ski expedition. These are lightweight pants with some stretch that can be layered over your base layers.

Windproof Layers



Materials

Windproof Shell with Fur Ruff

Examples

Mountain Equipment Polar Expedition Jacket and Salopette, Norrona Arktis Gore-Tex Pro Ousland Edition Jacket and Salopette, and Antarctic Expedition Salopette

Description

Next you will need a windproof jacket and pants. Wind protection is the most important factor in this layer. Some materials are windproof and not waterproof. Others are both. If you already own a GoreTex shell it may be fine, as long as the cut and features are suitable for a long ski expedition.

Your jacket should be long enough to keep your lower back warm, but it does not need to cover your thighs. It must have a generous hood with a fur ruff that completely encircles the face. The ruff provides wind protection and creates a small microclimate of warmer air in front of the face.

If you purchase a jacket without a ruff, you can buy and sew one to the inside edge of the hood or sew in a zipper attachment so the ruff can be easily removed. Please do this before you arrive in Chile. Wolverine is optimum but wolf, coyote, husky, or fox fur ruffs will also work. These are available from [Apocalypse Design](#), [Glacier Wear](#), and [Wintergreen Northern Wear](#).

Your pants should have easy pull zippers for venting and full side zips. A drop seat pant design is vital for using the toilet if the pants have suspenders/braces or a salopette (bibs) design. The thighs are an area which is vulnerable to cold injury so avoid a tight fit and allow plenty of room for insulating layers underneath.

Alternative: An alternative to the windproof pants are lightly insulated pants, designed for ski mountaineering, such as, [Norrona lofoten Gore-Tex insulated Pants](#)

Down Layers

You will need several down options to provide protection against the coldest and windiest Antarctic conditions. These items should all be sized to fit over your windproof layers.

Down Parka with Hood



Examples

Mountain Equipment Gasherbrum Jacket, Rab Neutrino Pro Jacket

Description

Your parka does not need to be the warmest model available but should be expedition quality, rated -15°F (-26°C) and have a generous hood. Check to make sure the zippers are easy to use. Avoid waterproof, reverse coil zips, as they can get very stiff in cold temperatures.

Lightweight Down Jacket



Examples

Patagonia Down Sweater Hoody, Rab Microlight Alpine Jacket

Down Vest



Examples

Patagonia Down Sweater Vest, Rab Microlight Down Vest

Description

This is the main garment used to regulate your temperature while skiing. If you are cold, you will put on the down vest over the top of everything else. Therefore it needs to be sized large enough to go over your windproof shell and other layers.

Insulated Pants



Examples

Mountain Equipment Compressor ¾ pant, Norrona Lyngen down 850 knickers, Dynafit Mezzalama 2 Polartec Alpha Overshorts.

Description

¾ length insulated pants are essential for both men and women to protect against “polar thigh” injury. Make sure that they come down to your knees.

Head

The face is especially vulnerable to cold injury on a Ski South Pole expedition due to frequent headwinds. Complete face protection is essential. This means skiing in goggles, not sunglasses. The objective is to have your face and head completely protected from the elements while also being able to breathe freely and allow the moisture from your breath to escape (so that goggles do not fog).

You will need several options to cover your head, neck, and face, including your nose, depending on the temperature, wind conditions, and sun exposure. It is important to try different combinations at home to ensure that there are no gaps - often a crescent shape between the edge of goggle and a face mask or balaclava is hard to cover. Bring a variety of facemasks and head gear.



Item 1:

Hat or Beanie that Covers Ears

Materials:

Wool or Fleece

Description:

Your beanie can be worn on its own around camp or added on top of your Buff or balaclava for extra warmth while skiing.



Item 2:

Buff

Materials:

Polyester Microfiber, Fleece, or Merino Wool

Description:

The thinnest option is to wear a Buff as a balaclava with goggles on top. Combined with your jacket hood and a fur ruff, this may be enough coverage on some days.



Item 3:

Balaclava

Materials:

Power Stretch Fleece or Windstopper

Description:

On colder days you will need to replace your Buff with a balaclava.



Item 4:

Face Mask

Materials:

Neoprene or Windproof Fleece

Description:

While most face masks have both nose and mouth openings, face masks that completely cover the nose are best. If conditions are bad enough to require wearing a facemask, you need to have the nose completely covered and protected. If you purchase a face mask with a nose opening, it is best to modify it at home and sew over the nose opening. The brand Airhole usa.airholefacemasks.com has some good offerings.

Eyes

Quality eyewear is essential to prevent snow blindness. **Sunglasses or goggles must be worn at all times outside.**

Sunglasses and Hard Case



Materials

Non-metal frames with 100% UV protection and Cat 4 (dark) lenses that let in less than 8% of light.

Examples

Julbo, Smith, Oakley

Description

Your sunglasses should have dark colored lenses and full side coverage. Look for sunglasses with side-flaps (mountaineering or glacier glasses) or sport sunglasses with big lenses, wide sides, and a contoured shape that prevents light from entering at the sides. Non-wraparound sunglasses provide little or no protection from peripherally focused UV radiation.

Avoid metal frames as they can freeze to your skin. Bring a hard case to protect your sunglasses in your luggage.

Materials

100% UV Protection

Examples

Julbo, Oakley, Smith, Abom

Description

Quality goggles are vital while skiing to protect your eyes and face against wind and cold injury. You will need at least two pairs of goggles that you are comfortable wearing for long periods. Make sure each pair of goggles has a different lens tint or bring two identical goggle frames that use the same interchangeable lenses. Dark orange or rose colored lenses are recommended as they work in all light conditions. Goggles also need to have excellent venting as lens fogging is a common problem. Julbo makes several examples with lenses that pop away from the frame for venting. If you wear prescription glasses, check to make sure your goggles fit over them comfortably and won't fog up inside the goggles.

Sew a piece of windproof fleece or neoprene underneath the nose to form a mask of material that covers your nose but not your mouth. This will provide additional face protection in bad weather. Please do this before arriving in Punta Arenas. Ask the office for advice if you need help getting this done before you leave home.

Goggles



Hands

You will need a selection of gloves and mitts to protect your hands while performing a range of tasks from setting up tents and taking photos which require dexterity, to skiing and standing still which require insulation.

We recommend you bring gloves with wrist loops attached as many people take a glove or mitten off and lose it in the strong wind. Look for gloves that come with wrist loops or bring some elastic shock cord and your guide will show you how to make your own in Punta Arenas.

Thin Liner Gloves



Materials

Polyester or Merino Wool

Examples

Seirus, Outdoor Research, Icebreaker

Description

Liner gloves can be layered under other gloves or mittens for additional warmth. They also protect you if you need to take off an outer glove or mitten in cold temperatures. Having two pairs allows you to switch out liners as they become damp.

Note that merino gloves are less durable than polyester ones.

Thinsulate Fleece Gloves



Materials

Fleece and Thinsulate or Wool

Examples

Thinsulate, Rossignol, Ortovox, Norrona

Description

We recommend gloves that use a mix of fleece and Thinsulate for insulation. You have the option of wearing them with or without the liner gloves.

Alternative Option: Wool Mittens

Your other option is to use wool mitts, usually called Dachstein Mitts.

Insulated Gloves



Materials

Waterproof Breathable or Leather with insulated liner

Examples

Hestra Fält Guide Gloves, Hestra Heli Ski 3 Finger

Description

It's useful to have a pair of midweight insulated alpine or work gloves that can be worn when setting up camp. Hestra Fält Guide Gloves have proven to be versatile and useful on ski expeditions. Choose a glove with a removable liner, so that they can be dried out each night.

Alternative: People who have trouble keeping their hands warm may prefer a three-finger or 'trigger finger' mitt.

Thick Insulated Mittens



Materials

Synthetic or Down Insulation

Examples

Mountain Equipment Redline Mitt, Mountain Equipment Citadel Mitts, Black Diamond Super Light Mitten, Marmot Expedition Mitten

Description

You will need one pair of mittens with a high level of insulation. Fully waterproof mountaineering mittens are not necessary as they tend to be stiffer and more bulky than what is needed for an Antarctic ski expedition. We recommend synthetic (Primaloft) insulated mittens.

Optional: Chemical Hand Warmers

Chemical hand warmers are optional but keep in mind they add weight to your load even once they are used.

Pogies



Description

We will provide you with ski pole pogies—insulated ski pole handle covers, like the insulated covers available for motorcycle handlebars. These provide wind protection and an additional layer of insulation to keep hands warm while skiing.

Feet

Thin Liner Socks



Materials

Wool, Polyester, or Silk—NO COTTON

Examples

Smartwool, Bridgedale, Thorlo, Darn Tough, Injinji

Description

Toe socks are a good option to reduce blisters on and in between toes. If you use Intuition Boot Liners, you may find these are warm enough to ski in on most days.

Midweight Socks



Materials

Wool or Wool Blend Socks

Examples

Smartwool, Bridgedale

Description

When skiing in colder temperatures, these will be your primary ski socks.

Heavyweight Socks



Materials

Wool or Wool Blend Socks

Examples

Smartwool, Bridgedale, Thorlo, Darn Tough

Description

Warm socks are great to wear inside your tent.

Insulated Booties



Materials

Down or Synthetic Insulation

Examples

The North Face Thermoball Bootie, Rab Hut Boots, Valandre synthetic booties

Description

Insulated down or synthetic booties can be used around camp, inside the tent, or as extra insulation in your sleeping bag. Choose ones with a non-slip sole for trips outside the tent.

Suggested Post-Expedition Change of Clothes (leave at Union Glacier)

You can leave a clean change of clothes and personal toiletries at Union Glacier Camp, ready for when you come back from your expedition. These could include t-shirt, jeans or lightweight windproof pants, underwear, socks, lightweight boots, soap/shower gel and other toiletries, and a towel.

Sleeping

Sleeping temperatures will vary drastically during your expedition. Even though temperatures tend to be coldest during the early season, temperatures will also drop as you ski towards the Pole and gain altitude on the polar plateau. 24-hour solar radiation will warm the inside of tents but on cloudy days there is little passive heating.

Sleeping Bag



Materials

Down

Examples

Feathered Friends Snow Goose Ex -40, Mountain Equipment Redline, Marmot CWM

Description

There are two options for sleeping bags. The first option is to purchase a top quality down sleeping bag rated to -40°F (-40°C). The other option, is to use a combination of a down sleeping bag rated to 13°F to -22°F (-25°C to -30°C) and an overbag. The two bag option weighs a little more but provides comfort across a wider temperature range and is generally a less expensive option for people that already own a -30°C bag and do not wish to purchase a -40° bag. If you sleep cold, choose a bag rated on the lower end of the temperature range. We recommend down as it is much lighter and will pack smaller than synthetic bags. Get a full body-length mummy bag with a generous hood and full length zip. A little spare space inside is useful to store water bottles, batteries, and other items you don't want to freeze.

Insulated Overbag

A synthetic or down insulated outer bag can be used on top of your sleeping bag on the coldest nights. An overbag is required if you bring a -13°F (-25°C) sleeping bag.

Examples

Helsport Spitsbergen is both bags in one package, PHD Thinsulate Overbag, Halite Overbag

Materials

Closed Cell Foam

Examples

Therm-a-Rest RidgeRest Solar or Classic

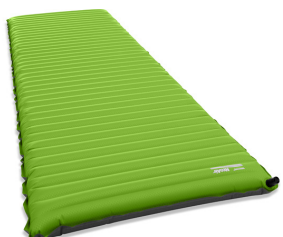
Description

Full-length, closed cell foam mat with textured surface.

Foam Mat



Inflatable Mattress



Materials

Nylon, Polyester, Down

Examples

Exped DownMat, Therm-a-Rest NeoAir All Season SV

Description

You'll need a full-length inflatable mattress. Look for the warmest model available and don't forget a repair kit!

Pee Bottle(s)



Examples

Nalgene 32 oz or 48 oz Wide Mouth Water Bottle(s)

Description

You will need your own container to urinate in. We recommend a wide-mouth water bottle that is marked for urine or 'pee'. Females may also find a pee funnel (Freshette, SheWee, Go-Girl) helpful.

At Union Glacier Camp, you can use your pee bottle in your tent at night and empty it in the designated containers. Between 89°S-90°S, you must use your pee bottle during the day and only empty it at communal pee holes at camp sites. At the South Pole and at ALE's South Pole Camp, all human waste **MUST** be collected and removed.

Whatever options you choose, we recommend practicing at home so you can be comfortable using them while on expedition. Practicing in the shower prevents unwanted spills.

Ski Equipment

A Ski South Pole expedition is the longest ski trip that most participants will ever take. The best boot and binding system combines insulation, comfort, durability, and skiing efficiency. While there are several different boot and binding combinations, they are not interchangeable. **Your boots must match your binding system.**

Please avoid single layer telemark boots as they are not warm enough. Mountaineering, alpine touring (AT), and plastic telemark boots are also not suitable. AT boots are only used by kiting/ski sailing expeditions.

Please check with your guide before buying boots or if you want to use boots that are not listed below. Your guide may request that all team members utilize the same type of boots and bindings.

BOOT OPTION 1

Baffin 3-pin Guide Pro Boots with 3-pin Bindings



This boot combines the comfort, insulation, and easy to break-in features of a non-technical mukluk boot with the skiing efficiency of a 75 mm 3-pin Nordic 'duckbill' ski binding. It has a durable molded sole unit that cannot de-laminate. The removable liners are soft, flexible, super warm, light, and heat moldable.

NOTE: Avoid the La Sportiva Olympus Mons Cube. They are not suitable.

BOOT OPTION 2

Alfa Polar A/P/S Boots with Rottefella NNN BC Binding



This boot has been used by many expeditions to the North and South Poles. It combines the quick clip in and out advantages of a Rottefella NNN BC binding with the warmth of a modern, expedition mountaineering boot. You will likely need to go two sizes larger than your hiking boots, to accommodate the Intuition Liner (see below).

While the Rottefella NNN BC bindings are very easy to use, they are more vulnerable to failure. As a result, we recommend bringing a spare binding.

REQUIRED LINER

Intuition Mukluk Liner



No matter which boot you choose, you will also need to purchase an Intuition Mukluk Liner separately. These liners are soft, flexible, super warm, lightweight, and heat moldable. Bring the original boot manufacturer liners as backup.

Optional: Extra Insole/Footbed

An additional insole or footbed in your boot adds warmth, helps eliminates heel lift, and can be used the fill in the liner once it has packed out.

Backcountry Nordic Skis w/ Mounted Bindings



Materials

Wood core skis with metal-edges

Examples

Åsnes Amundsen or Fischer E99 EasySkin Xtralite

Description

You will need wood core backcountry cross-country skis with metal edges. The width of the ski is dependent on the boot and binding combination. The wood core will allow bindings to be mounted very securely.

If using Rottefella NNN bindings, we recommend bringing a spare pair of bindings and mounting the bindings using the Quiver Killer mounting system. www.quiverkiller.com

Ski Skins



Materials

Synthetic or Nylon

Examples

Åsnes SHORT Skin Extreme 45mm

Description

You need both a pair of full-length skins and a pair of half-length skins. Full-length skins provide traction along the entire length of the ski which is useful over sastrugi and other undulations but increases drag. Half-length skins provide less traction but offer a little more glide.

Many skiers glue and screw their skins to their skis for polar expeditions as it eliminates the risk of the skin coming off. Very short counter-sunk screws are needed. Your guide will help you attach your skins in Punta Arenas.

Ski Poles



Examples

Black Diamond Traverse Ski Poles, Swix Mountain Advanced Carbon Composite Ski Poles, Thomas Ulrich Leki Ski Poles

Description

You will need high quality nordic or touring ski poles. Cork or leather handles are warmest. Ensure wrist straps are adjustable and long enough that a thick mitt can pass through the loop. Adjustable length (telescopic) poles are generally not recommended as many models collapse under load with the exception of Black Diamond's FlickLock design. Additionally, most telescopic poles are not long enough, but can make a good spare set between a team.

Optional Electronics

Electronics can add a lot of weight, so prioritize and research the lightest weight and most compact options. At our Union Glacier and South Pole camps, our charging stations have two types of outlets: USB and 120V A/C (North American Type A or B plugs). Chile uses 220V A/C (European Type C or L plugs), so be sure to bring plug adapters and voltage converters as needed. If bringing anything with AA batteries, make sure they are lithium, as they are the only ones that work in the cold.

Solar Panel and Battery Pack

The best way of recharging personal electronics is with a solar panel and a battery pack. These vary in size, weight, and cost depending on how many items you need to charge. We recommend Goal Zero or Powertraveller Powermonkey panels. Check that your solar panel is powerful enough to recharge your battery pack.

Smart Phone

You can save weight by using your smart phone for photos, music, e-books, etc... It can also be paired with an Iridium Go! for global connectivity. Be aware that Spotify type music accounts require an internet connection every 30 days and will stop working after a month in Antarctica. Alternatively, you can bring a separate iPod and camera.

Camera

Compact digital cameras are light in weight and sufficient for most people. Bring a padded case and several memory cards. Digital SLRs and their accessories add a lot of weight and are a luxury item. If you have professional requirements to bring a digital SLR then please speak with your guide to see if it is possible to share lenses amongst team members.

iPod or Digital Music Player

We've found solid state iPod Shuffles or iPod Nanos to be the most reliable. We recommend two sets of headphones as the thin wires can become brittle in low temperatures.

Iridium Satellite Phone

Iridium is the only mobile satellite telephone system that works in the interior of Antarctica. You can buy pre-paid minutes and use our phones at Union Glacier Camp. If you wish to bring your own phone then there are several models to choose from. You can pair an Iridium GO! with a smart phone or purchase a standalone satellite phone (9575 and 9555). Bring a spare battery, padded case, and charging cable. Make sure you purchase the correct battery for your handset.

Web Posting Equipment

If this is a priority for you, then the lightest option is a Garmin inReach or a smart phone paired with an Iridium GO! unit. It is not practical to carry a laptop computer and power supply due to the weight. Also, it is unreasonable to assume you will have enough power or time to post long or regular updates during your expedition.

Equipment Provided by ALE

Sleds

Acapulka 210 professional sleds (pulks), sledging harnesses, ski pole povies, kit bags, and zipped covers for polar bedding.

Camping

Tents, insulated tent floors, snow shovels, snow saw, tent brushes, and repair kit.

Meals

Food, packing bags, stuff sacks, stoves, stove boards, fuel, fuel bottles, plastic jerry cans, pans, kettle, kitchen cutlery, cooking equipment, lighters, and matches.

Communications

Two Iridium satellite phones for safety, solar panel, and battery pack.

Medical

Comprehensive first aid kit.

Navigation

Two GPS, compasses, chest compass harness, and batteries.

Toilet

Toilet paper and toilet bags for use during the Last Degree.

SKI SOUTH POLE CHECKLIST

You must bring ALL of the items on this list unless they are listed as optional. We will look for each item on this list at your Gear Check in Punta Arenas. These items may not be available for purchase in Punta Arenas and we will not let you board the aircraft to Antarctica without them.

X	#	Item
Undergarments		
	6+ pairs	Underwear, sports bras, etc.
	2 pairs	Silk leggings or shorts
Base Layers		
	3 pairs	Light or midweight bottoms
	3	Light or midweight tops
Mid Layers		
	1	Lightweight fleece top or expedition-weight base layer top
	1 pair	Lightweight fleece pants or expedition-weight base layer bottoms
	1	Midweight fleece jacket
Windproof Layers		
	1	Windproof shell jacket with fur ruff attached to the hood
	1 pair	Windproof shell pants with full side-zips
Down Layers		
	1	Down parka with hood
	1	Lightweight down jacket
	1	Down vest
	1 pair	$\frac{3}{4}$ length insulated pants
Headwear		
	2	Wool or fleece hats that cover the ears
	2	Bufs
	2	Face masks
	1	Balaclava
Eyewear		
	1 pair	Sunglasses (100% UV, Cat 4 lenses)
	2 pairs	Goggles (with nose beak attached)
	1	Sunglass case
	<i>Optional</i>	Spare contact lenses or prescription glasses, if required
Gloves		
	2 pairs	Thin liner gloves
	2 pairs	Thinsulate fleece gloves
	1 pair	Wool mittens
	1 pair	Midweight insulated gloves, or 3-finger mitts
	1 pair	Thick insulated mittens
	<i>Optional</i>	Elastic shock cord to make wrist loops for gloves
	<i>Optional</i>	Chemical hand warmers

X	#	Item
Footwear		
	6-8 pairs	Thin liner socks
	3 pairs	Midweight socks
	2 pairs	Heavyweight socks
	1 pair	Insulated booties with no-slip sole
	1 pair	1 pair Heel lift insoles example: Superfeet Heel Lifts. These are a useful relief to strained Achilles tendons.
Sleeping Equipment		
	1	Sleeping bag
	Optional	Insulated overbag
	1	Full-length, closed cell foam mat
	1	Full-length inflatable mattress and repair kit
	2	Eyeshades or eye masks for sleeping in 24-hour daylight
	2 pairs	Ear plugs
Ski Equipment		
	1 pair	Ski boots
	1 pair	Intuition Mukluk Liner
	1 pair	Backcountry nordic skis with boot-compatible bindings
	1 pair	Full-length ski skins
	2 pairs	Half-length ski skins
	1 pair	Ski poles
	<i>Optional</i>	Insoles/footbeds
Luggage		
	1+	Large lightweight duffel bag(s) (avoid heavy bags like The North Face Base Camp Duffel)
	1	Carry-on backpack 18" x 16" x 10" (46cm x 41cm x 26cm). You will use this bag on your Antarctic flights as your carry-on and can leave it Union Glacier with a change of clothing for after your expedition.
	4-6	Stuff sacks of different colors to organize items in the sled and tent
Other Equipment		
	2	32 oz Thermos flask
	2	32 oz Nalgene wide-mouth water bottles (for drinking)
	1	32 oz Nalgene wide-mouth water bottles (marked for pee). Option to substitute for one 48 oz Nalgene wide-mouth water bottle.
	1-2	Insulated covers for 32 oz Nalgene water bottles (Outdoor Research or Forty Below)
	1	Pee funnel for women
	1	Plastic insulated mug with lid with wide bottom
	1	Large lightweight non-breakable Lexan bowl or Fairshare Mug with lid
	2	Lexan spoons. (no plastic spoons or sporks - they break)
	2	Lip balm with minimum SPF 50
	2	4 fl oz pack of sunscreen with minimum SPF 50
	2	Handkerchiefs/bandanas
	1	Small pocket knife
	1	Watch with an alarm, new batteries, and a long wrist strap
	1	Sewing and repair kit with duct tape and screwdriver for bindings

X	#	Item
	1	Personal toilet bag with pack towel, Wet Wipes, toothbrush, toothpaste, anti-bacterial gel, lotion, contact lens solution, feminine products, etc.
	1	Personal first-aid kit that includes Band-Aids, super glue, blister kit, foot powder, tape, antiseptic, pain medication
	As needed	Personal medication. Bring enough for your expedition plus an additional 4 weeks' supply. High quality multi-vitamins are recommended.
Optional Electronics		
	<i>Optional</i>	Garmin inReach, Iridium GO!, or Iridium satellite phone and case
	<i>Optional</i>	Camera, memory cards, accessories, and case
	<i>Optional</i>	Phone, iPod or digital music player with two sets of headphones
	<i>Optional</i>	Batteries, chargers, adapters, and solar panels to support all of the devices you bring
	<i>Optional</i>	For Antarctica: USB or 120V A/C (North American Type A or B plugs) For Chile: Plug adapters (European Type C plug) and 220V transformers as needed
Other Optional Items		
	<i>Optional</i>	Lightweight journal, sketchbook, pencils, pen, e-reader
	<i>Optional</i>	Compass with global needle or weighted for the southern hemisphere
	<i>Optional</i>	Christmas and birthday treats and gifts
	<i>Optional</i>	Personal treats like candy bars, photos, favorite poem
	<i>Optional</i>	US cash to purchase satellite phone cards or merchandise at Union Glacier Camp
Post-Expedition Change of Clothes (leave at Union Glacier Camp)		
	<i>Optional</i>	Underwear
	<i>Optional</i>	Socks
	<i>Optional</i>	Cotton t-shirt or clean base layer
	<i>Optional</i>	Jeans or lightweight, windproof 'Guide' pants
	<i>Optional</i>	Lightweight boots to wear around camp
	<i>Optional</i>	Soap/shower gel, other toiletries
	<i>Optional</i>	Towel