

# Boot, Clothing and Equipment Decontamination Procedures for Marine Operations

## International Association of Antarctica Tour Operators (IAATO)

### Introduction:

Aware of the potential for visitors, including tourists, to be vectors either for disease or introduction of non-native species into the unique Antarctic ecosystem, IAATO Members developed decontamination procedures in 1999/2000 in response to the heightened scientific understanding of the importance of biosecurity.

Regularly reviewed and updated, these procedures have become a recognized cornerstone of IAATO Member's actions to advocate and promote the practice of safe and environmentally responsible private-sector travel to the Antarctic. The procedures are similar to the decontamination practices of island nations who protect against the introduction of external diseases or alien organisms, and are mandatory on all IAATO member operations.

We ask you to be fully familiar with these procedures and take strict steps to ensure they are followed. We strongly encourage you to have guests, crew and staff sign a declaration, similar to the sample below.

Please note: the term 'visitors' refers to anyone visiting Antarctica including crew, boat drivers, pilots, staff, guides and guests.

For the purposes of this document, 'small boats' are defined as zodiac-style Inflatable boats, such as rigid or semi-rigid hull Inflatable boats or any similar small landing craft used for shore interaction.

### Pre-departure Information

Visitors are advised that Antarctica is an isolated continent and believed to be largely free of introduced diseases and non-native species. We must all work together to prevent introductions and protect Antarctica's unique ecosystem.

Visitors are advised that all boots, clothing and equipment must be clean and free of seeds, vegetation and other debris before departing for Antarctica;

Those who go trekking, tramping, backpacking, or farm visiting prior to their expedition must clean their boots, clothing and equipment thoroughly to remove all foreign material;

Tripod feet, trekking poles, canes, backpacks and camera bags can also collect mud and seeds and should be checked carefully. Velcro attachments are discouraged because they are particularly susceptible to attracting seeds and must be thoroughly checked and cleaned;

Operators may wish to consider how they can minimise the risk of introductions through the equipment and outer clothing they supply to guests (e.g. providing clean complimentary jackets or loaning disinfected boots. Velcro is discouraged).

## Pre-Landing Briefing

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Visitors are to be reminded that they must have clean boots, clothing and equipment before any Antarctic outing.

A vacuum cleaner will be provided to clean backpacks, bags and pockets. Facilities will be provided to disinfect footwear<sup>1</sup>, and clothing and equipment as necessary. Equipment will be inspected prior to their first landing.

A thorough check should be made of pockets, seams, trouser turn-ups, jacket hoods, Velcro fastenings, and boot sole treads to ensure that soil, seeds and other organic material is removed. Backpacks and bags should be brushed out and vacuumed to remove all such material prior to arrival in the Antarctic.

Any outer clothing or equipment that might be used ashore should be thoroughly decontaminated.

## Boot-Washing Station

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Boot washing station(s) will be located at the head of the gangway, or close to where passengers embark and disembark the vessel.

It requires:

- Running water and a hose – preferably high pressure to ensure complete removal of debris;
- Adequate water drainage to prevent pooling;
- An area where all debris can be effectively scrubbed off boots and clothing, e.g. using scrubbing brushes and a shallow tray;
- A tray of suitable biodegradable broad-spectrum disinfectant such as Virkon S<sup>1</sup>;
- A member of staff or crew to assist visitors to inspect their boots and clothing for complete decontamination.

Before<sup>2</sup> and after each landing all visitors going ashore must walk through the boot-washing station and ensure that boots are free of debris and disinfected.

Boat crews may board via a different route to their passengers and should ensure they also complete the decontamination process.

Take care to also ensure that small boats and the gangway are clean.

## Landings

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Where possible, avoid walking in concentrations of organic material such as guano, seal placenta or seal faeces, in order to avoid moving this material around the landing site.

Place equipment as far from groups of animals as possible, using a decontaminated ground sheet or similar to reduce contact with the ground. Do not leave it unattended. Ensure loose items are secured and cannot blow away. Be aware of areas where animals exit or enter water or colonies.

Before boarding small boats to return to the vessel, debris – especially organic matter such as guano – should be washed off boots and clothing as much as is possible. A simple brush scrubber at the landing site should be used to clean boots before entering small boats at the end of the landing period. Do not forget to clean the debris off the brushes before returning to the vessel. Ensure that whatever touched the ground (backpacks in particular), boot cuffs, or exposed velcro are inspected, and cleaned before leaving the landing site. Seeds and other vegetation in the sub-Antarctic islands can easily be transported if all visitors are not vigilant.

Where appropriate, clothing pockets can be turned out for vacuuming by staff on the vessel as a precaution against transport of seeds.

On returning to the vessel boots, clothing and equipment must be cleaned thoroughly and disinfected at the boot-washing station. The disinfectant should not be rinsed off, but allowed to dry thoroughly on the article between landings.

At the end of each landing, small boats should be inspected, and when necessary cleaned, to ensure that no foreign material is transported between sites.

## Between Landings

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Every effort must be made to ensure that boots and clothing dry out completely between landings. (Desiccation is an important mode of controlling some micro-organisms.)

Visitors should be reminded in subsequent pre-landing briefings to inspect their boots and clothing to ensure that they are clean and no foreign material is present.

<sup>1</sup> The research paper 'Identification of an agent suitable for disinfecting boots of visitors to the Antarctic' (Curry, C., McCarthy, J.S., Darragh, H.M., Wake, R.A., Churchill, S.E., Robins, A.M., & Lowen, R.J. (2005), *Polar Record*, vol.41, no.216, p39-45, <https://doi.org/10.1017/S003224740400396>) recommends that a disinfectant be used at the boot washing station. To date, the disinfectant Virkon S is acknowledged as being the most effective agent. Be aware that careful handling of Virkon S is essential and instructions for use should be adhered to.

<sup>2</sup> Some disinfectants are most effective when allowed to completely dry on items. All footwear and other items that might come into contact with the ground should be disinfected before arrival in the Antarctic/sub-Antarctic region and allowed to dry thoroughly. For subsequent landings on the expedition, provided all footwear, clothing and equipment is free of debris, disinfected and allowed to completely dry afterwards, it may not be necessary to wet it again with disinfectant before disembarking for the next landing. Staff and crew must also be confident that all footwear and equipment was properly disinfected after the previous landing.



## **ANTARCTIC PRE-ARRIVAL BIOSECURITY DECLARATION**

I have thoroughly cleaned all items which might come into contact with the ground ashore.

I have removed any debris and washed with the disinfection solution provided, including all footwear to be worn, tripod/monopod feet and walking sticks, ski poles, snowshoes etc.

I have removed all seeds and loose items from the pockets, folds and Velcro of all items to be worn or taken ashore, including all clothing, particularly outerwear, my backpack, camera bag, etc.

I understand the need for biosecurity between Antarctic regions and individual landing sites to prevent the introduction of alien plants or diseases.

I undertake to clean all necessary items before and after each landing in the Antarctic & Sub-Antarctic Islands including South Georgia.

I agree not to take food ashore (except if individually permitted by the Expedition Leader).

I will not dispose of any waste ashore or overboard.

Cabin	Name