

# **A Study into the Provision of Sustainable Toilets in Remote Rural Locations**

Submitted to

Forth Valley and Lomond LEADER Local Action Group  
February 2010

**Section 12.4**

**CASE STUDY**

**The Cairngorm Poo Project**



## CASE STUDY 12.4 – The Cairngorm Poo Project

Cairngorm  
Aviemore PH22 1RB

OS reference: NH990059

With thanks to Heather Morning for helpful discussions. The following details were sourced from the Cairngorm website.

### Summary

The Cairngorm Poo Project aims to reduce the amount of human waste being left on the high plateau areas by asking visitors to defecate into special pots and bags and carry their waste out to be dropped into the sewage treatment plant at the Cairngorm car park.

The project was established in 2007 by former Cairngorm Mountain Ranger, Heather Morning with support provided by Cairngorms National Park Authority, Glenmore Lodge, Leader Plus and TISO.

During the months of the spring thaw, human waste starts to emerge from the melting snow. This is not only unsightly and smelly but results in an increased risk of illness from contaminated snow. There is a significant impact on the local ecology and contamination of local water courses, the River Nethy and the Loch Avon Basin [1].

The poo bags have been specially sourced for this project and are made from corn starch. These bags break up rapidly once deposited into the treatment facility. The pots are reusable, water and air tight containers which come with a carrying case.

The bags and pots are supplied free of charge by the Ranger Base at the Coire Cas Car Park. The treatment facility is situated below the lower Cas Car Park.

### Details

The report below gives some of the background to the project. The latest generation of bags are biodegradable plastic rather than water soluble. These are acceptable to the local authority who clean out the sewage system about every 6 months. Presumably the authority is able to cope with this grade of plastic in their more sophisticated (and warmer!) facilities.

The scheme is almost completely successful in removing human waste from the snowholing sites. Groups and individuals appear keen to use the system. A high proportion of pots are returned clean and unused, but no sign of fouling was found during 2009.

There have been issues with the name of the scheme and when the bags are reprinted the scheme will be re-branded to concentrate people's attention on the desirable outcome rather than the problem – perhaps "Campaign for White Snow".



## Contact

Nic Bullivant,  
Head Ranger,  
Cairngorm Ranger Service,  
Cairngorm Mountain,  
by Aviemore, PH21 1NT.

## Heather Morning reports:

“Motivated by a ‘Leave No Trace’ Course run by Cairngorm National Park, I felt that the time was right to initiate a ‘Pack It Out’ system here in the Northern Cairngorms. Those of you who have been on Winter Mountain Leadership course at Glenmore Lodge in the last 10 years will know that the courses have been instrumental in doing just that. The project has worked well and been very successful in educating mountain leaders in good practice. However a system open to the general public, easily accessible from the main access to the Northern Cairngorms and environmentally friendly, seemed to be the way ahead if our impact on the hill were to be minimized.

“Easy job or so I thought! We have a sewage plant here at the mountain - what could be easier than handing out a few biodegradable bags and providing access to our sewage plant to drop them in!! How naïve can you get? I hadn’t considered health and safety, SEPA regulations, sponsorship, funding, management of the project and the biggest headache of all - finding a biodegradable bag that was strong enough to hold poo but then break down easily in our sewage plant.”

“After working for 3 seasons in Antarctica, pooing into a bag seems like normal practice to me, though I’m not sure my partner and lodger felt the same way when throughout this summer they have been asked to provide samples for me to test various bags! I figured that the longest a bag needed to stay together was 3 days and then a test suspending them in an old mink trap in the sewage plant would see if they broke down easily and allowed the contents to join the rest of Cairngorm Mountain sewage.”

“Bio bags made out of various types of starch - potato, corn and tapioca seemed the obvious choice - strong enough to hold the poo, but, on test, unfortunately after 3 months did not break down to allow the contents out. Next trial was ‘water soluble’ bags - perfect.”

“The commercial laundry business uses them all the time - the whole bag plus contents go straight into the washing machine and, as if by magic, the bag disappears! A slight flaw became apparent in this system when the temp of the water had to be 60° C. for the bag to break down – oops! The first settling tank of our sewage plant is around 5° C.”

“So what about cold water soluble bags? Perfect? Well, they break down immediately when dropped into the sewage plant - but not so perfect if they are being used in wet conditions or come into contact with any urine. Yes you can picture the problem out there on the plateau with a cold water soluble bag in the pouring rain!”

“Enviro Bag,, who produce these water soluble bags kindly offered to produce one that would break down at 40° C, allowing the poo to be held in place, but break down when submerged in the sewage plant. However, as this product was oil-based and not vegetable-based - like the starch bags - would it pass the scrutiny of SEPA and, more importantly, not mess up our sewage plant? SEPA is happy with them, but, unfortunately, I’m not as I feel that any system we use has to be ‘Bomb Proof’ and as user friendly as possible.”

“So I’m still not quite there on the bag problem. I have various tests going on at present using moisture absorbing material in the water-soluble bags and adding various substances to the bio-bags to encourage a swift breakdown, including recycled chicken shit from my chucks at home!! Such has been progress that I now feel positive that the bag problems have been sorted and we are ready to launch the project for the winter season.”

“As of Nov 07 - the bag problem is sorted and we have available ‘bespoke’ bags ready and waiting for people to use.”

“If you are accessing a snow hole site from the Cairngorm Ski Area I would encourage you to do your bit for the Cairngorms and call in at the Ranger Base for your bags, a carrying pot (BHD - a light and rigid bottle with a screw top with no chance of any leakage or smell) and pouches (if you want to carry the pot externally it fits really easily to the compression straps on the side of your rucksack).”

“Then, when nature calls, poo in the bag, tie the top of the bag and put in the pot. On return to the car park, follow the signs to below the bottom car park where you will find the Poo Chute where you deposit your bag and throw the pot into the sterilizing barrel next to it. The pot can then be cleaned and re- used for the next person.”

[1] Research conducted by Barry Forrester, Liverpool John Moores University.

One aim of Barry Forrester’s research is to obtain data on the perceptions of the health risk posed by backcountry sanitation practices and the behaviour of people accessing the Cairngorms for winter recreation. During 2010, he intends to interview stakeholders involved in managing human waste in the National Park. One of the sections of the interview questionnaire relates to management and the strategies that are acceptable and not acceptable to individual users.