

Hikers spread invasive plant seeds accidentally

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Hikers may be inadvertently helping to spread invasive plants across the largest national park in Australia's New South Wales, a study has found.

Scientists analyzed how seeds from five different invasive plants get scattered by hikers around Kosciuszko [National Park](#). They calculated that during just one hiking season up to 1.9 million [plant seeds](#) could be carried on walkers' socks, while 2.4 million seeds could attach themselves to their trousers.

Unsurprisingly, all the seeds attached to socks better than to trousers. Some were still stuck at the end of a five-kilometer walk.

"Around 33,000 visitors go through the alpine area of Kosciuszko National Park each season. Half go for short walks, half go for much longer walks, which means there's a lot of potential for accidental [seed dispersal](#)," says Professor James Bullock from the Center for Ecology & Hydrology (CEH), one of the authors of the study.

Scientists call plants and animals invasive if they spread so much they cause problems for local biodiversity. Invasive species can be either native or non-native. Non-native means they've got into a country from abroad – usually on a boat, plane or car. "But non-native species may not always cause problems," explains Bullock.

Invasive species are now recognized as a threat to biodiversity around the world. Japanese knotweed, the grey squirrel and the harlequin

ladybird are all examples of species that have been brought into the UK and are now spreading so much they're a problem.

"All five plants we looked at in Kosciuszko are considered problem species: they're spreading in what is regarded as a pristine area and are pushing out native species."

The five invasive plants the team studied

- Bidgee-widgee
- Sheep's sorrel
- Sweet vernal grass
- Cocksfoot grass
- Red fescue grass

Scientists know that infrastructure like roads and tracks for tourists helps spread weeds around pristine areas. But until now, few studies have looked at how tourists' clothing helps accidentally spread weeds' seeds. This latest study, published in *Biological Invasions* is one of only three such studies.

"People were already aware that visitor pressures could cause problems in national parks, and we've recognized for a long time that people could be a major source of seed dispersal," says Bullock. "But no-one had really quantified this before."

So, along with another CEH colleague and two researchers from Griffith University in [Australia](#), Bullock decided to find out how the seeds from the five [invasive plants](#) get accidentally moved around Kosciuszko National Park.

They found that the type of clothing hikers wear has a huge effect on the number of seeds dispersed. Bidgee-widgee seeds have spines, so get

carried over much longer distance than cocksfoot seeds, which are smoother and less likely to attach to clothing.

"Becoming attached to people's clothing is a particularly good way for seeds to get dispersed: if a seed is going to stick to socks, it usually stays stuck for a while," says Bullock.

To stem the problem, Bullock and his colleagues say hikers just need to be aware of the problem.

"We recommend that people are careful when going from car parks to more wild areas. They should take care to pull [seeds](#) off their socks before they leave the car park," says Bullock. "It's simply an education problem."

"Walking is seen as a relatively low impact activity, but our study shows that it can have a long-term, indirect impact on the environment," he adds.

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More information: Catherine Marina Pickering, et a., Estimating human-mediated dispersal of seeds within an Australian protected area, *Biological Invasions* Volume 13, Number 8, 1869-1880, [DOI: 10.1007/s10530-011-0006-y](#) , published online 13 May 2011.

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