

## Sphagnum harvesting: an antipodean myopia

**S**phagnum peat is widely used in horticulture and industry, largely due to its absorbent properties. In contrast to the vast, expansive peat deposits in the northern hemisphere, antipodean peat deposits are limited in area, the largest being in southern South America and New Zealand.

In eastern and south-eastern Australia, alpine *Sphagnum* bogs and associated fen communities are subject to various State legislative controls and have been classified with varying degrees of endangerment. Further, these ecological communities are the headwaters of most of Australia's key river systems, including those in Tasmania. Any impacts in these headwaters have downstream consequences.

In Australia, the greatest ongoing threats to *Sphagnum* bogs and associated fens and peatlands are the all too frequent summer wild fires and the effects of climate change (increased summer temperatures and less frequent rainfall events), together with unsustainable harvesting. Historical impacts have included grazing and trampling by non-native animals (cattle, horses), invasion by exotic weeds, recreational tourism and increased human infrastructure (access roads, recreational housing).

*Sphagnum* peatlands usually form in sites of relatively high rainfall with low evaporation, on largely anaerobic soils with low fertility. The high water table and dominance of moss and sedge vegetation results in a fragile ecosystem sensitive to any disturbance.

The dry summers in Australia often result in large areas of *Sphagnum* drying out and potentially dying, suggesting that *Sphagnum* peatlands in south-eastern Australia may be near the upper physiological limit of their climatic tolerance.

The area of *Sphagnum*-dominated vegetation in Australia is very small. For example, the total area of *Sphagnum* peatlands in Tasmania, climatically the most suitable area for peat development, is approximately 1,300 ha (or 0.0015%).

Most of the harvesting of *Sphagnum* and peat in Australia occurs in Tasmania, with very minor amounts in Victoria and New South Wales. *Sphagnum cristatum* is the most abundant and widely harvested species, although *S. australe*, *S. novo-zelandicum* and *S. subsecundum* are also harvested. Harvesting, with considerable collateral damage and degradation to both peat deposits and the surrounding catchment areas, amounts to around 15 tonnes annually ([www.dpipwe.tas.gov.au/intertext.nsf/WebPages/BHAN-54ABCA?open](http://www.dpipwe.tas.gov.au/intertext.nsf/WebPages/BHAN-54ABCA?open) – accessed 26 August 2011).

Whilst the harvesting operations are all small-scale, the scarcity of *Sphagnum* peatlands means that the overall impacts on this fragile ecological community have been significant. Fortunately, more than 90% of *Sphagnum* communities are within designated National Parks and are thus protected, putting increased pressure on the remaining unprotected areas. However, illegal harvesting remains an ongoing problem and there are no controls on harvesting peat on private land. In a climate where there has been in the past, and likely to be very little in future, opportunity for the development of *Sphagnum* or peat deposits, any harvesting in Australia is clearly unsustainable.

In New Zealand, *Sphagnum* harvesting occurs over an area of approximately 1,300,000 ha. Historically, swamp areas where *Sphagnum* commonly grew were drained to allow more productive agricultural use. With the onset of demand for peat for use in horticulture, regenerative harvesting, with a 3- to 5-year fallow time, became standard practice. Compared to Australia, management and control of the harvest in New Zealand has been far more successful.

With the abundance of *Sphagnum* peat and peat deposits in the northern hemisphere, it is questionable whether any harvesting in the southern hemisphere is justifiable on environmental or economic grounds.

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