

The Australian Brush Tail Possum, or for the more scientifically oriented, the *Trichosurus vulpecula*, has created significant interest in the New Zealand textile sector over recent years.

### PERINO – THE ENVIRONMENT

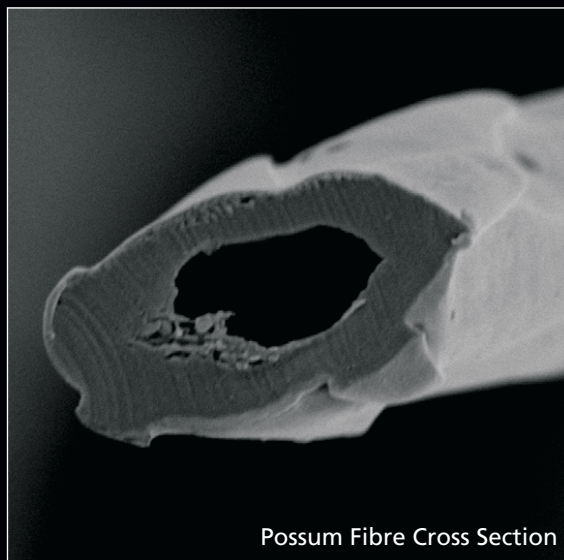
The unique Possum fibre is obtained from the Brush Tail Possum, a species introduced to New Zealand in the mid 1800's whose numbers over 150 years have reached plague proportions. These possums are now causing serious damage to the ecology of New Zealand's natural flora and fauna with native trees, plants & birdlife under threat from extinction because their habitat is being destroyed by the possum. Possum control programmes offer fibre as a by product, making the Possum/Merino blend an environmentally sound choice.



### PERINO – THE YARN

Woolyarns New Zealand, based in Lower Hutt, were responsible for the initial development and refinement of the process for blending fine Merino and soft, light Possum fibre, into a specialised yarn which offers incredible warmth and resilience. Like the fibres of another fur-bearing animal, the polar bear, possum fibres are hollow and offer lightness and warmth compared to other natural fibres of a similar diameter. Possum fibre is also similar in form to other animal fibres in that it has tiny overlapping scales, often of varying shape and the fibre appears more similar to cashmere (Gore, S.E. and Laing, R.M., 2002).

Many manufacturers of synthetic fibres have attempted to mimic these natural properties to provide performance benefits (the process of replicating nature in industrial design is appropriately named biomimicry).



Possum Fibre Cross Section



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### PERINO – THE PERFORMANCE

Woolyarns are working to develop and test yarns with the characteristics sought after by adventure athletes - minimal weight and maximum performance. The Perino yarn with its unique blend of Merino, possum and some performance enhancing synthetic fibres will offer the following performance benefits;

**Thermal regulation** – Air is a poor conductor of heat. The more air that is trapped within the fibre and the fabric structure the more warmth it will offer to the wearer under a given set of conditions. Possum fibres can be hollow in structure and therefore provide the capacity to trap more air and provide lightweight insulation. In independent performance measurements, Perino fabrics were found to be 50% warmer than Merino and 35% warmer than cashmere fabrics of the same weight and knit structure. Therefore Perino fabric offers warmth without weight.

fabrics offer quality and performance over time. The fabrics when tested have shown a measurable inclination not to pill.



**Moisture vapour transmission** – Both Possum and Merino fibres have a complex structure with a hydrophilic (water holding) interior, known as the cortex, and a hydrophobic (water repelling) exterior known as the cuticle. Perino fabric will absorb and desorb moisture vapour from the external environment or the body microclimate (that is, between the body and the clothing layers).

This type of fabric is generally referred to as a 'breathable' fabric, which is one which has a relatively low resistance to the transmission of moisture vapour. As you sweat, a breathable fabric increases the time before the sweat condenses to a liquid form, thus increasing wearer comfort. Additionally, the hydrophobic exterior of both Possum and Merino fibres has the added benefit of being naturally shower repellent.

Perino fabrics will absorb low quantities of moisture without feeling damp allowing the fibre to buffer the body's microclimate in changing conditions.

**Anti-odour** – A significant amount of anecdotal information points to the superior performance of Merino in terms of resistance to the build up of odour, although the mechanism by which this occurs is not entirely clear. Due to the proportion of Merino in the Perino blend Perino garments would offer some degree of resistance to odour.

**NOTE:** The Brush Tail possum is considered a threat to the New Zealand ecology & therefore a pest. The Brush Tail possum differs from the North American Opossum.



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