Global biodiversity is estimated at 8.7 million species (Mora et al., 2011), which provide critical ecosystem environmental conditions. Each coregion has characterization factors for four land use types. Location-specific characterization factors are based on the spatial classification of coregion, a large area with distinct species and ecosystem.

### RESULTS

#### High Biodiversity Impact of Wool

<table>
<thead>
<tr>
<th>Material</th>
<th>Total Biodiversity Impact</th>
<th>Wool</th>
<th>Cotton</th>
<th>Lyocell</th>
<th>Polyester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>9.020</td>
<td>0.029</td>
<td>0.003</td>
<td>0.00001</td>
</tr>
</tbody>
</table>

**Wool** has the highest biodiversity impact of the four evaluated textiles, which can be attributed to the high land requirements of grazing and the model’s inability to account for sustainable grazing practices.

#### High Contribution of Raw Materials

- **Lyocell**: The composition of lyocell is dominated by eucalyptus pulp, which accounts for 60% of the total pulp mix (Figure 4). Land occupation for eucalyptus harvest is less than half of that for beech harvest (Figure 4c), yet the biodiversity impact of eucalyptus is 7 times greater than the impact of beech (Figure 4c). If land occupation alone drove biodiversity impact, then eucalyptus would have a much lower biodiversity impact than beech. Beech wood is sourced from managed forests and has much greater land requirements than the agricultural land requirements for eucalyptus. The more intensive agricultural land use of eucalyptus, combined with the sensitive ecosystems of South Africa and Southeast Biodiversity, create a discrepancy between land occupation and biodiversity impact.


### CONCLUSIONS

- **New model** is currently better suited for providing broad generalizations than for conducting refined product system assessments, though it has potential for future use in LCA alongside other indicators.
- **Future work** can contribute to developing partnerships with NGOs and suppliers that expand and develop innovative sustainable land management strategies.
- **Recommendations for Patagonia**
  - Continue to develop partnerships with NGOs and suppliers that expand and develop innovative sustainable land management strategies.
  - Stay informed about sustainable land management practices and strategies, and support source from suppliers using such practices.
  - Work with suppliers to minimize impacts other than land use that may cause biodiversity loss. Decreasing water use, chemical use, water pollution, and fertilizer may all help to minimize impacts on biodiversity.

### ACKNOWLEDGEMENTS

This paper was written in collaboration with the following people: Thomas Koellner and Laura de Baan; Giles Rigarlsford; and Christian Schuster.

### REFERENCES