Water yield studies in Otago’s upland snow tussock grasslands.

Alan Mark,
PhD, ΦBK (Duke), Hon DSc (Otago), FRSNZ, KNZM,

Department of Botany,
University of Otago,
Dunedin.

Chair, Wise Response Society.

alan.mark@otago.ac.nz
Pastoral leases in altitudinal corridors:
304 leases on 2.6 mill. ha: = 8.553 ha. avge.
Old Man Range, Central Otago. 400-1682 m.

<table>
<thead>
<tr>
<th>Pptn mm</th>
<th>MAT deg C</th>
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<tbody>
<tr>
<td>1616</td>
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<tr>
<td>1034</td>
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<tr>
<td>1061</td>
<td>5.0</td>
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<tr>
<td>774</td>
<td>5.9</td>
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<tr>
<td>498</td>
<td>7.2</td>
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<tr>
<td>335</td>
<td>10.4</td>
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</tbody>
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High-alpine mixed grassland - cushionfield
Low-alpine tall tussock grassland
Subalpine Mixed short-tall tussock grassland
Montane Short tussock grassland

Alexandra
Snow tussock management and water yield.

Lammerlaw lysimeter site

Lysimeter profile

Snow tussock water yield = 63-80% of ann. pptn of 1250-1600 mm.
All alternative cover yields sig. less.

Garvie Mountains, 1600m.
Localised loss of snow tussock cover due to early pastoral farming. Reduced water yield is an inevitable consequence.
Snow tussock features explaining high water yields:

- Leaf anatomy
- Lammerlaw Ra., 1000 m
- Snow accumulation
- Fog interception
- Snow retention
ECOSYSTEM SERVICES: Maximising water yield and trade-offs with exotic afforestation: C storage-sequestration

Glendhu paired catchments

Pinus radiata

Snow tussock grassland

Differential yield:
Steady reduction:
41% at yr 22.

Mid Dome
Upper Tomogalak Catchment.

Nov 1998

Dec 2004

May 2015
References:


