The old pines of Karhunpesavaara

Dendrochronological approach

070415

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Photos and data at the Saima Data Bank

The oldest pine forest in Finland grows here. Some individuals over 650 years old.

Karihunpesävaara

NATIONAL LAND SURVEY OF FINLAND - MAPSITE

The plane coordinate system and geographic coordinates of the ETRS89 coordinate system

<table>
<thead>
<tr>
<th>Coordinate system</th>
<th>N / lat</th>
<th>E / lon</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETRS-TM35FIN coordinates</td>
<td>7634158.000</td>
<td>512585.000</td>
</tr>
<tr>
<td>ETRS-TM35 coordinates</td>
<td>7634158.000</td>
<td>512585.000</td>
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<td>ETRS-GKn coordinates</td>
<td>7637212.885</td>
<td>27512590.036</td>
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<tr>
<td>ETRS89 geographic coord. (~WGS84)</td>
<td>68.81851569</td>
<td>27.31210006</td>
</tr>
<tr>
<td></td>
<td>68° 49.111'</td>
<td>27° 18.726'</td>
</tr>
<tr>
<td></td>
<td>68°49’ 6.656”</td>
<td>27° 18’ 43.56”</td>
</tr>
</tbody>
</table>
The English name for "Karhunpesävaara" is something like "Bear’s lair hill". The bear’s lair is a small cave inside a big stone (photo down left).
The life spans of some cored living pines and snags by the years 1994 and 2001. The oldest individuals are now (2015) ~630 years (number of rings + 20 + estimated time to reach breast height (1.3 m) is ~15 vuosi.)
Tree-ring indices created using different methods (Arstan, Cronol Kinsys). These trees tell the same story as tree-ring analyses generally in Finnish Lapland: no specific warming, just natural climate variability from cold periods to warm periods and vice versa. No trends.
The mean temperature of July at Karhunpesävaara estimated from a modelled relationship between the Karasjok July mean temperature and the tree-ring widths of the Karhunpesävaara pine. The upper graph shows emphasizes the annual values and the lower graph the FFT-smoothed values. The well-known climatic patterns (warmer and cooler) periods show up very nicely.
Wavelet analysis exposes a clear 80±20-yr cycle (red belt) that is considered to originate from cyclicity in solar irradiance (so-called Gleissberg cyclicity).
<table>
<thead>
<tr>
<th>Country</th>
<th>FINLAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>Karhunpesäkivi Inari</td>
</tr>
<tr>
<td>Tree species</td>
<td>Pinus sylvestris</td>
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<td>Location</td>
<td>68°49'27°20'</td>
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<tr>
<td>Number of trees comprising the chronology</td>
<td>37</td>
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<tr>
<td>Time span of chronology</td>
<td>1398-2001</td>
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<tr>
<td>Responsible partners</td>
<td>Merläinen Jouko, Lindholm Markus, Timonen Mauri, Eronen Matti</td>
</tr>
</tbody>
</table>

**FILES:**

- Measurement file (average)
- Quality control file created by COF12K
- Output file created by COFCOR
- Master series in compact format, created by COF12K

The data for this presentation was picked from the [Tree-Ring Data Bank Saima](http://www.tree-ring-db.helsinki.fi) / Karhunpesäkivi.