NEW ZEALAND

Tree-ring records from subantarctic forests in New Zealand

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Temperature-sensitive tree-ring width chronologies for the Southern Hemisphere include several we have recently produced for pink pine (Halocarpus biformis) from Stewart Island, the southernmost of the three main islands of New Zealand (D’Arrigo et al. a and b. in press). These chronologies are positively correlated with warm-season land and marine temperature records for southern New Zealand and vicinity. We have also developed chronologies of silver pine (Lagarostrobus colensoi), closely related to the huon pine (L. franklinii) of Tasmania, for two sites: Ahaura, South Island, and Mangawhero, North Island, New Zealand. Both are updated from series originally published by LeMarche et al. in 1979.

Although there are shorter intervals of comparable warmth, the highest 20-year periods of growth during the past 300 or more years of record for Stewart Island occurred during the middle 1950s-1970s, coinciding with record warming since around 1950 in New Zealand. The updated Ahaura and Mangawhero series also show above-average growth during the recent warm period, with the highest 20-year growth intervals since 1350 occurring in recent decades.

(continued on next page)
These chronologies supplement previously published tree-ring data from New Zealand (LaMarche et al. 1979, Norton et al. 1989), Tasmania (Cook et al. 1991, 1992, 1994), and southern South America (Lara and Villalba 1993, Villalba et al., 1994). Together these tree-ring archives improve our geographical coverage and long-term perspective of climatic variability for data-sparse regions of the Southern Hemisphere.

CHINA

Paleoclimate records available from Chinese historical documents

Historical documents are a major resource of paleoclimate information in China. They contain the records on drought, floods, rain, snow, freezing, frost, wind, dustfall, atmospheric physical phenomena such as twilight, sky-color, etc., and past records of crops, famine, and insects pests etc. The earliest one dated from 780 BC. A systematic study has been conducted on 8128 sources including government history books, local gazetteers, and literature etc. After detailed proof-reading, cross-checking and establishing the chronology of events, a Chinese historical climate database has been established in the NCC (National Climate Center, China). A map locating all the sites of records can be obtained from the author.

The records have been employed in reconstructing regional climatic series mapping the real conditions of extreme climate cases and compiling a chronological table of some rare paleoenvironmental events.

Table 1. Overall percentages of the paleoclimate records mentioning different items in Chinese historical documents

<table>
<thead>
<tr>
<th>Item</th>
<th>drought</th>
<th>flood</th>
<th>rain</th>
<th>snow</th>
<th>storm</th>
<th>hail</th>
<th>frost</th>
<th>wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent %</td>
<td>18</td>
<td>22</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>dust</th>
<th>cold</th>
<th>hot</th>
<th>locust</th>
<th>epidemic</th>
<th>famine</th>
<th>harvest</th>
<th>other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent %</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>3</td>
<td>11</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

The table shows some statistics for major items of the database. In addition, there are the daily weather records extracted from some private diaries, and government weather reports in historical times.

References:

ROSAINE D. D'ARIGO, EDWARD R. COOK, BRENDAN M. BUCKLEY AND PAUL J. KRUSCH
Full references can be obtained from the first author at: Tree-Ring Laboratory, Lamont-Doherty Earth Observatory, Palisades, NY-10964, USA.