

## **Climate Change**

Relevant sections of the “Wellington Regional Climate Change Response” are attached.

Parks and forests can provide opportunities for sequestering carbon through existing/future forests and regenerating scrub – p.15.

The forestry section on pgs 45 and 46 refers to both native and exotic forestry and identifies mechanisms to achieve greater carbon sequestration through re-vegetation. On pg 53, the section related to strengthening the defence of natural ecosystems is relevant to the parks and forests.

Continuing to care for the health of the native ecosystems will assist their resilience to climate change. Note that natural ecosystems, coastal communities and water security are the most vulnerable aspects of the New Zealand social-ecosystem, as shown on p.49.



The table below shows activity areas for local authorities and their relevance to climate change.<sup>1</sup>

### 3.3.1 Greater Wellington Regional Council activities

Function	Relationship to climate change response
<p><b>Resource management</b></p> <p>Planning Resource consent service Compliance and enforcement Pollution prevention and control State of the environment monitoring Community education and community engagement</p>	<ul style="list-style-type: none"> <li>• Resources, e.g. water, may become increasingly scarce</li> <li>• New technology infrastructure will be required e.g. new clean energy sources</li> <li>• New environmental indicators may be required</li> <li>• Community education and engagement programmes offer significant opportunities</li> </ul>
<p><b>Transport</b></p> <p>Regional network planning Encouraging sustainable transport choices Public transport services</p>	<ul style="list-style-type: none"> <li>• 48% of the region's CO2 emissions result from land transport</li> <li>• Sea level rise will very probably affect roading and rail networks</li> </ul>
<p><b>Water supply</b></p> <p>Collection, treatment and delivery Infrastructure Planning Conservation programmes</p>	<ul style="list-style-type: none"> <li>• Changing rainfall patterns may affect supply</li> <li>• Increasing storm intensity may have physical impacts in catchments</li> <li>• Increasing storm intensity may affect water quality in catchments</li> </ul>
<p><b>Parks and forests</b></p> <p>Parks network planning Environmental protection and enhancement</p>	<ul style="list-style-type: none"> <li>• Forests and regenerating scrub sequester carbon</li> </ul>

<sup>1</sup> Details of these functions and their relevance to climate change response can be found in the Technical Information document at [URL](#).



## 6.6 Forestry

This area of focus also requires significant discussion and input from the community. The Working Group has identified forestry as a likely alternative activity to pastoral farming in some areas and a useful erosion control activity in the face of increased rainfall and storm intensity. Thus, increased activity in this area could both assist with emissions reduction and constitute a viable adaptation initiative. One of the issues to be resolved will be that of native versus exotic species and a balance between commercial forestry and one-off revegetation initiatives will need to be established.

**Goal 1: 70-90% increase in sequestration by forestry by 2025**

**Goal 2: 180-250% increase in sequestration by forestry by 2050**

Objective	Suggested initiatives to achieve target	RC/TA responsible	Co-benefits
To achieve greater sequestration of carbon through increased forestry activity in region	<p><b>Leadership</b></p> <ol style="list-style-type: none"> <li>1. Increasing all councils' revegetation programmes</li> <li>2. Support community groups and individuals with access to expertise and plants through council nurseries</li> <li>3. Supporting research into appropriate species for planting</li> </ol> <p><b>Planning</b></p> <ol style="list-style-type: none"> <li>4. Identifying suitable areas for reforestation to be included in Plans</li> <li>5. Establishing forward programmes for reforestation of council controlled lands</li> </ol> <p><b>Pricing</b></p> <ol style="list-style-type: none"> <li>6. Identifying effective pricing incentives to encourage uptake of forestry on appropriate land</li> </ol> <p><b>Regulatory processes</b></p> <ol style="list-style-type: none"> <li>7. Facilitating land use change to forestry through rules</li> </ol> <p><b>Funding</b></p>	<p>RC/TA</p> <p>TA</p> <p>RC/TA</p> <p>RC/TA</p> <p>RC/TA</p> <p>RC/TA</p> <p>RC/TA</p>	<ul style="list-style-type: none"> <li>• Opportunity to support survival of key native flora and fauna</li> </ul>

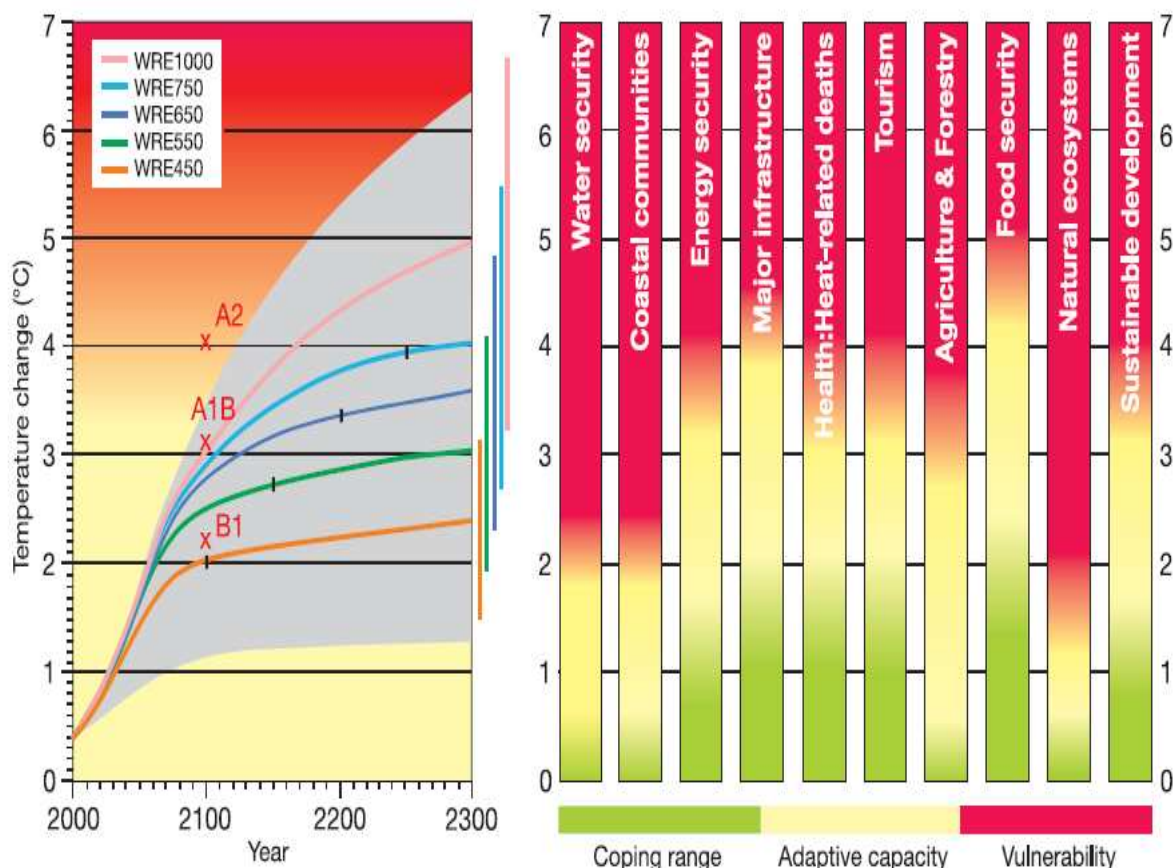
	8. Including budgets in LTCCPs for revegetation programmes and community support	RC/TA	
To ensure all regional sequestration activity is accounted for	<b>Leadership</b> 1. Working with appropriate central government agencies to ascertain accurate sequestration levels for native forests.	RC	<ul style="list-style-type: none"> <li>• Opportunity to develop exportable IP</li> </ul>

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which are most resilient and survive major shocks better. Such systems may not be the most efficient but they will almost certainly be more resilient than the most efficient ones.

The following chart, from the IPCC AR4, indicates how various aspects of our socio-ecosystem in New Zealand and Australia might react at different levels of temperature rise<sup>2</sup>. As can be seen, the capacity of different aspects to cope or adapt varies widely. Caution should be used in extrapolating from these figures to the level of the Wellington region but the concepts embodied in the graph are worth noting: each system has a range in which it copes and a further range in which it can adapt. Each system has a limit to its adaptive capacity and, at varying higher temperatures, becomes vulnerable to serious damage. A good explanation of how to read the graph is contained in the IPCC's caption.



**Figure 11.4.** Vulnerability to climate change aggregated for key sectors in the Australia and New Zealand region, allowing for current coping range and adaptive capacity. Right-hand panel is a schematic diagram assessing relative coping range, adaptive capacity and vulnerability. Left-hand panel shows global temperature change taken from the TAR Synthesis Report (Figure SPM-6). The coloured curves in the left panel represent temperature changes associated with stabilisation of CO<sub>2</sub> concentrations at 450 ppm (WRE450), 550 ppm (WRE550), 650 ppm (WRE650), 750 ppm (WRE750) and 1,000 ppm (WRE1000). Year of stabilisation is shown as black dots. It is assumed that emissions of non-CO<sub>2</sub> greenhouse gases follow the SRES A1B scenario until 2100 and are constant thereafter. The shaded area indicates the range of climate sensitivity across the five stabilisation cases. The narrow bars show uncertainty at the year 2300. Crosses indicate warming by 2100 for the SRES B1, A1B and A2 scenarios.

<sup>2</sup> A link to this report and fuller explanation of the graph can be found at [URL](#).