

Environment and Sustainability Committee

Inquiry into the public forestry estate in Wales

1. Personal Introduction

- 1.1 I am a New Zealander, and have now lived in Cardiff for eight years.
- 1.2 While my professional career has primarily been in transportation, I have researched and lectured on environmental matters, especially sustainability.
- 1.3 I am also a former elected Member of the North Canterbury Catchment Board. The NCCB had responsibility for water and soil conservation and management in North Canterbury, an area of about 42 200km², twice the size of Wales.
- 1.4 I apologise for any lack of knowledge specific to Wales and Natural Resources Wales (NRW) that may be apparent in my submission. However, the general principles would have universal application.

I have made extensive use of the NAW Research Service Quick Guide on [Forestry in Wales](#).

2. Introduction

- 2.1 Timber is an extremely valuable and versatile natural resource, which, like all others, humankind has often managed indifferently and wastefully.

We all recognise that timber is of key strategic importance in relation to the basic human need for shelter in particular, but has many other uses. The downstream production of wood-based products employs millions of people and generates social and economic well-being on a large scale.

Forests, parks, any wooded area, all contribute to climate amelioration, a low-carbon economy, wildlife conservation and species diversity, aesthetic values, recreation and personal well-being.

- 2.2 The Wales Audit Office (WAO) emphasised the need of the NRW to develop more financial resilience in the face of the declining sales value of timber by diversifying its sources of income.

While the world price of timber will fluctuate, the current prices probably reflect an over-supply, significant quantities of which are derived from non-renewable resources and from sources which ought to be afforded much greater protection for a variety of ecological reasons.

Global demand for timber will rise, especially because the amount of embodied energy in processed timber products is relatively lower than that in concrete or steel. Timber will increasingly substitute for those industrial materials given the unavoidable rise in energy costs.

One might therefore anticipate that once such resources are exhausted or more resolutely controlled, global supply might decrease and prices rise again.

The implication is that what appears to be of low-ish value now, may not be in 10 - 20y.

- 2.3 Notwithstanding the above, the critical, even pivotal, role of forests in Wales (and globally) should never be subservient to commercial considerations. The WAO is out of its depth if it treats environmental values in any cavalier manner, and may have set too narrow a remit in its examination.

It is essential that the forest cover of Wales be maintained and extended, whether as part of the NRW estate, under the guidance or management of NRW's forestry staff or under private management.

- 2.4 The WAO should take full cognisance of the measurable and unmeasurable value of the forestry estate in Wales. While the revenue from recreation and tourism centred on forests may not necessarily accrue to the NRW, it does to the GDP of Wales.

- 2.5 While I take issue with the WAO in the above respects, it would nevertheless be in the interests of forestry in Wales were the NRW to diversify its sources of income.

- 2.6 In New Zealand, a distinction is made between production (commercial) forestry and protection forestry. I recommend that NRW consider the implications of this policy and its potential application in Wales.

Production forestry generally employs short-rotation softwoods (*eg. pinus radiata*) in large blocks which can be clear-felled with little serious environmental impact.

Protection forestry generally employs long-rotation (and high value) hardwood species in areas where soil stability and/or water quality are issues. Even in environmentally sensitive areas, some trees are of such value for special-purpose uses that they have been extracted by helicopter, leaving the surrounding vegetation intact.

3. Afforestation

- 3.1 I strongly support the efforts of NRW to increase tree planting, and applaud the diversity of species (32) utilised in recent times.

However, this effort has been comparatively modest to date.

- 3.2 Given the employment potential of a wood-based economy, I recommend substantially increased investment by the Welsh Government *via* the NRW, in conjunction with private landowners if required, in forestry – planting, processing and marketing.

I have been given to understand that a number of hill-country farms in Wales, largely grazing sheep and consequentially grass-covered, are heavily subsidised. I have no objections to subsidy *per se*, but consider that some farms in this position should be phased out and converted to forestry as representing better value for money for taxpayers.

- 3.3 Transportation of timber by road has significant local impacts. It should be accomplished by rail wherever possible. Strategically-placed forestry development could contribute to the business case for new, reinstated or even light rail lines in Wales.

4. Water Conservation and Management

- 4.1 I am not aware of the extent to which, and to what degree of fineness water catchments have been mapped in Wales. This should surely be the basis of future water and water quality management.

- 4.2 Watercourses should be protected from the runoff from grazing and all other agricultural activities by riparian strips. These are prime areas for recreation and should be planted primarily with protection species. If these included occasional nut and fruit trees, they would come to be respected and valued even more by the public. Birds and other wildlife would flourish.

- 4.3 Tree planting in stream and river catchments should also be carried out for water retention purposes. This would complement other water harvesting techniques, which should be deployed more extensively.

5. Energy Production

- 5.1 While the lack of a clear energy policy and the commitment to nuclear in Wales, let alone the UK, continues to hinder the development of many renewable energy schemes, energy independence for the regions of Wales is a wholly worthwhile objective.

I am not aware whether a comprehensive audit of the energy resources in the NRW's estate has been carried out, but their exploitation ought to be prioritised. Ideally, these should be developed in conjunction with local communities, complementing other energy sources (wind, wave, geothermal etc) that may be available. Initiative is required in this area.

- 5.2 Wood-burning for heating and cooking (or electricity production) is usually an inefficient process. However, highly-efficient two-chamber wood stoves should be promoted – 2kg of wood can heat a whole house for an evening, and cook a meal. Wetbacks (a New Zealand term, not American slang) installed in stoves can also provide hot water.

All wood stoves on sale in Wales should be energy-efficiency rated.

- 5.3 Collection of forest residues for biomass plants is likely to be of marginal benefit in energy terms, given the cost of transportation and other considerations. Forest residues are best left for the forest floor ecosystem to exploit and convert to soil.
- 5.4 I understand that the kinetic energy of trees in the wind can be harvested, but know nothing more about the technology. Were this feasible, it might be enhanced by planting in particular sequences to optimise the output. More research should be considered.

6. Climate Amelioration

- 6.1 Large-scale forestry will assume growing importance on a global scale as further climatic instability becomes apparent.
- 6.2 Trees absorb very large amounts of carbon dioxide, and have a lower albedo than the typical pale grasses found on hills and mountains in Wales (eg Snowdonia).

Increasing the tree cover of Wales would be beneficial in reducing the albedo levels...

Studies by the Hadley Centre ... found that new forests in ... midlatitude area[s] tended to cool...

<http://en.wikipedia.org/wiki/Albedo#Trees>

7. Diversification

- 7.1 My submission has suggested a number of ways in which NRW forestry might diversify. But it will require initiative, leadership and empowerment, and probably additional skillsets.
- 7.2 I understand that NRW is the repository of many high-level skills that may have application to consultancy.

I recommend that NRW staff be encouraged to upgrade their qualifications and exploit any opportunities for international experience through the UN and its subsidiary bodies.

There are many countries that could benefit from the expertise that NRW has in forestry and other aspects of its work.

8. Conclusions

- 8.1 The primary objectives of NRW must include the conservation, management and protection of the natural resources of Wales.

NRW has an obligation to apply holistic ecological principles to its management of these

resources throughout the country to ensure their continuity and sustainability.

- 8.2 There is much wealth in the resources of Wales which could be exploited on a sustainable basis. Quick wins and fire sales should be avoided.

A long-term strategy that is resilient enough to withstand the ever-changing political ebbs and flows should be developed that gives priority to NRW's primary objectives.

- 8.3 The NRW estate should be extended whenever feasible.

Extensive afforestation of the uplands of Wales would have immense and sustainable benefits, in the short- and long-terms for employment, water quality, water management, recreation, wildlife habitats, energy production and climate amelioration.

T N D Anderson BSc BA MSc FCILT

16 May 2014