

Alternative conifers: different perspectives

East Lothian-based Alba Trees Plc – the UK’s largest container grown forest nursery – hosted a meeting of the Royal Scottish Forestry Society on 05 October to discuss the increasingly relevant topic of ‘alternative conifers’.

Although billed as ‘The Nursery Perspective’, a number of speakers from across the forestry industry were in attendance to give their views on the use of these species.

Alternative conifers for Scotland: past record and future opportunities
 Dr Scott McG. Wilson stressed the need to diversify the current stocking mix was discussed and some of the reasons given were to increase resilience to the emerging threat of pest and disease, to take account of future climate change, to facilitate silvicultural diversification and to meet the increasing demand for external timber cladding for use in construction.

Scotland has a long record of introducing and testing additional species, for example in arboreta, forest gardens and scientific trials. Effective silviculture has been established for Douglas fir and Norway spruce. Scottish forestry has some experience of western hemlock, wester red cedar, Serbian spruce, grand fir and noble fir, however, further trialling is required as well as provenance and silvicultural investigations. There are other species present, but these are less well understood and include coastal redwood, Pacific silver fir and Japanese cedar (read more on p19) and cypress.

Scott identified that these ‘alternative’ coniferous species display options for use on more sheltered, better drained and fertile sites of lower slopes and valley bottoms in addition to Sitka as part of the species mix. Scott closed by stating that tree breeding and provenance trials continue to be important and that nurseries should focus on these species, but more knowledge needs to be gathered amongst foresters and the processing sector.

Nursery perspective on alternative conifers

Alba Trees Managing Director Rodney Shearer stated that the nursery has grown a number of ‘alternative conifers’ over the years and continues to do so to meet the demands of forest managers interested in diversifying their planting stock.

Of the 9,338,252 trees sold by Alba in sales year 2016-17, 5,481,811 (58.7%) of these were conifers. Of all conifers sold, over 85% were Scots pine or Sitka spruce – meaning that a limited percentage of the nursery’s sales were made up of alternative conifer species.

Despite some interest, nurseries are reluctant to



Picture: www.pinterest.co.uk/source/itascagreenhouse.com/

upscale alternative conifer production in case there is insufficient demand from the market.

Additional problems include the sourcing of seed and seed costs. These costs, in addition to a high proportion of crop failures and the increased time required on the nursery does mean that some alternative conifer species are considerably more expensive than other commercial plants. For example, seed grown Sitka spruce is sold at an average price of £0.24 per plant. Grand fir sells for £0.40 and coastal redwood for £0.70.

If the market exists, the nurseries will do what they can to supply the required plants – but future research in the following areas is required:

- UK seed sources versus imported seed sources
- Understanding adaptation and performance of introduced species
- Biosecurity risks of new species
- Alternatives to seed production.

A forester’s perspective

Andrew MacQueen, Forest Manager, Tilhill Forestry, raised the question forest managers should be asking themselves – “how do we do alternatives well”, rather than “should we, or shouldn’t we.”

Andrew discussed how alternative conifer species have a lot to offer, but that they cannot be shoe-horned onto unsuitable sites – these species can perhaps be used in conjunction with Sitka, but only if site conditions are adequate. There needs to be a move back to a greater focus on silvicultural skills and techniques that puts the right plants in the right areas, versus a blanket usage of Sitka on better

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DIVERSIFICATION

>> ground where alternative conifers or even productive hardwoods could be used.

Public/Forest Enterprise perspective

Alan Gale (Resilience Manager, Forest Enterprise Scotland) outlined the Forest Enterprise Scotland's land management planning process and introduced the group to the rationale behind FE's restocking species choice. The public forestry sector has different aims to the private trade - FES has to strive to meet the Scottish Government's ambitions as well as ensuring a supply of productive timber.

Suitability of alternative conifers for construction grade timber

Dr Steven Adams (Research Fellow, Centre for Wood Science and Technology, Edinburgh Napier University) summarised the current knowledge about the properties of the candidate species, compared to Sitka and detailed what the industry is doing to get more information about that.

Considerable work has been done by the Strategic Integrated Research in Timber (SIRT) group since 2003 on testing the properties of tree species for construction grade timber. Douglas Fir has been identified as fairly suitable, while a recent paper by Forest Research has demonstrated the qualities of noble fir, western hemlock and western red cedar. Testing is also being carried out on silver fir, Japanese cedar and Serbian spruce.

Steven advised that a timber species survey has been conducted amongst timber processors who were asked to give their opinions on various alternative species. The results of this survey are awaiting analysis, but may be useful. Steven ended on an interesting note. Why not consider productive hardwoods, i.e. birch, sycamore?

Plant Breeding

Dr Steve Lee (Science Group & Programme Leader, Forest Research) discussed the importance of the best adapted seed source and advised that their had been limited work carried out in the breeding of alternative conifers. He posed the question "do we know best provenance?"

Forest Research are revisiting historic experi-



ments from the 1930s and are looking to select stands (and individuals within stands) to start a breeding programme.

Where are the good stands? Steve noted that it was critical to be vigilant when collecting seed from small, obscure stands - to ensure that individuals aren't related. Genetic markers can be used to identify this.

Seed orchards could be created (by selecting individual good trees from various stands). This isn't always guaranteed, but should be an improvement on the native range. Genetic testing can be carried out to establish if they are really better and, if so, seed can be collected and grown on in the nursery. It was noted, however, that this process was very expensive.

Tree breeding and selection is likely to be low key unless there is a major cash injection or significant interest in a certain species.

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Attendees of the RSFS meeting held at Alba Trees nursery on 05 October 2017

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