

INTRODUCTION

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With the exception of accelerated natural regeneration (ANR), all methods of forest restoration involve tree planting (either seedlings or seeds). In any programme involving planting native trees, primary concerns include selecting appropriate species to plant, identifying individual trees, from which to obtain seed or cuttings and nursery production of planting material. If chosen species cannot easily be propagated, or the quality of the planting material is low, or if the species are not suited to the site being planted, the planting will probably fail. Consequently, species selection and technologies for growing and planting seedlings are crucial to the success of any natural forest restoration programme.

The first paper in this part concerns nursery technology and tree species selection for restoring forest biodiversity in northern Thailand. It draws on experiences gained from the Forest Restoration Research Unit's programme to illustrate the complexity of the task faced by any project aimed at restoring tropical forest to severely degraded land. Tropical forest ecosystems are complex and many contain large numbers of tree species; the example given is 626 species in Doi Suthep-Pui National Park. BLAKESLEY *ET AL.* describe the "framework species method", originally developed in Australia by Nigel Tucker and his co-workers (GOOSEM & TUCKER, 1995; LAMB *ET AL.*, 1997) and show how this has been applied locally in northern Thailand. It is essential, of course that, whatever its other attributes, any framework species must be relatively easy to propagate in a low-technology tree nursery. The importance of quality is also discussed, since it is essential that any nursery-produced seedling must have the best chance of survival following planting. One crucial aspect of nursery production is scheduling; this is introduced by BLAKESLEY *ET AL.*, with more information on specific examples given by KUARAK *ET AL.*

A specialised area of nursery production that could be very important in future planting programmes is the use of mycorrhizal inoculum. Symbiotic mycorrhizal fungi are important because they colonise the tissues of fine roots and help plants obtain mineral nutrients from soil. Arbuscular mycorrhizae (AMF) discussed in SETIADI's paper, can help to produce high quality planting stock. SETIADI describes his work in Indonesia over recent years which illustrates the potential for AMF application, both to enhance the performance of tree seedlings in the nursery, and also their establishment and growth in restoration sites. Other factors affecting establishment and survival of seedlings in restoration sites include competition with weeds, spacing, shade and fire control. ELLIOTT *ET AL.* specifically address the issue of fertiliser application. There is very little data available to guide the timing or amounts of fertiliser that should be applied to aid establishment and growth of the majority of native tree species. ELLIOTT *ET AL.* present a preliminary study on the effect of different

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fertiliser regimes on the performance of six native tree species, planted to restore degraded forest in northern Thailand.

The final two papers in this part focus on the selection of species for planting. NGHIA, discusses the use of native tree species in various planted forest types and considers the importance of biodiversity conservation in future decisions on species selection. PEDERSEN presents a case study of several workshops organised by FORGENMAP in Thailand to identify 'priority' tree species for different uses. It is interesting to note that although some 200 species were identified as having potential conservation value, the FORGENMAP workshop participants could envisage little demand for planting material. This example demonstrates that, outside of this conference, many people do not consider planting native tree species for conservation purposes. There is clearly much further scope for conservationists to raise awareness of the value of species selection and planting for forest restoration for wildlife conservation.

REFERENCES

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