

**Forests for the Future: Growing and Planting Native Trees for Restoring Forest Ecosystems**, edited by S. Elliott, D. Blakesley and V. Anusarnsunthorn. Forest Restoration Research Unit, Biology Department, Faculty of Science, Chiang Mai University, Chiang Mai, 1998. Pp. 60.

This pamphlet is essentially the experiences learned by the Forest Restoration Research Unit (FRRU) on the identification of suitable plants, seed collection, propagation and planting for restoration of native tree species on degraded and/or cleared lands. The endeavor is obviously a noble and timely one given the state of Thailand's forests. Only 20% of forestland now remains, much of it now restricted to national parks, and much illegally logged and degraded. The objectives of FRRU were: i) to develop the tools for studying restoration of natural ecosystems by investigating the autecological characteristics (taxonomy; seed, fruit, and flowering phenology; seedling physiology) of selected native tree species. ii) to understand the ecological processes of forest degradation; iii) to identify suitable tree species for outplanting in the field; iv) to develop successful propagation methods; and v) to develop techniques for forest restoration.

The pamphlet provides a nice overview of the work done by FRRU. However, it does not provide a detailed analysis of the species and restoration techniques used. There are several inconsistencies that should be remedied. For example—"primary species grow well in the low shade of deforested sites." Usually deforested sites are considered to be exposed to high amounts of irradiance. In future work it would be useful to know the growth rates of the different species used and the establishment successes of plantings on different sites. It would have been useful to have been provided the statistical analyses of such plantings along with more detailed accounts of the experiments performed, and site histories, soil analyses and planting designs for at least some of the failed and successful plantings that were done.

The "framework" method has been used as an all-encompassing system. My knowledge of forest restoration techniques is that no one method is suitable for the varied social and biological circumstances that face forest restoration. I would encourage a more site-specific approach that might require other techniques—such as the use of exotic plantations—that have been reported to act as nurse systems for second growth forests; or the planting and testing of site-specific tree species within mixed plantation systems that are specifically designed to develop as a successional analog to native forest. Such models may use either the basic underlying concepts of initial or relay floristics depending on the circumstance.

For this reason, the pamphlet serves as a good extension document for a lay readership. But a follow-up is needed describing the successes and failures of reforestation in detail. In its current form this pamphlet would be useful to translate into Thai for extension foresters to disseminate to local landowners and government officials.<sup>1</sup>

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<sup>1</sup> Editor's note: the pamphlet does indeed have a Thai version.

