**Explanatory Notes - Flowchart 1**

Author’s note; in this flowchart, auxillary roles and scientific disciplines involved have been excluded, but included Wood Chemistry, Timber Physics, Wood Seasoning practices, Sawmilling and Plymilling techniques. They all played significant roles in this work.

Notes:

a. * nominates the overall aims of Branch policies and research groups. The total number of species, many of which were not utilised at commencement of this research, exceeded 350, but, except for only specialised rainforest timbers for veneer and plywood production or temporary uses such as packing cases, the species utilisation was generally restricted to the “Primary Species” and then only to the visible heartwood and larger girth classes.

b. Pathways are defined as research and applied sequences or aspects which required, or were shown during the full development of the programs to be necessary, to achieve a successful result.

Importantly, as the preservation roles developed, it was apparent that this was a fundamental scientific subject and for it to be soundly based on logical principles, the author found it necessary to establish essential data on assessments of the separate zones in timber, some of which were not treatable by commercially available means. As the supplies of native gymnosperms were limited and as softwood plantations were only recently established, angiosperms were the major timber species requiring to be treated, this explains need for research on properties of these species, the wood/gas/liquid/solution relations, and on both thermal and aereodynamic characteristics.

c. Preservation is shown as Pathway A and utilisation aspects needed for effective use of these species as B. The inter-relationships of Pathways A and B are shown.

d. Co-ordination of properties with service and hazards with research by specialists eg. entomologists is shown by Pathway A2. It extended to geoclimatic conditions which affect severity of hazards (and wood treatability).

e. Pathway A1 shows the separation into zones of timber, leading to studies on sapwood, its (A3) identification from heartwood (which was found to be “untreatable”) and this was (A4) primarily the responsibility of Pathway B.

Studies were necessary to quantitatively evaluate starch (A3 -1) and a range of significant properties in sapwoods of different spp., which affect their treatability.

f. Separation of impregnation practices from mechanical means or surface protection is shown as A5 -1, with the interactive stages of development of conventional means of preservation shown in summary in Paths A6 a-d.

These were necessary to enable the author to construct (A7) joint general species treatability classifications and process operating conditions or process variables, eg. time at temperature (termed schedules), of the large range of hardwood species (including imported spp.) to be handled by the preservation industry. This included an in-depth study of preservative distribution between the softwoods and hardwoods, shown to be significant.