Summary of:
Forest Growth and Yield Information and Knowledge; Pearson Timberline Forestry Consultants; 1994; Prince Albert Model Forest Assoc. Inc., Prince Albert, Saskatchewan. 51 p.

EXECUTIVE SUMMARY

Understanding forest stand growth (changes in stand characteristics over time) and yield (amounts of stand attributes or values that can be obtained at a point in time) is crucial for developing long-term plans for sustainable forest management. This report summarizes forest growth and yield knowledge for natural and managed stands of black spruce (Picea mariana), white spruce (Picea glauca), jack pine (Pinus banksiana), and trembling aspen (Populus tremuloides), following a brief review of the basic concepts site (an area's potential for tree growth) and stocking (the extent to which an area's site potential is currently being realized). Emphasis is placed on knowledge derived from or applicable to sites in or near the Prince Albert Model Forest (PAMF).

Black spruce growth and yield information is based on analysis of data from a set of permanent sample plots (PSPs) established in 1951 and remeasured in 1961, 1970, and 1971. Yields vary from 0.9 m3/ha yr on poor sites to 2.4 m3/ha yr on good sites. Analyses of this data were published in 1953 and 1973.

White spruce growth and yield information is based on analysis of data from a set of PSPs established in 1949 and remeasured in 1954, 1956, 1959, and 1966. Yields vary from 1.9 m3/ha yr on poor sites to 4.3 m3/ha yr on good sites. Analyses of this data were published in 1951, 1955, 1957, 1962, and 1971.

Jack pine growth and yield information is based on analysis of data from a set of temporary sample plots established in 1950. Yields vary from 1.3 m3/ha yr on poor sites to 2.8 m3/ha yr on good sites. An analysis of this data was published in 1956.

Aspen growth and yield information is based on analysis of data from a set of PSPs established in 1949 and remeasured in 1951 and 1955. Yields vary from 2.0 m3/ha yr on poor sites to 3.5 m3/ha yr on good sites. Analyses of this data were published in 1956 and 1957.

A summary of available knowledge, along with a questionnaire, was forwarded to fourteen experts and practitioners familiar with forest growth and yield in the boreal forest in general, and in Saskatchewan in particular. Twelve responses were received and analyzed.

Active growth and yield programs are in place within SERM, forest industry, and CFS. Locational data were obtained for the 71 active PSPs within the PAMF boundaries. A digital map coverage of these PSP locations was prepared.

Few of the published growth and yield reports are being used by industry or SERM. A Biometrics Working Group has been formed, which is having the following new products prepared:

- natural stand yield tables;
- growth and yield estimation tools; and
- a locally calibrated stand dynamics model.

In addition, industry and SERM are continuing to remeasure and install PSPS. Increasing attention is being paid to collecting ecological data, to improve abilities for

forecasting ecosystem dynamics under various forestry practices and changing environmental conditions.

The report concludes with four recommendations for the PAMF:

- participate directly in the Biometrics Working Group;
- assess existing PSPs in and near the PAMF area;
- pursue cooperative opportunities with the CFS Climate Change Group; and
- consolidate available data into a mixedwood stand dynamics model.