Alberta
SUSTAINABLE RESOURCE DEVELOPMENT

ALBERTA SCALING MANUAL

INTRODUCTION

1.0 Introduction

The Alberta Scaling Manual is available online on the Alberta Sustainable Resource Development website, or it may be purchased in the future from the Hinton Training Center.

This manual is subject to periodic revision.

1.1 Authority

The Forests Act authorizes the Minister of Sustainable Resource Development to make regulations "governing all matters pertaining to scaling and scalers." The Scaling Regulation (AR 195/2002) covers scaling activities in Alberta.

This manual contains procedures for scaling as approved by the Minister, and as required by the Forests Act and all associated regulations.

The Canadian Standards Association's *Scaling Roundwood / Measurement of Woodchips, Tree Residues, and Byproducts (0302.1-00 / 0302.2-00)*, National Standards of Canada, specify the minimum measurement standards for Canada. One of the goals of this manual is to ensure timber scaling in Alberta will meet these standards.

1.2 Principles

The Alberta Scaling Manual was created using the following principles as a framework:

1. To ensure provincial consistency and uniformity in the implementation of scaling practices and procedures.

2. To ensure the sustainability of Alberta's forests for the economic and social benefit of present and future Albertans.

3. To maximize the usability of timber through proper accounting and adherence to legislation and guidelines.

1.3 The Role of Scaling in Forest Management

1.3.1 Definition of Scaling

While timber cruising, permanent sample plots, and remote sensing are some of the methods used to estimate the volume of *standing* timber, scaling is the process whereby the volume of *harvested* timber is determined.

Scaling may be described as the process of determining harvested timber volume through direct measurement and/or through a sample scaling method.

Direct Measurement

Scaling timber through direct measurement is a determination of the sound wood volume through a process whereby all individual logs, trees, or decks of timber are measured.

Sample Scaling

This is a method of scaling whereby random samples are selected for direct measurement and applied to a total.

Mass scaling is the most commonly practiced scale method employing sample scaling. Mass scale operators use weight to volume ratios to determine timber volumes. When hauling in many loads, it is impractical to scale every load. In order to determine the volume of all timber hauled in from a given area (a population), a mass-scale operator will weigh every load, but only scale a random, representative sample from the total number (sample loads). These sample loads therefore have a known weight and a known volume, and by dividing the weight by the volume, a weight to volume ratio is the result.

Every sample load contributes to the ratio data pool, and this ratio is then applied to the rest of the population's loads that have only been weighed. The number of loads that must be scaled from a population is based on a framework of statistics.

1.3.2 Uses of Scaling Data

Timber scaling is an integral part of sustainable forest management as it provides a means of determining a reliable, accurate estimate of harvested volumes to compare against that, which has been allocated for harvest.

Scaling data is used for such purposes as:

- Determination of Crown dues payable
- Allowable harvest level monitoring
- Statistical information from a given area
- Research and development

In order to properly manage the forest resource it is essential that accurate data is collected and analysed so that we may conduct operations in a sustainable manner.

The following section provides a listing of websites that provide additional resources related to scaling and specifically related legislation, a scaling compilation program, and policy for certification of scalers.

1.4 Resources

The following is a list of supplemental resources pertaining to scaling:

- **Alberta Sustainable Resource Development** website:
  http://www3.gov.ab.ca/srd/forests/managing/

- **Forests Act** on SRD website:
  http://www3.gov.ab.ca/srd/forests/fmd/directives/fa.html
  From Queen's Printer:
  http://www.qp.gov.ab.ca/documents/Acts/F22.cfm?frm_isbn=0779701747

- **Timber Management Regulation** on SRD website:
  http://www3.gov.ab.ca/srd/forests/fmd/directives/tmr.html
  From Queens Printer:
  http://www.qp.gov.ab.ca/documents/Regs/1973_060.cfm?frm_isbn=0779709470

- **Scaling Regulation** from Queens Printer:
  http://www.qp.gov.ab.ca/documents/Regs/2002_195.cfm?frm_isbn=0779713567

- **Directives:**
  http://www3.gov.ab.ca/srd/forests/fmd/directives/#policy

- **Micro Log Scale Program and Manual**
  http://www3.gov.ab.ca/srd/forests/managing/sustain/index.html

- **Alberta Scaling Permit Program and Procedure Manual**
  http://www3.gov.ab.ca/srd/forests/managing/

- **Alberta Scaling Forms**
  http://www3.gov.ab.ca/srd/forests/fmd/directives/index.html - webforms