Title	**Plan and implement forest inventories to obtain information for forest management**		
Level	**5**	**Credits**	**5**

Purpose	People credited with this unit standard are able to: describe types and uses of forest inventories; describe sampling methods used in commercial forestry; demonstrate knowledge of the requirements for a forest pre-harvest inventory; plan and implement a pre-harvest inventory; and process plot data and produce reports.

Classification	Forestry > Forest Inventory

Available grade	Achieved

Guidance Information

References
Atlas Cruiser User's Guide. (2002). Rotorua: New Zealand Forest Research Institute Limited (referred to as the manual in this in this standard), available at Forest Research, Private Bag 3020, Rotorua 3046, New Zealand, website http://www.scionresearch.com.
Colley, M. *Forestry handbook / New Zealand Institute of Forestry Inc.* (4th ed). (2005). Christchurch: New Zealand Institute of Forestry Inc.

Outcomes and performance criteria

Outcome 1

Describe types and uses of forest inventories.

Range survival assessments, pre-operational assessments, mid-rotation inventory, permanent sample plots, quality control inventory, pre-harvest inventory.

Performance criteria

1.1 Types of forest inventories and their purposes are described in accordance with the reference text.

1.2 The inventory procedures for each inventory type are described in accordance with the reference text.

Range plot shape, plot size, number of plots, type of sampling, sample size, measurements taken, required level of precision.

Outcome 2

Describe sampling methods used in commercial forestry.

Performance criteria

2.1 Sampling is compared with 100% measurement methods in terms of cost, time, and precision of estimate.

2.2 Plot configurations are described and compared in accordance with the reference text.

Range circular, square/diamond, transect, bounded and unbounded, horizontal line, single stem plots.

2.3 Methods of sampling are described in accordance with the reference text.

Range simple random, systematic, cluster, double, stratified random.

2.4 Statistical terminology used to describe the accuracy and precision of estimates is explained in accordance with the reference text.

Range variance, mean, range, total, standard deviation, standard error, probable limits of error, bias.

2.5 The impact on accuracy and precision of inventory procedure is described in accordance with the reference text.

Range plot shape, plot size, sampling method, sample size, plot location.

Outcome 3

Demonstrate knowledge of the requirements for a forest pre-harvest inventory.

Performance criteria

3.1 The purpose of a pre-harvest inventory is explained in terms of how the collected data is used for different forest management functions.

Range harvest planning, marketing, rate setting, forest valuation.

3.2 Stem architecture terms used in pre-harvest inventory are described in accordance with the manual.

3.3 Measurements taken in a pre-harvest inventory are described in accordance with the manual.

3.4 Equipment used in a pre-harvest inventory is identified by name and function.

Outcome 4

Plan and implement a pre-harvest inventory.

Performance criteria

4.1 An inventory plan is prepared in accordance with the manual.

Range definition of objectives, critical data, level of accuracy and precision, equipment, manpower, maps, plot sheets, assessment techniques, data processing requirements, reporting requirements, quality assurance.

4.2 The number of plots and their shape, size, location and measurements necessary to achieve inventory purpose are determined in accordance with the reference text.

4.3 Plots are located on maps or aerial photographs and located on the ground without bias.

4.4 Stem assessment parameters are derived in relation to log product specifications in accordance with the manual.

Range branch size classes, branch angle, sweep, visual defects, out of round.

4.5 Plot measurements are undertaken to the required standard without bias in accordance with the manual.

Outcome 5

Process plot data and produce reports.

Performance criteria

5.1 The set of functions required for analysis is determined in accordance with the manual.

Range volume and taper, height/diameter, stem breakage, height and basal area growth, branch size, wood density.

5.2 Cutting strategy to achieve log product requirements is determined.

5.3 Data are entered into the processing system in accordance with the manual.
Range manual entry, field computer import.

5.4 Reports are produced in accordance with the manual.

Range precision statements, per stem and per hectare parameters.

5.5 Re-analysis of inventory data using three different cutting strategies is undertaken in accordance with the manual.

Planned review date	31 December 2028

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 January 1995	31 December 2017
Review	2	27 May 1998	31 December 2017
Review	3	27 May 2002	31 December 2017
Review	4	16 October 2009	31 December 2017
Review	5	10 December 2015	N/A
Rollover and Revision	6	28 May 2020	N/A
Rollover	7	26 April 2024	N/A

Consent and Moderation Requirements (CMR) reference	0173

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Muka Tangata - People, Food and Fibre Workforce Development Council qualifications@mukatangata.nz if you wish to suggest changes to the content of this unit standard.