



RADIATA MANAGEMENT TECHNICAL NOTE (IFS)

Number: RTN-003
Date: September 2010

Permanent Sample Plot Database - Administration and Measurement Program 2009

Summary

The Scion Permanent Sample Plot (PSP) Database stores information on 8,275 current *P.radiata* plots. Some 35% (2,902 plots) of these plots are controlled by FFR. The measurement of these plots, and database administration falls under the FFR Radiata Pine Management theme. Between April and October 2009, 757 *P.radiata* PSP's were measured as per the scheduled work programme. This period covers the 4th quarter of the 2008/09 and the 1st quarter of the 2009/10 financial year. Data from all 757 plots were entered in the PSP database and error check reports produced with corrections carried out where required. Of the 757 plots, 55 plots were growth monitoring plots and the remaining 702 plots were in experimental trials focusing on genetic gain and various silvicultural regimes. The Scion field crew completed all the measurements as scheduled, with some in-kind help from selected forest owners.

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PSP Database

The Scion Permanent Sample Plot (PSP) database stores 2,902 current *P. radiata* plots controlled by the Future Forest Research Radiata theme (35% of all Radiata plots on the database). These plots were previously managed by the Stand Growth Modelling Cooperative, Farm and Forest Plantation Management Cooperative and various other Government funded projects.

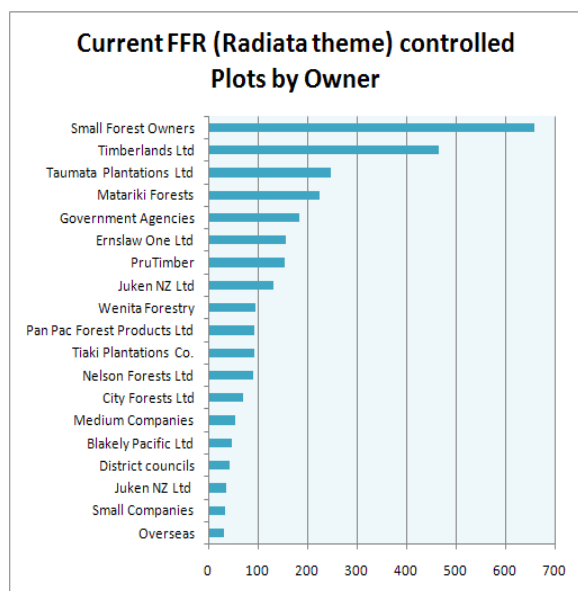


Figure 1. Current plots by estate owner

These plots are located in forests that are owned or managed by large forest estate

owners, timber management organisations, government agencies and small companies with a few plots located off shore in Australia, (Figure 1).

The current PSP's are located from Aupouri Forest in the far north to Hillfort Forest, Invercargill in Southland. It is noticeable that there are very few plots in the Taranaki and Westland regions as seen in Figure 2.

PSP Establishment 2009

One trial (FR 440) was established this year in Invercargill as part of the Silviculture x Traits trial series. This is the fourth trial established in a series of five. The purpose is to test genetic material across a range of sites and silviculture treatments:

- Structural, high wood density, multimodal, small branch genotype
- Appearance solid wood products of long internode genotype
- Volume production, with high GF breeds

Thirty-six plots were established, with planting density ranging from 600 to 1500 stems/ha. There are six different seedlots with three thinning and two pruning treatments. The trial site is ex-pasture and relatively clean, but may be exposed to SW winds.



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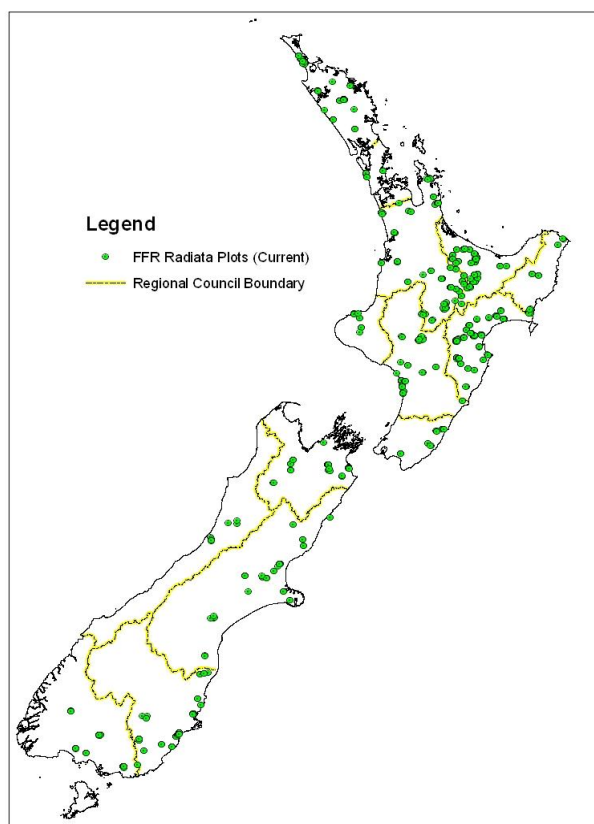


Figure 2. All current FFR Radiata theme plots

PSP Measurement 2009

The Scion field crew measured 757 *P.radiata* plots nationwide. The measurement programme began in the first week of April 2009 and was completed in October 2009. This covers the fourth quarter of the 2008/09 financial year and the first quarter of the 2009/10 financial year. 'In-kind' help was used in some forests, but this was often difficult to manage and consequently was not always available when requested.

This year wood quality measurements (density and stiffness) were collected at the same time as the growth measurements in selected trials. This was carried out in the six 1990 Silviculture Breed Trials and two of the Ultra-high Pruning Trials (a total of 58 plots and approx 1800 trees).

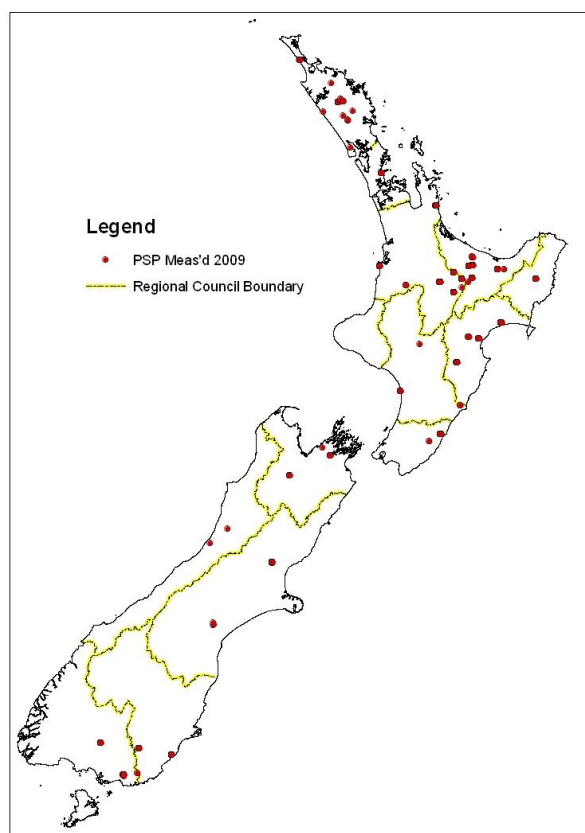


Figure 3. Plots measured in 2009

Figure 3 illustrates the spread of plots measured during the 2009 calendar year by the Scion staff.

All plots on the PSP database are coded for purpose, primarily as 'growth' or 'experimental' plots. The experimental plots are further classified in to types thinning, pruning, genetic gain, or other management treatments.

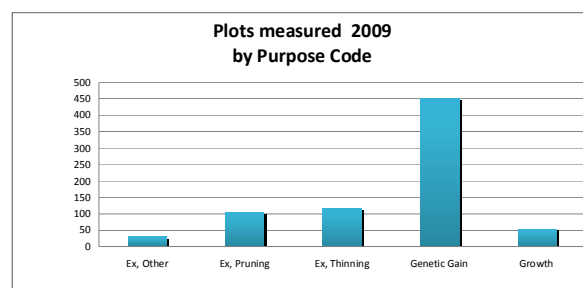


Figure 4. Number of plots measured by purpose



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A summary (Figure 4) of the number of plots measured in 2009 shows that the majority of plots in this theme have been established with a genetic gain purpose.

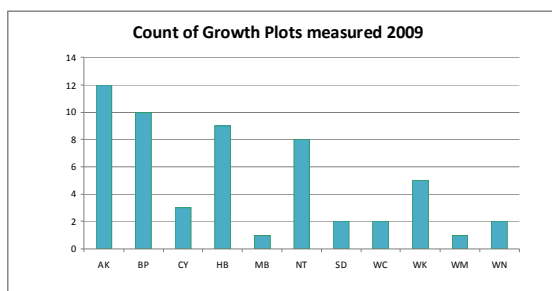


Figure 5. Number of growth plots measured by region

A regional summary (Figure 5) shows that the Auckland region had the most measured plots classified as growth.. The Bay of Plenty had the largest number of experimental plots (Figure 6) measured followed by the Waikato region. Being close in proximity to Scion, this region has traditionally provided the majority of experimental trials.

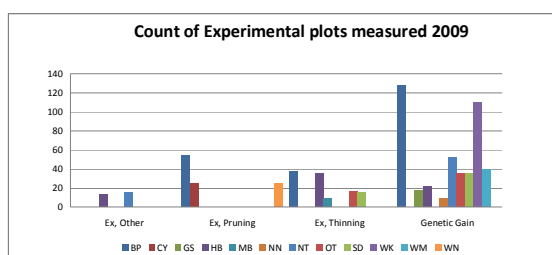


Figure 6. Number of plots in experimental groups measured by region

Administration

The PSP administrators, together with the field crew, plan the measurement programme. Before the measurements begin the following jobs need to be completed:

- organising the forest/trial maps
- arranging accommodation
- arranging access permits forests and contact details for in-kind help when provided
- organising field equipment and data-logger software
- creating previous measurement files and uploading to the data-loggers

Once the data is collected the following tasks are completed:

- downloading and processing of new data
- error checking and summarising data
- correcting any errors
- adding plot history information related to silvicultural treatments
- producing reports for the forest owners

General administration of the database also includes updates to the ever-changing forest list and ownerships, updating MPK tables, troubleshooting 'bugs' on the database, and managing the records of data updated.