

## **IMPROVING THE PRIVATE SECTOR PRODUCTION FORECAST**

### **PURPOSE**

1. To improve the accuracy of the private sector production forecast. The primary short term (2010) objective is to improve confidence in PS forecast outputs by improving the quality of crop data underpinning the forecast. This will be achieved through greater engagement of the sector with the process and providing data to it and co-ordinating this with existing data collection methods (NIWT).

### **BACKGROUND**

2. Until the last few years, private sector timber production has been lower than that from the FC. This fact, accompanied by a visibly increasing supply of timber from the published national forecasts has provided a degree of reassurance that future timber supplies will be adequate to support significant investment in timber processing.
3. In 2002 timber production from the private sector (PS) in Scotland exceeded that from the Forestry Commission (FC) for the first time. With 35% of the forest estate in Scotland FC production will continue to decrease as a percentage of total production over the next 20 years. The rising production curve from previous published forecasts has indicated the increasing prominence of the PS, but the 2005 forecast represented the first forward look at availability where the PS is responsible for the majority of the volume. Accordingly, the expert groups involved with specifying the assumptions used in the forecast looked at the key drivers, such as yield class and thinning practise, in much more detail than for previous forecasts.
4. Given the low level of mensuration activity and crop inventory data held by the PS, the group felt that using the yield class distributions for different species in Forestry Commission woodlands in each geographic zone represented the only consistent and transparent source of yield class data.
5. Despite considerable assistance from private estates and management companies it has not proved possible to arrive at a robust and comprehensive set of yield class estimates from such sources. The Scotland Forecast Working Group has recommended that the issue of yield class data availability is addressed as a priority, noting that this is essential to attain long term stability within the Private Sector forecasting process, which would help to underpin its usefulness to industry. The need, therefore, for greater accuracy and precision of the private sector forecast is urgent.

### **TERMINOLOGY**

6. There are several types of production forecast, which are currently produced. It is important to understand the differences between these.
  - The FC production forecast represents, in the first five years, the volume that the FC commits to produce. Later years are indicative volumes. These forecasts are based on good quality mensurational data and long term forest design plans.
  - The PS forecast is a forecast of potential availability to industry from the private sector estate. There is no commitment to bring any of this to market, though

historically production has been close to forecast. The forecast is derived from NIWT sample plot data adjusted as above for the 2005 forecast.

- The 5-yearly published forecast is a combination of the above two.

## **COMPANY DATA**

7. A 2006 study and comparison of forecast volumes and forecasting systems between a FC block at Craik, and a UPM-Tilhill block at West Buccleuch indicated a high level of similarity of outputs from the two systems. When compared to outputs based on the NIWT data for the same area, there were significant differences. This suggests that where data is held for the private sector estate, it is a more accurate indicator of volume than the NIWT data. The caveat is that NIWT and the private sector forecast are known to be unreliable at this scale. Nonetheless, there is a strong argument that PS local crop data, even where the mensurational accuracy of yield class information may be dubious, should provide better results than NIWT I data – the key is understanding where and which attributes.

## **ISSUES**

8. There are several issues, which need to be considered before deciding on the most appropriate methodology for producing a private sector forecast, which is fit for purpose.
  - Is the forecast based on NIWT data fit for purpose given the increasing percentage of production, which depends on the private sector?
  - What level of sampling frequency would be required to make the NIWT dataset forecast fit for purpose, and what would the additional cost of that be?
  - Do we need a completely new methodology for producing the PS forecast?
  - Should private sector data be incorporated into the PS forecast?
  - If so, how should this be done?

## **FORECAST DEVELOPMENTS**

9. The FC production forecast is almost 30 years old, during which time it has been added to and enhanced to deal with a wide range of new information demands and outputs. The FC Executive Board has taken the decision to support the rewrite of key elements of the forecast system in readiness for the 2010 published forecast. A key principle of the new system design will be a common core to handle both the FC and private sector forecasts. This may require a means of harmonising input data. The new forecast will be spatially linked, at some point, and is intended to offer, eventually, the capability to model climate change and other scenarios of strategic importance to the industry. One of the limitations of the current PS forecast is its inability to produce information at levels below country, and the process to do so is highly involved, specialist and time consuming. The opportunity exists for the private sector to provide more detailed inventory data once requirements and format have been specified, which will improve the accuracy of the forecast, and the usefulness of the information produced by it.

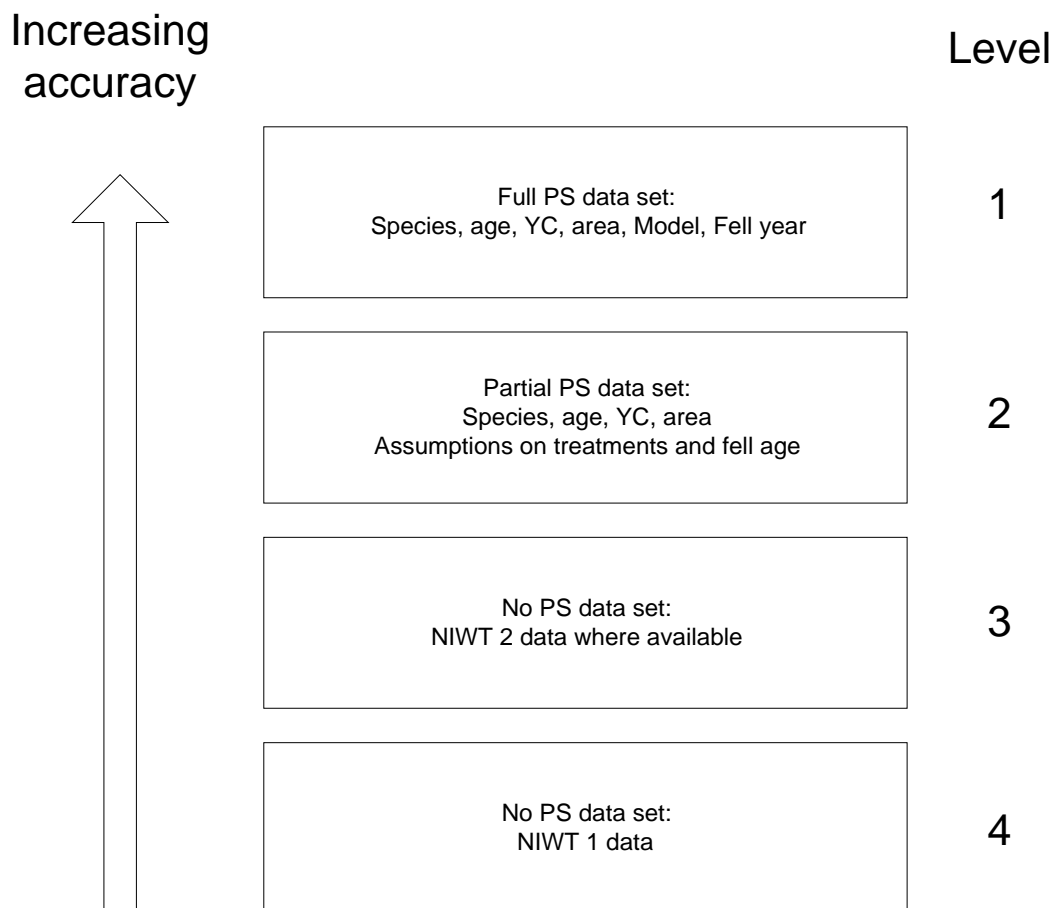
10. Better quality data from known sources will provide different forecasts from those available from NIWT data, which should serve industry's needs better. An improvement in the mensurational practice in collecting PS data to a recognised standard and format will enhance this further. Nice
11. A greater degree of local data will improve the spatial accuracy of forecast outputs in some circumstances, making the information of greater relevance, and improving its fitness for purpose.
12. The governance structure for the production forecast includes the need for a private sector data working group, which will be chaired by FC Scotland.

### **PRIVATE SECTOR WORKING GROUP**

13. There is strong support from Confor members, both growers and processors for making greater use of private sector data in the forecast. A seminar held at the Confor offices on the 30<sup>th</sup> October this year resulted in a high level of commitment from the private sector representatives present to support the incorporation of private sector data into the 2010 forecast. This forecast is seen by them as being key to making major investments in additional processing capacity over the next decade. Consideration is currently being given to nominations from the private sector to the working group.
14. The draft terms of reference, which will be discussed and agreed at the first meeting of the group are at Appendix 1.

### **OPTIONS FOR USING PRIVATE SECTOR DATA**

15. The first task of the working group will be to carry out a survey of private sector growers and agents to determine how much data is available, where it is available, how it is held, and what quality it is. A degree of ground truthing is likely to be required to confirm data quality. This will require resources, but this is not quantifiable until the scope and scale of any exercise is determined. There is a private sector growing stock project, which is ongoing, and any ground truthing should attempt to be done in conjunction with this. The aim would be to carry out the survey as a matter of urgency to allow the other parts of the 2010 rewrite process to develop suitable mechanisms for handling and incorporating the data.
16. The early survey of data availability will have several benefits. It will identify the scale and nature of the private sector data, and indicate how available it is likely to be. It will indicate where the data is held, and will be useful in determining where early NIWT2 data is to be collected. With careful planning, it should be possible to use some NIWT2 data in the 2010 forecast, a possibility that was not on offer before.
17. At this stage, we are looking at an approach based on a hierarchy of information. This will allow appropriate private sector data to be incorporated where possible, but will also ensure that the 2010 forecast will be able to be run on time, in the event of no private sector data provision. Figure 1 below demonstrates this approach.



- 18.** This approach has the benefit that it allows whatever PS data is available to be used, while having the NIWT 1 data as a backstop. It should be possible to determine confidence limits for each level of data, which should allow a better prediction of overall forecast confidence limits, when the outputs are produced in 2010.
- 19.** There will be other issues which will have to be addressed by the working group once it starts work. For example, it is likely that a relatively small number of companies and growers will be able to provide significant amounts of data for Scotland and Wales, but this may not be the case in England, where there are many more small estates and growers. The issue of whether the forecast includes everything that is growing, or only the crops which are likely to come to market will need to be considered. The use of grant mechanisms, such as forest plans, to encourage the collection of data, and who holds it, and how it is held are key issues for this forecast.
- 20.** Better quality data from known sources will provide different forecasts from those available from NIWT data, which should serve industry's needs better. An improvement in the mensurational practice in collecting PS data to a recognised standard and format will enhance this further. Consideration will need to be given as to how to bring this about.

**21.** In the future, remote sensing has the potential to reduce costs of data collection, and add value to existing data, but this is likely to be in the medium, rather than short term. There is little doubt that a combination of FC data, Private Sector data, NIWTs 1&2, and remote sensed data are likely to provide a private sector input to the forecast which is much more akin to that of the FC. This will improve the accuracy, and confidence in the predictions, and also make the provision of data to support new investments much more relevant, and simpler to provide.

Roger Coppock  
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November 2007

## **Appendix 1**

### **Private sector data working group**

#### **Draft Terms of reference**

##### **Objectives**

- To improve the accuracy and quality of the private sector production forecast
- To encourage and achieve a greater level of engagement in the production forecast process by the private sector, by using its data, where available, as input to the forecast system.
- To identify and define private sector data availability in terms of:
  - Ease of access
  - Currency
  - Accuracy and reliability
  - Confidentiality
  - Barriers to access and use
- To make the best use of existing data, where it is readily available, and agree ways to resolve any barriers to accessing it to allow straightforward data migration
- To develop a process for making the data available to the forecast at regular intervals.
- To work to harmonise data input by the private sector to the forecast towards that used by the Forestry Commission
- To define cost effective and more accurate assessment of those mensurational values with a high influence on volume prediction such as PS yield classes, area, stems per hectare etc.
- To investigate ways of reducing the costs of providing data to the production forecast
- To provide appropriate Private Sector representatives to the review process of the Production Forecast re write
- Prepare and communicate a project plan to the programme manager relating to the achievement of the above for approval by the Programme Board
- Communicate progress, risks and variances against the groups project plan to the programme manager for approval by the Programme Board

##### **Timescale**

To coincide with the requirements of the 2010 production forecast rewrite project