Department for
Business, Energy
& Industrial Strategy

NATIONAL FORESTRY ACCOUNTING PLAN OF THE UNITED KINGDOM

Forest Reference Level for the Period 2021-2025

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Contents

Chapter 1: General introduction

1.1: General description of the forest reference level of the United-Kingdom

The Land Use Land Use Change and Forestry (LULUCF) Regulation (EU 2018/841) was adopted by the European Union (EU) in May 2018. It both provides accounting rules for the LULUCF sector and sets a target that net accounted emissions in this sector be zero or less. Following article 6 of this regulation, Member States shall establish national forestry accounting plans (NFAP), including a proposed forest reference level (FRL) for the period from 2021 to 2025 and further guidance on how to do so was published by the European Commission in July 2018 (FRL guidance).

The FRL for the United Kingdom for the period 2021 to 2025 is -20 701.55 kilotonnes carbon dioxide equivalent per year (kt CO_2e yr^{-1}) including the contribution from harvested wood products (HWP), as calculated by applying the production approach and Tier 1 methods including default half-life values as defined in relevant guidance from the Intergovernmental Panel on Climate Change (IPCC Guidance).

The FRL not including the contribution from HWP, i.e. assuming a steady-state HWP pool, is -19 755.26 kt CO_2e yr^{-1}.

Within this National Forestry Accounting Plan, the Forest Reference Level has been calculated by assuming that the transition to managed forest land already occurs 20 years after the date of conversion to ensure consistency with emissions and removals reported for forest land remaining forest land in the existing greenhouse gas inventories. Following article 6(2) of the LULUCF Regulation, the UK intends to categorise cropland, grassland, wetland, settlements or other land converted to forest land as making the transition to managed forest land from 30 years after the date of conversion. This will be implemented to satisfy the criteria A.a of annex VI of the LULUCF regulation (see discussion in section 4.2). It will be realised through a technical correction to the forest reference level.

Contributions to emissions from biomass burning are included in the Natural Disturbance Background Level (249 kt CO_2e yr^{-1}) in this revised FRL. The other non-CO_2 emissions reported on managed forest land, namely N_2O emissions from soil drainage are also included in the FRL.

The FRL presented here is consistent with the UK's 1990-2017 greenhouse gas (GHG) Inventory. The FRL projection diverges from 2010 onwards, when the forest management assumptions for the reference period of 2000 to 2009 that are described in this document are applied.

1.2: Consideration to the criteria as set in Annex IV of the LULUCF Regulation

According to article 8(4) of the LULUCF Regulation, Member States shall determine their FRL based on eight criteria (a-k) below. This section described how the FRL established by the UK respect those criteria.

It also includes, as Table 1.1, a description of where the various elements listed in section B of Annex IV of the LULUCF regulation are included in the present NFAP.

> (a) the reference level shall be consistent with the goal of achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, including enhancing the potential removals by ageing forest stocks that may otherwise show progressively declining sinks;

The FRL has been set in a way that assumes a continuation of Forest Management Practices (FMPs) and patterns of biomass use as characterised for the Reference Period of 2000 to 2009. Hence, the FRL provides an accounted emission incentive for actions that lead to greater removals compared with the continuation of existing practices and equally gives an accounted emission disincentive for actions that lead to greater emissions.

The long-term development of the FRL follows the FMPs characterised for the Reference Period, but also allows for age related effects relevant for the UK forest area. The forest age class distribution in the UK is very skewed, particularly for productive coniferous forests, as a result of significant afforestation activities between 1920 and 1990, and particularly between 1950 and 1980. Relatively large areas of coniferous forest are currently reaching economic maturity and are being clearcut. The FRL is based on the assumption that these forest areas will be restocked, thereby maintaining the forest sink. This assumption is supported by the Forestry Act 1967, which allows felling licences to require restocking of forest stands in most cases. In the longer term, the FRL indicates lower levels of wood production than currently, reflecting a period during which restocked forest areas are regrowing and there is less potential for production whilst maintaining the forest sink.

> (b) the reference level shall ensure that the mere presence of carbon stocks is excluded from accounting;

Following the regulation, the FRL supports an accounting approach that covers net changes in forest carbon stocks, rather than the total existing carbon stocks in forests.

> (c) the reference level should ensure a robust and credible accounting system that ensures that emissions and removals resulting from biomass use are properly accounted for;

The FRL has been set in a way that assumes a continuation of Forest Management Practices and patterns of biomass use as characterised for the Reference Period of 2000 to 2009. Any changes to levels of harvesting or patterns of biomass use compared with those of the Reference Period will lead to accounted emissions or removals, as appropriate, depending on the nature of the changes.

> (d) the reference level shall include the carbon pool of harvested wood products, thereby providing a comparison between assuming instantaneous oxidation and applying the first-order decay function and half-life values;

The FRL has been reported with and without the contribution of HWP. Where the HWP contribution has been included, the production approach has been applied in conjunction with Tier 1 methods including default half-life values, as defined in relevant IPCC Guidance. For the FRL without HWP, the assumption has been made of a steady-state HWP pool.

> (e) a constant ratio between solid and energy use of forest biomass as documented in the period from 2000 to 2009 shall be assumed;

The ratio between solid and energy use of forest biomass was characterised for the Reference Period and has been applied for the construction of the FRL

> (f) the reference level should be consistent with the objective of contributing to the conservation of biodiversity and the sustainable use of natural resources, as set out in the EU forest strategy, Member States' national forest policies, and the EU biodiversity strategy;

The UK Forestry Standard specifies good forest management including criteria covering sustainable yield, conservation of biodiversity and natural resources such as water, as well as carbon stocks. This Standard, referring to countries' biodiversity strategies, and its supporting assurance scheme (UKWAS) have been existence since before the Reference Period of 2000 and 2009 and have been applied to the bulk of the UK forest area over this period. The major forest area in the UK not covered by the Forestry Standard and UKWAS consists of woodlands not historically or currently under active management for the production of timber. Additionally, all felling of more than 5 m^3 in any calendar quarter (2 m^3 if sold) requires a licence under the terms of the Felling Licence Regulations.

> (g) the reference level shall be consistent with the national projections of anthropogenic greenhouse gas emissions by sources and removals by sinks reported under Regulation (EU) No 525/2013;

The FRL has been constructed to ensure consistency by reporting all relevant forest carbon pools and based on the same methodologies and data referred to when reporting results under Regulation (EU) 525/2013.

> (h) the reference level shall be consistent with greenhouse gas inventories and relevant historical data and shall be based on transparent, complete, consistent, comparable and accurate information. In particular, the model used to construct the reference level shall be able to reproduce historical data from the National Greenhouse Gas Inventory.

The UK uses the same modelling framework for calculating the FRL and for calculating GHG Inventory results for Managed Forest Land. In addition, the forest strata characterised for the FRL calculations are the same as those used in calculating GHG Inventories. Hence, if the Forest Management Practices assumed in calculating a GHG inventory are used as inputs to the FRL modelling framework, the results are identical to those reported in the GHG Inventory for the pools and gases covered by the FRL.

Table 1.1: Equivalence table including explicit references of where the Annex IV B. elements are documented in the NFAP submission.

Annex IV B. paragraph item	Elements of the national forestry accounting plan according to Annex IV B.	Chapter of the NFAP containing the information
(a)	A general description of the determination of the forest reference level.	Sections 1.1 and 3.1
(a)	Description of how the criteria in LULUCF Regulation were taken into account.	Section 1.2
(b)	Identification of the carbon pools and greenhouse gases which have been included in the forest reference level.	Sections 2.1 and 4.1
(b)	Reasons for omitting a carbon pool from the forest reference level determination.	Section 2.1
(b)	Demonstration of the consistency between the carbon pools included in the forest reference level.	Section 2.2
(c)	A description of approaches, methods and models, including quantitative information, used in the determination of the forest reference level, consistent with the most recently submitted national inventory report.	Sections 3.1, 3.2 and 3.3. Annexes 1 to 6
(c)	A description of documentary information on sustainable forest management practices and intensity.	Sections 1.2 (f) and 2.3.1
(c)	A description of adopted national policies.	Section 2.3.1
(d)	Information on how harvesting rates are expected to develop under different policy scenarios.	Section 2.3.2
(e)	A description of how the following element was considered in the determination of the forest reference level:	See below
(i)	The area under forest management	Section 3.2.2, including Tables 3.2, 3.5 to 3.9, and notably Tables 3.10 and 3.11
(ii)	Emissions and removals from forests and harvested wood products as shown in greenhouse gas inventories and relevant historical data	Section 4.2, including Figures 4.1 and 4.2 and Table 4.3 Supporting information in Section 3.3 including Tables 3.12, 3.13 and 3.14

Annex IV B. paragraph item	Elements of the national forestry accounting plan according to Annex IV B.	Chapter of the NFAP containing the information
(iii)	Forest characteristics, including: - dynamic age-related forest characteristics - increments - rotation length and - other information on forest management activities under 'business as usual'	 - Section 3.2.2, notably Figures 3.3 and 3.4 - Section 3.2.2 notably Figure 3.2, Section 3.3, notably Figure 3.7 and Annex 2 - Section 3.2.2 and Annexes 4 and 5 -Annexes 3 and 5
(iv)	Historical and future harvesting rates disaggregated between energy and non-energy uses	Section 3.3, including Tables 3.12 and 3.13

Chapter 2: Preamble for the forest reference level

2.1: Carbon pools and greenhouse gases included in the forest reference level

Emissions and removals of carbon dioxide (CO_2), as well as emissions of methane (CH_4) and nitrous oxide (N_2O) occurring on managed forest land are included in the FRL.

Consistent with the UK GHG Inventory, the following pools of carbon are included in calculating the FRL:

- Aboveground tree biomass (foliage, branchwood, stemwood and bark)
- Belowground biomass (coarse roots)
- Dead wood (standing and fallen)
- Litter
- Soil organic matter to a soil depth of 1 metre (including fine roots)
- Harvested wood products (HWP).

Consistent with the inventory, biomass in understorey vegetation is assumed to remain constant over time.

Emissions from fire (CO_2, N_2O and CH_4) are included through the background level for natural disturbances.

Emissions of N_2O from the drainage of soils are included in the FRL.

Emissions of N_2O from fertiliser application are only reported under land converted to forest land and are therefore not included in the FRL.

2.2: Demonstration of consistency between the carbon pools included in the Forest Reference Level

The modelling framework applied for calculating the FRL (and also the GHG Inventory) is based on the principle of conservation of carbon. It follows that:

The accumulation or loss of carbon in the living biomass carbon pool is modelled explicitly as net carbon stock changes. Consistently defined gains associated with tree growth and losses associated with tree respiration and mortality are implicit in the carbon stock changes.

Losses from living biomass associated with tree harvesting are modelled explicitly.

Losses due to mortality enter the deadwood and litter pools or are lost from the system, according to defined turnover rates. Carbon lost from the system is implicitly assumed to be oxidised to the atmosphere.

The turnover of deadwood and litter results in losses to the atmosphere or inputs to soil organic matter. In principle, deadwood (i.e. forest residues) could be lost through harvesting but this practice is currently rare in the UK.

The accumulation or loss of carbon in the deadwood and litter pools is the net result of the inputs from the living biomass pool and losses from turnover.

There are also losses of soil organic matter, according to defined turnover rates.

The accumulation or loss of carbon in the soil carbon pool is the net result of inputs from deadwood or litter and losses from turnover.

Harvested wood is oxidised to the atmosphere as part of wood processing or when burnt for energy purposes or otherwise enters the HWP carbon pool. Losses of carbon from the HWP carbon pool occur according to the half-lives of defined HWP commodity classes.

The accumulation or loss of carbon in the HWP carbon pool is the net result of inputs from harvesting and losses from processing, burning or disposal of HWP.

The modelling framework involves an approach that ensures that changes in carbon stocks in the pools described above are consistent. For example, an increase in the carbon stock in HWP must involve a commensurate decrease in the carbon stock in living biomass. In this way, changes in carbon stocks in deadwood, litter, soil and HWP can be traced back to carbon stock changes in living biomass, ensuring that gains and losses associated with each carbon pool (represented implicitly) are consistent. Further description of the modelling approach is given in Section 3.1.

2.3: Description of the long-term forest strategy

2.3.1: Overall description of the forests and forest management in the United Kingdom and the adopted national policies

Forestry policy is devolved in the UK and so forestry policy is led by the Department for Environment, Food and Rural Affairs in England, the Department of Agriculture, Environment and Rural Affairs in Northern Ireland, the Scottish Government in Scotland and the Welsh Government in Wales. Gibraltar does not have any forest land. All four countries have established policies for woodland creation, currently co-financed through the EU Rural Development Programme. The development of the Woodland Carbon Code, including its launch on an international carbon registry is attracting private and corporate funding additional to the Rural Development Programme. A revised UK Forestry Standard (UKFS), including Guidelines on Forests and Climate Change, was published in July 2017. The requirement for climate change mitigation is that ‘forest management should contribute to climate change mitigation over the long term through the net capture and storage of carbon in the forest ecosystem and in wood products'. Meeting the requirements of the UKFS is a condition of grant-aid, and also underpins both the Woodland Carbon Code and forest certification under the UK Woodland Assurance Standard. A strong regulatory framework continues to protect existing woodland from deforestation and degradation.

The Clean Growth Strategy (CGS) was published in October 2017 and sets out broad aspirations to enhance the rate of afforestation and use of timber in construction in an illustrative pathway towards meeting the UK's fifth carbon budget (2028-32) and to generate longer term emissions reductions. The fifth carbon budget is set in regulations under the Climate Change Act 2008 at 1,725 Mt CO_2e requiring annualised emissions over the period 2028 to 2032 to be 57% lower than they were in 1990. This includes LULUCF sector emissions. The CGS also committed to 'set up a stronger and more attractive domestic carbon offset market that will encourage more businesses to support cost effective emissions reductions, such as through planting trees' and to 'unlock private finance to invest in forestry by establishing forestry investment zones to offer investors streamlined decision making and more certainty, within shorter timelines'.

England, Scotland and Wales also have established Strategies that aim to increase the contribution of both existing and new woodlands to renewable energy production. For example, the supply of small to medium scale heat in off gas grid areas is the focus of Forestry Commission England's Woodfuel Implementation Plan, which is supported by renewable energy policies including the Renewable Heat Incentive.

The Climate Change Act 2008 included a long-term target that the UK net carbon account in 2050 should be at least 80% lower than the 1990 baseline. The Climate Change Act 2008 (2050 Target Amendment) Order 2019 changed that target to at least 100% lower. Hence requiring the UK to achieve net zero emissions by 2050.

England

In England, the government's 25 year Environment Plan published in January 2018 includes an aspiration to increase woodland cover from 10% to 12% by 2060, with 180,000ha more woodland by 2042. The plan includes a focus on woodland to maximise their natural capital benefits, including kickstart funding for the Northern Forest, support larger scale woodland creation the Woodland Carbon Fund and the appointment of a national Tree Champion.

The Environmental Impact Assessment (Forestry) Regulations were revised in May 2017, requiring more information to be provided by proposers of afforestation projects, while increasing the EIA threshold in areas mapped as low risk if a UKFS-compliant woodland creation plan is submitted. The objective of raising the threshold was to encourage the planting of larger woodlands, in part, to contribute to emissions reduction. The design of larger scale productive woodlands is supported through the Woodland Creation Planning Grant (from 2015), while their establishment is financed through the Woodland Carbon Fund (from 2016). A policy on when to convert woods and forests to open habitats in England is in place, which includes as assessment of implications for carbon balance in the process of prioritising sites for restoration. The development of a thriving forestry sector, through an industry-led action plan (Grown in Britain), is highlighted as an essential element to achieve woodland planting aspirations and deliver emissions savings in other sectors through the sustainable use of woodfuel as a source of renewable energy and harvested wood products substituting for other materials.

Scotland

In Scotland, forestry is recognised as having an important role in mitigating the impacts of climate change through carbon storage and sequestration and the Scottish Government is committed to expanding the woodland resource throughout Scotland.

The Climate Change Plan (third report on policies and proposals, 2018) sets out how the Scottish Government will meet its greenhouse gas emission reduction targets for the period 2017-2032 and includes ambitious woodland creation targets, aiming to increase forest and woodland cover from around 18% to 21% of the land area of Scotland by 2032. This equates to 10 000 hectares of new woodland per year until 2020-21, with stepped increases thereafter to 15 000 hectares per year from 2025.

These ambitions were reaffirmed in Scotland’s Forestry Strategy 2019-2029, which identified the expansion of forests and woodlands across Scotland as a priority for action. The 2019-2020 Programme for Government also reiterated the Scottish Government’s support for woodland expansion, announcing additional funding to seek to create 12,000 hectares of new woodland in 2019-20, an ambitious aim and 2,000 hectares more than the Climate Change Plan target for the same period.

The creation of these new woodlands and forests will be underpinned by the internationally recognised principles of sustainable forest management and the principle of the right tree, in the right place, for the right purpose. The Forestry Grant Scheme offers financial support for the creation of new woodland and the sustainable management of existing woodland and all applications are assessed against the UK Forestry Standard, which defines the agreed approach to sustainable forest management across all four administrations of the UK.

To complement woodland creation, a framework to better control woodland removal is also in place. The Climate Change Plan also includes a policy to increase emissions abatement through greater use of Scottish timber in building construction and refurbishment.

Wales

To promote sustainable land use, “Woodlands for Wales” is the Welsh Government’s fifty-year Strategy. It is the Welsh Government’s aim to achieve at least the minimum planting rate of 2,000 hectares each year from 2020 and over time to increase planting to levels that enable Wales to deliver the legal obligation entered into with the Environment (Wales) Act 2016.

Northern Ireland

The duties and powers of the Forest Service are set out in the Forestry Act (Northern Ireland) 2010. Forest policy is to expand the area under forest and to manage forests sustainably, so as to supply a wide range of forestry services. These are chiefly timber, public access and environmental services. Privately owned forests are subject to certain provisions of the Act, and this and support for forest expansion is administered by the Forest Service. The Forest Service holds both Forestry Stewardship Council (FSC) and Programme for the Endorsement of Forestry Certification (PEFC) accreditation for its standard of forest management, certifying that it manages forests in a sustainable manner. The policy set out in the 2006 Forestry Strategy is to steadily expand tree cover and to manage woods and forests sustainably. This policy aims to steadily expand tree cover with the aim of increasing forest cover to 12% of land area by 2050. The intention is to provide new woodland supplying a range of ecosystem services including: public access; carbon capture; reduction of flood risk, timber production and biodiversity. An additional programme, the Rural Development Programme, provides a basis for the continued promotion of forest expansion by private landowners and public bodies through grant aid. Under this programme approximately 200 hectares of new forest planting annually will be grant aided until 2020.

2.3.2: Description of future harvesting rates under different policy scenarios

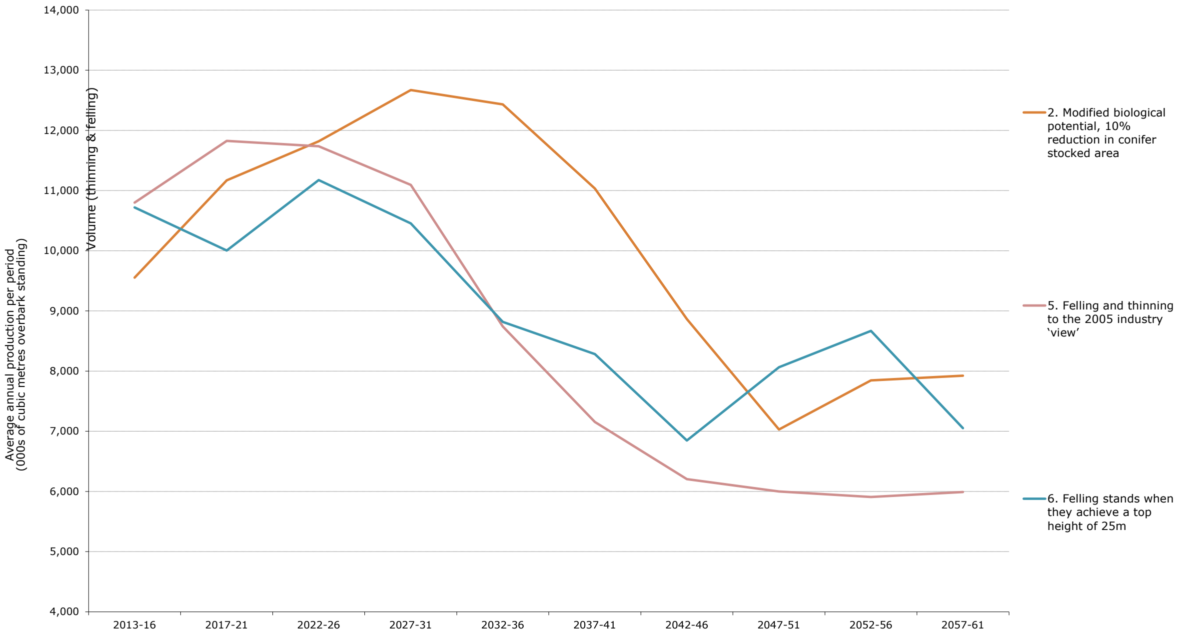
Currently, there are no published forecasts of potential future wood production in the UK involving scenarios for the management of forest land explicitly related to climate change policy. The Forestry Commission (2014ab) has published forecasts for several scenarios exploring the possible impacts of policies related to the promotion of biodiversity and rural development through the management of forest areas in Great Britain. In broad terms, amongst other factors, these scenarios explore changes to existing forest management practices involving:

- Creation of more open space within forests or restocking with broadleaves when clearcutting coniferous forest areas, in order to comply with UKFS.
- Mobilisation of some or all of the available wood resource in broadleaved forest areas, where these are currently unmanaged. This aims at improving habitat quality in response to the peculiar nature of woodlands in the UK where most have been managed in the past and are now “undermanaged”, leading to them being over-stood/dense but not approaching “old-growth” status.

The scenarios also looked at the impacts of varying clearcutting rotations on the magnitude and time course of wood production.

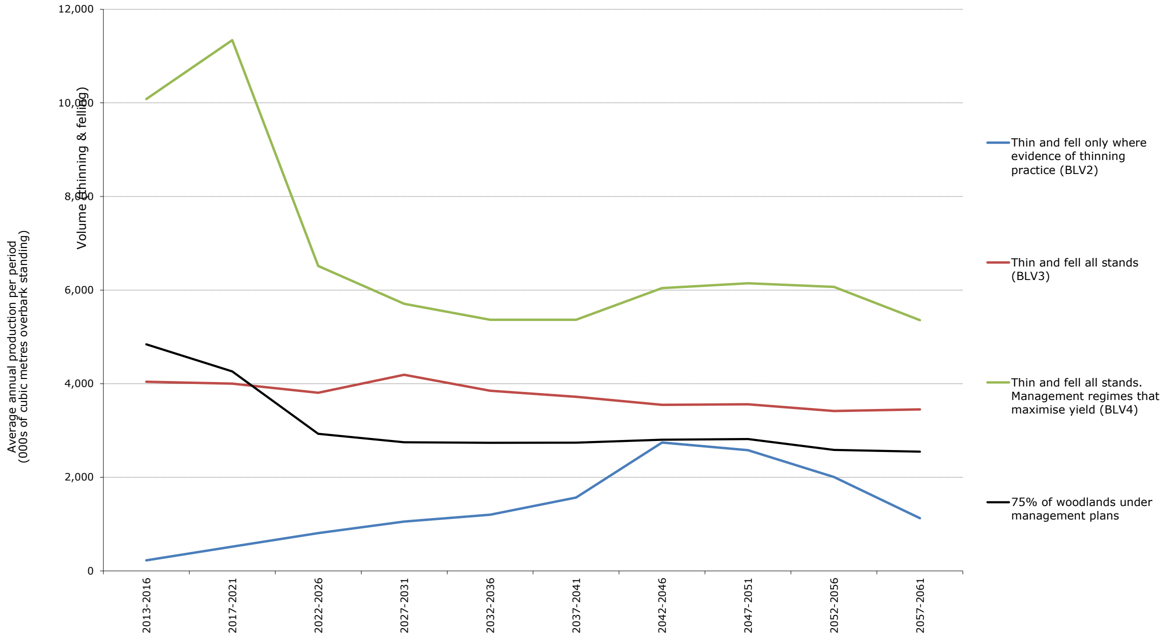
For existing coniferous forests in Great Britain (i.e. not allowing for woodland creation), the scenarios suggest that wood production may be sustained or could potentially increase over the next 10 to 15 years, at between 10 and 12.5 million cubic metres per year over bark standing. However, all scenarios suggest that wood production from coniferous forests is likely to drop in the later part of this century, to between 6 and 8 million cubic metres per year in the absence of additional woodland creation. This is illustrated in Figure 2.1 which shows 50-year forecasts for three scenarios of wood production from coniferous forests in Britain over a 50 year period from 2011 (Forestry Commission, 2014a). The drop in wood production reflects high rates of afforestation between 1920 and 1990, which has created a skewed age distribution within coniferous forest areas. The scenarios illustrated in Figure 2.1 vary principally in terms of the assumed rotations and proportions of forest area restocked on clearcutting. These scenarios affect the detailed time course of wood production but not the general trends.

Figure 2.1. Forecast of wood production from coniferous forests in Britain for 50 years from 2011, showing three possible scenarios for harvesting and restocking.



For broadleaved forests in Great Britain, statistics suggest that wood production has been declining since the 1970s (Forestry Commission, 2018). The statistics and the forecast scenarios suggest that currently commercial hardwood production is very low (less than 1 million cubic metres per year over bark standing). However, the forecast scenarios also suggest that there could be significant potential to increase production to between 3 and 6 million cubic metres per year by introducing active management in broadleaved forest areas that are currently unmanaged (Forestry Commission, 2014b). This is illustrated in Figure 2.2 which shows 50-year forecasts for four scenarios of wood production from broadleaved forests in Britain over a 50 year period from 2011 (Forestry Commission, 2014b). The blue line in Figure 2.2 effectively represents business as usual management of broadleaved forests with the other results representing theoretical wood mobilisation scenarios.

Figure 2.2. Forecast of wood production from broadleaved forests in Britain for 50 years from 2011, showing four possible scenarios for mobilisation of the wood resource.



The construction of the FRL is based on the assumption that forest management characterised for a Reference Period of 2000 to 2009 is continued into the future. None of the above scenarios are exactly consistent with such an assumption. However, a forecast of wood production from coniferous forests based on assumptions developed for the FRL should have the same order of magnitude as indicated by the scenarios in Figure 2.1 and show a similar longer term trend. For broadleaved forests, a forecast based on assumptions developed for the FRL should be similar to the blue line in Figure 2.2. However, the forest statistics for the 2000-2009 period are focussed on commercial wood harvest being derived from sawmill returns, and underestimate non-commercial hardwood harvest. Improved statistics on non-commercial hardwood harvest might result in a technical correction of the FRL.

Chapter 3: Description of the modelling approach

3.1: Description of the general approach as applied for estimating the forest reference level

This section describes the general approach applied for estimating the FRL and a related approach to estimating the contribution of managed land to CO_2 emissions and removals, as applied in UK GHG inventories. An appreciation of the approach taken in GHG inventories is helpful for understanding the approach taken for the FRL, and in particular where differences in methods are involved.

The essential steps involved in estimating the CO_2 emissions and removals of Managed Forest Land for a GHG inventory are described in Box 3.1. The variations in these steps applied for the purposes of constructing the FRL are described in Box 3.2. The modelling methodologies in Boxes 3.1 and 3.2 are applied separately to data available for each country (England, Scotland, Wales and Northern Ireland) and for coniferous and broadleaved forest areas.

Box 3.1 Essential steps in modelling Managed Forest Land for GHG Inventory calculations

Step 1. Stratify the forest area according to the following classification:

- Country (England, Scotland, Wales, Northern Ireland)
- Forest ownership (public forest estate and private sector)
- Tree species (as represented in the CARBINE model, see Section 3.3)
- Potential increment (expressed as yield class, see Matthews et al., 2016a)
- High-level management type
- Soil class (mineral, organic).

The approach to stratification is discussed in more detail in Section 3.2.1. There are four possible high-level management types:

1. No harvesting (no thinning and no clearcutting)
2. No thinning with clearcutting
3. Thinning with clearcutting

4. Continuous thinning (harvesting by thinning involving the continuous maintenance of forest cover, i.e. without clearcutting).

Step 2. Assume that any thinning is carried out according to standard prescriptions as described in British Forestry Commission yield tables (Matthews et al., 2016ab). Essentially this involves:

- Specifying a recommended age of first thinning (based on a standard yield table)
- Harvesting every 5 years from the age of first thinning
- Harvesting a prescribed fixed stem volume at each thinning (defined in terms of harvested standing timber over bark, based on a standard yield table)
- After forests have reached economic maturity, harvesting a gradually diminishing stem volume at each thinning (defined in terms of harvested standing timber over bark, based on a standard yield table), unless managing based on continuous thinning, in which case the fixed thinning volume is maintained.

For some tree species, the first thinning may involve harvesting a different volume compared with the prescribed fixed stem volume mentioned above. These cases may be regarded as pre-commercial thinnings.

Step 3. For each stratum involving a high-level management type of 2 or 3 (i.e. involving clearcutting), specify a range of rotation ages (minimum to maximum) which may be applied. Generally, these rotations reflect either economic or silvicultural principles, being around the time of maximum volume production for conifers and similarly for broadleaves, although rotations may be extended to increase sawlog production in broadleaves (Matthews et al., 2016ab).

Step 4. Derive the age distribution for each stratum based on data available from the most recent National Forest Inventory (NFI) or similar data source (e.g. management records maintained for the public forest estate).

Step 5. Use the following inputs to an optimisation procedure:

- The age distribution for each stratum
- The high-level management types assigned to each stratum (including rotation ranges)
- Records for annual afforestation rates since 1920
- Reported statistics on annual wood production (softwood and hardwood) since 1975.

The optimisation procedure involves:

- Adjusting the specific rotations applied to strata (within the specified ranges) and
- Adjusting the allocation of forest areas in private ownership between high-level management type 1 (no harvesting) on the one hand and the other high-level forest management types on the other hand.

The optimisation procedure constructs an annual sequence for the creation of forest areas in each stratum (which may be referred to as a “planting sequence”), that best matches (or reconciles with) the input age distribution, annual afforestation rates and reported wood production.

Step 6. Compile a set of input data for the CARBINE forest sector accounting model consisting of:

- The parameters defining each stratum (including the detailed rotations, where relevant)
- The annual sequence for the creation of forest areas in each stratum.

Step 7. Run the CARBINE model using the input data prepared in Step 6 and process the outputs for reporting as part of a GHG inventory.

Box 3.2 Essential steps in modelling Managed Forest Land for FRL calculations

FRL Step 1. Start with the forest strata and the “planting sequence” for each stratum as modelled for the latest GHG Inventory (see Steps 1-5, Box 3.1).

FRL Step 2. Based on available evidence from data sources, estimate new rotations to be applied to the forest areas forming the planting sequences specifically representative of management during the Reference Period 2000-2009. Assign these revised rotations to the forest strata from the year 2000 onwards.

FRL Step 3. Taking the planting sequences and the new management prescriptions, calculate the predicted wood production in the Reference Period 2000-2009.

FRL Step 4. Carry out a further check for the Reference Period of 2000-2009 by comparing the predicted wood production from FRL Step 3 with reported wood production (from statistics) for the Reference Period 2000-2009. If the predicted and reported wood production are in good agreement, then proceed to FRL Step 5. Otherwise, adjust the allocation of forest areas in private ownership between high-level management type 1 (no harvesting) on the one hand and the other high-level forest management types on the other hand to obtain good agreement.

At the end of this step, a relevant set of input data to project the FRL with the CARBINE forest sector accounting model is available. It consists of:

- The planting sequence for each stratum.
- The parameters defining the management of each stratum (i.e. including proportion of area not in management for production and the FRL rotations, where relevant).

FRL Step 5. Run the CARBINE model using the input data prepared in FRL Step 4 and process the outputs to calculate an FRL. The management prescriptions applied up to and including the year 2009 are identical to those applied in the 1990-2017 GHG Inventory. From 2010 onwards, the management prescriptions characterised for the reference period are applied. Note that this is different to the initial simulation in FRL Step 2.

The modelling framework used to implement the calculation steps described in Boxes 3.1 and 3.2 are constructed around the CARBINE forest sector accounting model, which implements the calculation of forest carbon stocks and stock changes.

The CARBINE model is described further in Section 3.3 and in more detail in a report currently being prepared (Matthews et al., 2019).

The essential function of the optimisation methodologies implemented in various steps of boxes 3.1 and 3.2 is to construct a historical sequence describing the annual creation of areas of forest, or “planting sequence”. This planting sequence is used as input data to the CARBINE model, which grows the forest areas forward through time, and calculates the development of the forest area age class distribution and carbon stocks and stock changes. For the GHG Inventory, the planting sequence is derived directly from the forest area age class distribution reported in the latest NFI and other relevant data sources (Step 4, Box 3.1), and the management parameters applied to the forest strata, the simulated forest area age class distribution produced by the CARBINE model is a good match for the reported distribution.

The CARBINE simulation for the FRL also uses the planting sequence derived for the GHG Inventory but, from 2010 onwards, applies management parameters applicable for the Reference Period of 2000-2009. This is in contrast to the modelling for the GHG Inventory, which may adjust management including forest rotations after 2009 to reconcile simulated wood production with the production reported between 2010 and the reporting year of the GHG Inventory. It follows that the FRL and GHG Inventory should be in agreement up to and including the year 2009. After 2009, if the management parameters characterised for the Reference Period are significantly different to those applied in the GHG Inventory, which reflect developments in harvest intensity in the later period, then the simulated forest area age class distribution for the FRL projection will develop differently to that simulated for the GHG Inventory. The forest area age class distributions simulated for the FRL in the NFI reporting year will then be different to the reported distribution.

3.2: Documentation of data sources as applied for estimating the forest reference level

3.2.1: Documentation of stratification of the managed forest land

The development of estimates of GHG emissions and removals, as reported for Managed Forest Land in UK GHG Inventories, is based on several sources of data as shown in Table 3.1. These data sources were also referred to in defining the forest strata for the development of the FRL. The forest area of the United Kingdom is summarised in Table 3.2.

When reporting GHG inventories, the UK defines a forest as having a minimum area of 0.1 ha and a minimum width of 20 m, together with a tree canopy cover of 20% and a potential tree height of 2 m. This definition has also been adopted for the purposes of constructing the FRL.

The National Forest Inventory (NFI, Forestry Commission, 2012) reports on forest areas for a minimum area of 0.5 ha, hence this information has been supplemented with additional data from a separate NFI study that identified small woodlands (Forestry Commission, 2017).

The data in Table 3.2 are the result of combining information from several sources (see Table 3.1) with different reporting years (i.e. 2011 for private forests, 2014 for public forests and 2016 for small woodlands in England, Scotland and Wales, and 2013 for forest areas in Northern Ireland). For consistency, data from these sources have been adjusted where needed to permit reporting in Table 3.2 on a consistent basis for a reporting year of 2011, as well as consistency with forest areas reported in the CRF for the UK GHG Inventory. These adjustments were based on the modelling undertaken for the construction of GHG inventories and the FRL as described in this document, in particular in Boxes 3.1 and 3.2. The year 2011 is the earliest year for which forest inventory data are reported based on the latest NFI, the main source for data on forest areas. Hence, data for this reporting year is the closest available to the Reference Period of 2000-2009. This data source was preferred rather than referring to data from earlier forest inventories, which were started in the 1990s and which do not report on certain variables that are important for this modelling exercise (e.g. yield class, see discussion of increment later in this section). The Statistics Group of Forest Research provided recently updated forest area statistics for the 2011 Forestry Statistics report, in which generally small, but registerable corrections have been made to reported areas for some countries in the original publication.

Forestry statistics and the GHG Inventory for the UK suggest a total forest area of just over 3.5 million hectares, including about 475 thousand hectares of non-wooded areas (i.e. integral open space, including areas of rocky ground, roads, rides and streams or land prepared for planting). There are significant forest areas in England, Scotland, Wales and Northern Ireland, although the area in Northern Ireland is relatively small, at less than 5% of the UK forest area.

Table 3.1 Data sources for the development of forest strata

Forest characteristics	Data references	Stratum ID where the characteristics and reference are relevant
Area of strata		
1) Public forests (England, Scotland, Wales)	Forestry Commission, 2011; SCDB, 2014*; Forestry Commission, 2014c*	Tables 3.2, 3.4, 3.5, 3.6, 3.7 and Annexes 2 and 6
2) Private forests (England, Scotland, Wales)	Forestry Commission, 2011; Forestry Commission, 2014c*	Tables 3.2, 3.4, 3.5, 3.6, 3.7 and Annexes 2 and 6
3) Northern Ireland forests (Public and Private)	NIFS, 2013*	Tables 3.2 and 3.8 and Annexes 2 and 6
4) Small woodlands (England, Scotland, Wales)	Forestry Commission, 2017*	Tables 3.2, 3.4, 3.5, 3.6, 3.7 and Annexes 2 and 6
Historical afforestation		
1) England, Scotland and Wales (Public and Private)	Forestry Commission records (see Cannell and Dewar, 1995)	Box 3.1 (Section 3.1)
2) Northern Ireland (Public and Private)	Cannell et al., 1996	Box 3.1 (Section 3.1)
Soil class	Webb et al. (2013)	Section 3.2.1

* Note: for the purposes of reporting in this National Forest Accounting Plan, data sources have been adjusted for a consistent reporting year of 2011 and to ensure compatibility with forest areas reported in the CRF in the UK 1990-2017 GHG Inventory.

Table 3.2 Summary of United Kingdom forest areas

Country	Ownership	Coniferous	Broadleaved	Total wooded	Non-wooded	Total
England	Public	115 405.8	48 253.2	163 659.0	52 703.9	216 363
	Private	203 624.3	1 104 585.5	1 308 209.8	84 905.7	1 393 115
	Total	319 030.1	1 152 838.7	1 471 868.8	137 609.5	1 609 478
Scotland	Public	320 580.7	27 875.9	348 456.6	137 364.6	485 821
	Private	524 146.2	313 413.7	837 559.9	126 304.8	963 865
	Total	844 726.9	341 289.6	1 186 016.5	263 669.5	1 449 686
Wales	Public	78 613.0	9 992.3	88 605.3	28 024.2	116 629
	Private	52 472.7	157 182.9	209 655.6	31 435.8	241 091
	Total	131 085.6	167 175.2	298 260.9	59 460.0	357 721
N. Ireland	Public	46 714.0	1 721.5	48 435.5	-	-
	Private	8 711.6	40 661.0 (12 039.4)	49 372.6 (20 751.0)	-	-
	Total	55 425.6	42 382.5 (13 760.9)	97 808.1 (69 186.5)	14 303.9	112 112
UK	Public	561 313.4	87 843.0	649 156.4	-	-
	Private	788 954.8	1 615 843.1 (1 587 221.5)	2 404 797.9 (2 376 176.3)	-	-
	Total	1 350 286.2	1 703 686.1 (1 675 064.4)	3 053 972.3 (3 025 332.7)	475 024.7	3 528 997

Notes:

Sums of areas may not precisely agree with reported total areas shown in the table because of rounding.

Coniferous, broadleaved and total wooded areas are based on areas reported in the GB NFI for a forest inventory year of 2011 and the Northern Ireland Woodland Basemap for 2013 in conjunction with records for the Public forest estates, also including areas for small woodlands in England, Scotland and Wales (between 0.1 and 0.5 ha in area), expressed for a consistent reporting year of 2011. This combination of areas may differ from total forest areas reported by the UK and its Devolved Administrations.

For Northern Ireland private forests, total stocked areas are given with the areas modelled in GHG inventories given in brackets.

It should be clarified that the forest areas shown in Table 3.2 for wooded land (i.e. the coniferous, broadleaved and total wooded areas) represent “stocked areas” or “net areas”, i.e. land occupied by trees, not including associated areas of land cover such as forest roads, rides, rocky ground, rivers etc.

For Northern Ireland private forests, areas include an area of about 28.6 kha of old, unproductive and unmanaged woodlands. These have been registered in Northern Ireland woodland surveys more recently than 2011 and the area is also included in the CRF of UK GHG inventories. However, these old and unmanaged woodlands are assumed to be in carbon balance and carbon stock changes are not modelled in GHG inventories. The modelled areas are shown in brackets in Table 3.2.

Approach to stratification

As described in Section 3.1 (Box 3.1), and also illustrated in Figure 3.1 below, forest areas in the UK were stratified according to the following classification:

- Country (England, Scotland, Wales, Northern Ireland)
- Forest ownership (public forest estate and private sector)
- Tree species (as represented in the CARBINE model, see Section 3.3)
- Potential increment (expressed as yield class, see Matthews et al., 2016a)
- High-level management type
- Soil class (mineral, organic).

Stratification with respect to tree species

The CARBINE model (see Section 3.3) explicitly represents 19 major tree species found in UK forests, as shown in Figure 3.1 and listed in Table 3.3.

Forest inventory information in the UK recognises the existence of more than 150 tree species or species groups. It will be apparent that the great majority of these are not represented explicitly in the CARBINE model. However, the tree species not included in Table 3.3 are minor in terms of area within the UK forest estate. When making calculations for GHG inventories and for the development of the FRL, minor species are represented in modelling by associating them with the most appropriate tree species listed in Table 3.3, in terms of genus and/or growth rate, based on expert judgement. A table giving details of the handling of minor tree species is given in Annex 1.

Stratification with respect to potential stand increment

In UK forestry, the potential increment of forest stands is assessed in terms of a parameter known as yield class. The forest strata defined for the purposes of modelling the FRL are classified according to yield class in addition to other factors, giving the essential link to stand increment.

Yield class is an index of the potential stem volume productivity of a stand of trees and represents the potential maximum mean annual increment (MAI_{max}) of cumulative volume production. It is measured in units of cubic metres of stem volume growth per hectare per year. Yield class or maximum mean annual increment represents one of the most important parameters for making decisions about forest management in the UK. These parameters related to stand increment are explained below.

Figure 3.1. Illustration of steps in forest area stratification

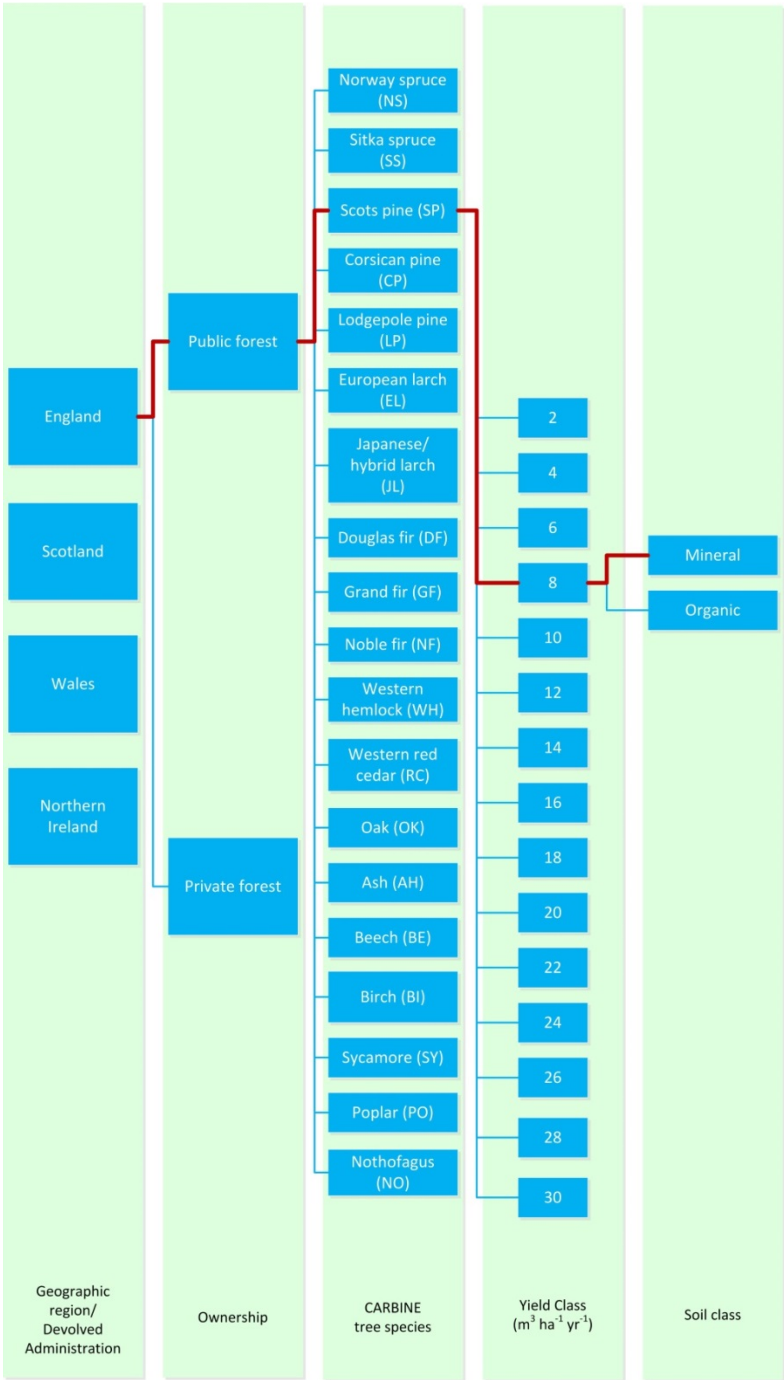


Table 3.3 Tree species represented in the CARBINE model and used in forest area stratification

Common species name	Latin name	CARBINE species code
Norway spruce	Picea abies	NS
Sitka spruce	Picea sitchensis	SS
Scots pine	Pinus sylvestris	SP
Corsican pine	Pinus nigra subspecies (ssp.) Laricio	CP
Lodgepole pine	Pinus contorta	LP
European larch	Larix decidua	EL
Japanese/hybrid larch	Larix kaempferi/L.	JL
Douglas fir	Pseudotsuga menziesii	DF
Grand fir	Abies grandis	GF
Noble fir	Abies procera	NF
Western hemlock	Tsuga heterophylla	WH
Western red cedar	Thuja plicata	RC
Oak	Quercus species pluralis (spp.)	OK
Ash	Fraxinus excelsior	AH
Beech	Fagus sylvatica	BE
Birch	Betula spp.	BI
Sycamore	Acer pseudoplatanus	SY
Poplar	Populus. spp.	PO
Nothofagus	Nothofagus spp.	NO

Cumulative volume production

An important measure of volume productivity in UK forestry is cumulative volume production. Cumulative timber volume production is the standing stem volume per hectare attained by a forest stand in a given year plus the sum of per hectare stem volumes removed as thinnings up to that year. Cumulative volume production represents the total production of timber volume from a stand up to a given year in the stand's development.

An example of cumulative volume production as measured in a permanent sample plot of even-aged Sitka spruce is given in Table 3.4. As an illustration of how cumulative volume production is calculated, in Table 3.4 cumulative production up to age 44 years is:

369 + 34 + 33 + 49 + 24 + 35 + 61 + 53 = 658 cubic metres per hectare.

Table 3.4 Standing volume and production in an even-aged stand of Sitka spruce in Britain (Forestry Commission permanent mensuration sample plot 1222, Brendon, Somerset, established 1948, felled 1986 at age 57).

Year	Stand age (years)	Top height (m)	Volume per hectare (m3 ha-1)			Mean annual increment (m3 ha-1 yr-1)
			Volume standing after thinning	Volume removed as thinnings	Cumulative volume	
1948	19	8.6	103	34	137	7.2
1951	22	10.0	-	33	-	-
1953	24	11.1	121	49	237	9.9
1958	29	14.5	-	24	-	-
1963	34	16.0	262	35	437	12.9
1967	38	17.8	272	61	508	13.3
1973	44	21.3	369	53	658	15.0
1978	49	23.4	396	59	744	15.2
1986	57	-	531	-	879	15.4

The main applications of cumulative volume production are in economic analysis and in support of practical forest management. In essence, cumulative volume production represents the out-turn of commercial stem volume from a stand up to a given year in the stand's development.

Current annual increment

Current annual increment (CAI) is strictly the rate of cumulative volume production for a given year. For example, suppose the cumulative volume production of a 35 year old stand of trees is 500 cubic metres per hectare, and that by the time the stand is 36 years old the cumulative volume production has risen to 520 cubic metres per hectare. The CAI of the stand at age 36 is then calculated as 520 – 500 = 20 cubic metres per hectare per year.

For ease of calculation and for practical reasons, CAI is frequently approximated from two measurements of cumulative volume production taken more than one year apart. For example, the CAI of the Sitka spruce stand in Table 3.4 at age 22 years could be approximated as (237−137 cubic metres) ÷ 5 years = 100 ÷ 5 = 10.0 cubic metres per hectare per year. It is important to note that, because of the way it is calculated, strictly, this example of an estimate of current annual increment applies 'on average' for the stand between the ages of 19 and 24 years.

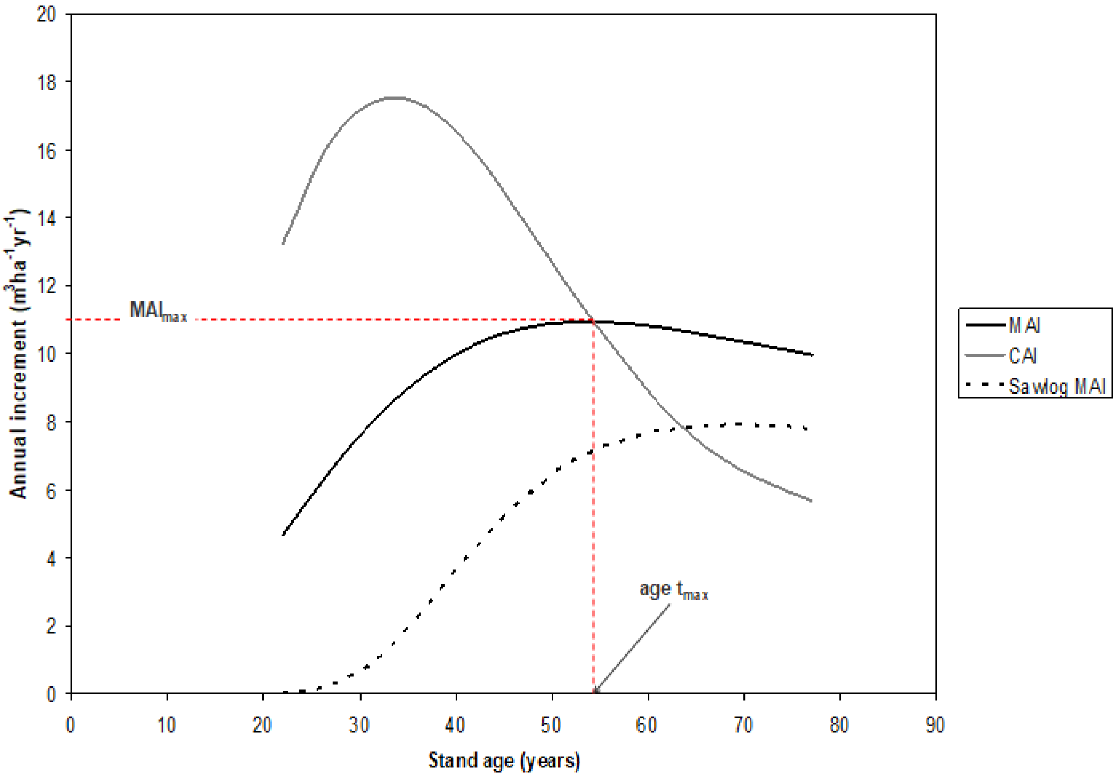
Mean annual increment

Mean annual increment (MAI) is the average rate of cumulative volume production up to a given year. In even-aged stands, MAI is calculated by dividing cumulative volume production by age. For example, for the Sitka spruce stand in Table 3.4, the mean annual increment up to age 44 years is 658 ÷ 44 = 15.0 cubic metres per hectare per year.

Development of MAI and CAI over time

For an even-aged stand of trees, both MAI and CAI follow a characteristic pattern of development with respect to stand age, as shown in Figure 3.2. In this example, the curves are based on a yield model for Sitka spruce in Great Britain for which MAI_{max} is 11 m^3 ha^{-1} yr^{-1}, occurring at a stand age of 54 years. The above curves clearly illustrate that the MAI_{max} of sawlogs (i.e. roundwood with a minimum top diameter, under bark, of 16 cm) is lower, and occurs later than the equivalent MAI_{max} for total volume production; in this example stand, the MAImax of sawlogs is 7.9 m^3 ha^{-1} yr^{-1} and is reached at a stand age of 69 years.

Figure 3.2. Trajectories of mean annual increment (MAI) of cumulative volume production, current annual increment (CAI) and sawlog mean annual increment (Sawlog MAI) for an even-aged stand of unthinned Sitka spruce.



In the early years of stand development, both CAI and MAI rise steadily from zero to reach maximum values before declining again. The annual volume increment (CAI) reaches a peak earlier, and always achieves a higher maximum value, than MAI. Maximum MAI is reached at the age (t_{max}) where the descending CAI curve crosses the MAI curve. For typical even-aged conifer stands grown in the UK, maximum MAI is usually reached after several decades, commonly after 40 to 50 years. From this point on MAI declines steadily, although the rate of decline may be slight in the years immediately following attainment of maximum MAI. The existence of a stand age t_{max} for which MAI takes a maximum value MAI_{max} may be regarded as being of great commercial significance in the management of even-aged stands particularly if the aim is to maximise sustainable volume production. Specifically, if MAI_{max} occurs at a predictable stand age t_{max} then a forest manager may choose to clearfell the stand at this age. The average rate of volume production over the rotation period t_{max}, will then be MAI_{max}. The forest manager can then replant or regenerate a new stand on the clearfelled site and, if this new stand is also grown over a rotation period t_{max} then average rate of volume production of the new stand will again be MAI_{max} provided that the fertility of the site has not been depleted and environmental conditions have not changed. Clearly, managing a stand on this site using any rotation period other than t_{max} will result in a lower average rate of volume production, because the MAI achieved by an even-aged stand on this site must be lower for a stand age other than t_{max}.

It is very important to stress that MAI_{max}, which is also used to express the yield class of forest stands in the UK, represents the maximum rate of stem volume production that can be achieved if the stand is even-aged and managed for production of maximum raw stem volume (i.e. with no consideration of any requirement for stemwood of particular dimensions, form or quality). In practice, it is very rare for forest stands to be managed in this way. It is more common for stands to be managed on rotations reasonably close to but either shorter or longer than t_{max}, with the result that the overall level of volume production achieved over a rotation is significantly less than MAI_{max}. Rotations are applied to forest stands in the UK for a number of reasons, generally to meet wider forest management objectives (e.g. landscape design, management of storm risk, habitat creation and conservation), but also to enable the development of individual trees with large diameters, from which higher value products such as sawlogs can be produced. Nevertheless, MAI_{max} (i.e. yield class) remains a principal parameter referred to in determining the management of forest stands, particularly in terms of setting (the actual) rotations and determining levels of thinning during rotations. It is generally understood that yield class represents maximum possible production and increment in forest stands over a rotation and that, in practice, actual increment and production in a stand will be somewhat lower than suggested by the yield class.

As shown in Figure 3.1 above, forest areas are classified into even-numbered yield classes between 2 and 30 $m^3 ha^{-1} yr^{-1}$ (see Matthews et al., 2016ab).

Stratification with respect to soil classes

The stratification of forest areas according to soil classes (mineral, organic) involves the following assumptions:

- All forests on organic soils have been planted in the period since 1920, with a peak rate of planting between 1970 and 1990

- All forests planted on drained organic soils are coniferous.

- The distribution of coniferous tree species and yield classes planted on either organic or mineral soils is the same – this assumption is made in the absence of published analysis suggesting the distributions may be different.

The proportions of total forest area on organic soils in Great Britain have been estimated through comparison of the NFI map with soil maps (Webb et al., 2013), giving estimates for the percentage of forest area on organic soils in England, Scotland and Wales of 4.9%, 16.0% and 4.9%, respectively.

For Northern Ireland, the area of coniferous forest on organic soils is understood to be relatively high and has been estimated as 50%.

Detailed forest strata

The tables in Annex 2 show the detailed breakdown of forest area in the UK according to country, ownership, CARBINE tree species and yield class. This information is given in an Annex because of the very large number of strata (more than 1,000 in total). However, it should be noted that detailed information on the breakdown of the forest area in Northern Ireland by tree species and yield class is not available separately for the public forest estate and private sector. Hence, tree species and yield classes have been allocated to the public forest estate and private sector on a pro-rata basis (i.e. referring to the total areas of coniferous and broadleaved forest in public and private ownership, see Table 3.2). Strictly, a single set of strata with respect to tree species and yield class can be applied for public and private forests combined in Northern Ireland, which would reduce the total number of strata.

3.2.2: Documentation of sustainable forest management practices as applied in the estimation of the forest reference level

As explained in Section 3.1 (see Box 3.1), the development of GHG Inventories and the FRL involves stratifying the forest area in the UK (see Section 3.2.1) and then assigning four possible high-level management types to these strata:

- No harvesting (no thinning and no clearcutting)
- No thinning with clearcutting
- Thinning with clearcutting
- Continuous thinning (harvesting by thinning involving the continuous maintenance of forest cover, i.e. without clearcutting).

Forest strata in England, Scotland, Wales and Northern Ireland, under public and private ownership, were first assigned to each of these four management types, and then each stratum was assigned a detailed FMP. The methodology applied to work out the assignment of high-level management types and the detailed FMPs to forest areas is described subsequently.

Table 3.5 summarises the assignment of coniferous and broadleaved areas to the high-level management types to forest areas in the UK. Tables 3.6, 3.7, 3.8 and 3.9 show the disaggregated results for England, Scotland, Wales and Northern Ireland respectively. Note that the non-wooded areas (and areas not modelled) shown in Table 3. 2 (Section 3.2.1) are not relevant (since there are no trees on this component of the forest land), hence these were assigned a “null” FMP (i.e. no relevant management).

The relative areas of each forest stratum associated with each high-level management type were estimated based on:

- An analysis of management information reported for the Reference Period, as recorded in databases maintained for the public forest estate in England, Scotland, Wales and Northern Ireland.

- Assumptions about levels of management and thinning (and non-thinning) of forest areas made as part of a forecasting exercise undertaken by the Forestry Commission for the private sector in England, Scotland and Wales in 2006 (Halsall et al., 2006).

The relative area in each stratum assigned to the high-level forest management type of “no harvesting” was refined as part of the subsequent process of reconciling forest management assumptions with the forest age class distribution and reported levels of commercial wood production (see Section 3.1, Boxes 3.1 and 3.2). This refinement ensures that the assumptions taken for the private sector are consistent with the harvest rates observed over the period 2000-2009, hence adjusting the assumptions made about current and future production made in the original 2006 forecasting exercise, which are used as an initial inputs to the modelling, given the limited data available describing details of actual management for the private sector. Were further relevant data from the relevant period to become available, we may make a technical correction to reflect it.

Table 3.5 Summary of forest areas in the UK showing assignment of high-level management types

Ownership	Coniferous/ broadleaved	Forest area by management type (ha)					Percentage of total area			
		No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover	Total	No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover
Public	Coniferous	217 324.4	161 836.5	117 353.8	64 798.7	561 313.4	38.7	28.8	20.9	11.5
	Broadleaved	51 652.4	89.3	82.9	36 018.3	87 842.9	58.8	0.1	0.1	41.0
	Total	268 976.8	161 925.8	117 436.6	100 817.1	649 156.3	41.4	24.9	18.1	15.5
Private	Coniferous	422 339.9	249 609.0	117 005.9	0.0	788 954.8	53.5	31.6	14.8	0.0
	Broadleaved	1 481 122.5	624.5	105 474.4	0.0	1 587 221.4	93.3	0.0	6.6	0.0
	Total	1 903 462.5	250 233.5	222 480.3	0.0	2 376 176.3	80.1	10.5	9.4	0.0
All	Coniferous	639 664.3	411 445.5	234 359.7	64 798.7	1 350 268.2	47.4	30.5	17.4	4.8
	Broadleaved	1 532 775.1	713.8	105 557.3	36 018.3	1 675 064.4	91.5	0.0	6.3	2.2
	Total	2 172 439.4	412 159.3	339 916.9	100 817.1	3 025 332.7	71.8	13.6	11.2	3.3

Table 3.6 Summary of forest areas in England showing assignment of high-level management types

Ownership	Coniferous/ broadleaved	Forest area by management type (ha)					Percentage of total area			
		No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover	Total	No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover
Public	Coniferous	28 826.2	23 256.5	39 708.8	23 614.3	115 405.8	25.0	20.2	34.4	20.5
	Broadleaved	16 762.4	0.0	0.0	31 490.8	48 253.2	34.7	0.0	0.0	65.3
	Total	45 588.6	23 256.5	39 708.8	55 105.1	163 659.0	27.9	14.2	24.3	33.7
Private	Coniferous	152 634.0	16 331.0	34 659.3	0.0	203 624.3	75.0	8.0	17.0	0.0
	Broadleaved	1 025 557.0	0.0	79 028.5	0.0	1 104 585.5	92.8	0.0	7.2	0.0
	Total	1 178 191.0	16 331.0	113 687.8	0.0	1 308 209.8	90.1	1.2	8.7	0.0
All	Coniferous	181 460.1	39 587.5	74 368.2	23 614.3	319 030.1	56.9	12.4	23.3	7.4
	Broadleaved	1 042 319.4	0.0	79 028.5	31 490.8	1 152 838.7	90.4	0.0	6.9	2.7
	Total	1 223 779.6	39 587.5	153 396.6	55 105.1	1 471 868.8	83.1	2.7	10.4	3.7

Table 3.7 Summary of forest areas in the Scotland showing assignment of high-level management types

Ownership	Coniferous/ broadleaved	Forest area by management type (ha)					Percentage of total area			
		No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover	Total	No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover
Public	Coniferous	145 510.0	102 247.7	45 295.6	27 527.4	320 580.7	45.4	31.9	14.1	8.6
	Broadleaved	27 214.4	0.0	0.0	661.5	27 875.9	97.6	0.0	0.0	2.4
	Total	172 724.4	102 247.7	45 295.6	28 189.0	348 456.6	49.6	29.3	13.0	8.1
Private	Coniferous	238 996.6	217 886.8	67 262.9	0.0	524 146.2	45.6	41.6	12.8	0.0
	Broadleaved	293 107.5	0.0	20 306.2	0.0	313 413.7	93.5	0.0	6.5	0.0
	Total	532 104.0	217 886.8	87 569.1	0.0	837 559.9	63.5	26.0	10.5	0.0
All	Coniferous	384 506.6	320 134.5	112 558.5	27 527.4	844 726.9	45.5	37.9	13.3	3.3
	Broadleaved	320 321.8	0.0	20 306.2	661.5	341 289.6	93.9	0.0	5.9	0.2
	Total	704 828.4	320 134.5	132 864.7	28 189.0	1 186 016.5	59.4	27.0	11.2	2.4

Table 3.8 Summary of forest areas in Wales showing assignment of high-level management types

Ownership	Coniferous/ broadleaved	Forest area by management type (ha)					Percentage of total area			
		No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover	Total	No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover
Public	Coniferous	28 974.0	13 481.8	22 500.2	13 657.0	78 613.0	36.9	17.1	28.6	17.4
	Broadleaved	6 126.4	0.0	0.0	3 866.0	9 992.3	61.3	0.0	0.0	38.7
	Total	35 100.4	13 481.8	22 500.2	17 523.0	88 605.3	39.6	15.2	25.4	19.8
Private	Coniferous	28 095.9	11 129.9	13 246.9	0.0	52 472.7	53.5	21.2	25.2	0.0
	Broadleaved	151 622.7	0.0	5 560.2	0.0	157 182.9	96.5	0.0	3.5	0.0
	Total	179 718.5	11 129.9	18 807.2	0.0	209 655.6	85.7	5.3	9.0	0.0
All	Coniferous	57 069.9	24 611.6	35 747.1	13 657.0	131 085.6	43.5	18.8	27.3	10.4
	Broadleaved	157 749.0	0.0	5 560.2	3 866.0	167 175.2	94.4	0.0	3.3	2.3
	Total	214 818.9	24 611.6	41 307.4	17 523.0	298 260.9	72.0	8.3	13.8	5.9

Table 3.9 Summary of forest areas in Northern Ireland showing assignment of high-level management types

Ownership	Coniferous/ broadleaved	Forest area by management type (ha)					Percentage of total area			
		No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover	Total	No harvesting	No thinning with clearcutting	Thinning and clearcutting	Continuous cover
Public	Coniferous	14 014.2	22 850.6	9 849.1	0.0	46 713.9	30.0	48.9	21.1	0.0
	Broadleaved	1 549.3	89.3	82.9	0.0	1 721.4	90.0	5.2	4.8	0.0
	Total	15 563.5	22 939.9	9 932.0	0.0	48 435.4	32.1	47.4	20.5	0.0
Private	Coniferous	2 613.5	4 261.4	1 836.8	0.0	8 711.7	30.0	48.9	21.1	0.0
	Broadleaved	10 835.4	624.5	579.5	0.0	12 039.3	90.0	5.2	4.8	0.0
	Total	13 448.9	4 885.9	2 416.2	0.0	20 751.0	64.8	23.5	11.6	0.0
All	Coniferous	16 627.7	27 112.0	11 685.9	0.0	55 425.6	30.0	48.9	21.1	0.0
	Broadleaved	12 384.8	713.8	662.3	0.0	13 760.9	90.0	5.2	4.8	0.0
	Total	29 012.5	27 825.8	12 348.2	0.0	69 186.5	41.9	40.2	17.8	0.0

For the purposes of developing the FRL, in addition to assigning high-level forest management types to the forest strata, it is also necessary to define detailed Forest Management Practices (FMPs) to forest areas, stratified according to the system illustrated in Figure 3.1 above. These detailed FMPs define:

- The timing of thinnings (with respect to the age of forest areas) and the quantities of biomass harvested
- For FMPs involving clearcutting, the rotation ages assigned to forest areas and quantities of biomass harvested when clearcutting.

The timing of thinnings and quantities of biomass removed depend on tree species and yield class and are based principally on yield tables describing conventional forestry practice in the UK (Matthews et al., 2016ab). In Annex 3, worked examples are given explaining how these details have been calculated and presented in the detailed descriptions of the FMPs.

The rotations assigned to forest areas involving clearcutting vary with country, forest ownership, tree species and yield class, and also depend on whether or not forest areas are thinned. Crucially, these rotations have been characterised based on information sources available for the public forest estate and for the private sector, for the Reference Period of 2000 to 2009.

For the public forest estate in England, Scotland and Wales, rotations have been characterised by analysing apparent clearcutting activities, as indicated by information available in the public forest sub-compartment databases for each country, for each year from 2000 to 2009. A description of the methodology applied for this analysis is given in Annex 4.

For the private sector in England, Scotland and Wales, rotations have been based on those assigned to forest areas as part of a forecasting exercise carried out by the Forestry Commission for the private sector in 2006 (Halsall et al., 2006). These rotations were characterised through consultation with forestry sector expert groups in England, Scotland and Wales, undertaken specifically for the 2006 forecasting exercise and represent the best available proxy for rotations applied in areas managed for production in private sector forests in the period 2000-2009.

For Northern Ireland, only very limited evidence is available on rotation ages applied to forest areas. Hence, the rotation ages assigned (where relevant) have been based on those suggested as consistent with optimal economic management in British yield tables (Matthews et al., 2016a), for both public and private forests. It should be noted that the total area of broadleaved forests in Northern Ireland assigned to high-level forest management types involving clearcutting is very small (see Table 3.8 above).

The detailed FMPs developed according to the methods described above (and in Annexes 3 and 4) are given in Annex 5. Essentially, individual FMPs have been defined for combinations of:

- Country
- Forest ownership

- Tree species
- Yield class
- High-level forest management type.

There is a single FMP for the high-level forest management type of “no harvesting”, essentially involving no thinning or clearcutting. For the high-level management type of “continuous cover”, the detailed FMPs vary with tree species and yield class but not with country or forest ownership.

The FMPs given in the tables in Annex 5 can be related to forest strata in terms of tree species and yield class by referring to codes also included in the tables for each of the FMPs. For example, the code, “SSYC12NTS” indicates that the FMP is applicable for the forest area stratum of Sitka spruce (SS), yield class 12 (YC12), no thinning with clearcutting (NT) in Scotland (S). Similarly, the code, “GFYC22THESW” indicates that the FMP is applicable for the forest area stratum of grand fir (GF), yield class 22 (YC22), thinning with clearcutting (TH) in England, Scotland and Wales (ESW).

The detailed assignment of FMPs to the forest strata in Annex 2, by FMP index number and by country, forest ownership, tree species and yield class, is given in Annex 6. The areas of individual strata are also shown. These allocations of FMPs to strata are entirely based on information relevant for the Reference Period, and their allocations of the FMPs to strata remain constant for the entire projection made for constructing the FRL, i.e. historically, during the Reference Period and subsequently up to and during the Compliance Period.

Projected forest area

The information presented above and in Section 3.2.1 constitutes the essential input data for the process of developing the FRL, as specified in Boxes 3.1 and 3.2 (Section 3.1). The FRL methodology enables the area of Managed Forest Land, distributed according to age classes, to be projected over the Reference Period, up to the present and into the future.

Table 3.10 shows the breakdown of total forest area in the UK in 2011, according to the FRL methodology, showing the contributions from Managed Forest Land, land converted to forest land from other land uses, and non-wooded areas within forests.

According to Table 3.10, Managed Forest Land in 2011 represents 88% of the total wooded forest area in the UK. Hence, the contribution of land converted to forest land to the total wooded forest area is relatively large, at 12%. This reflects the relatively high levels of afforestation in the UK in previous decades.

Table 3.10 Modelled forest area in 2011 according to FRL methodology

Component of stocked forest area	Area (ha)
Managed forest land	3 120 779
Land converted to forest land	408 219
Total forest area	3 528 997

Note: Forest areas include non-wooded land categorised as part of Forest Land i.e. including associated areas of land cover such as forest roads, rides, rocky ground, rivers etc.

Land converted to Forest Land makes a transition to Managed Forest Land after 20 years. This is consistent with the UK GHG Inventory submitted to the UNFCCC in 2019 covering years 1990 to 2017.

For the modelling of Managed Forest Land from the Reference Period up to and including the Compliance Period, the UK is assuming the dynamic development of managed forest land. Hence, changes in the development of the area of Managed Forest Land are modelled in the projection of the FRL. This has involved calculating the area of Managed Forest Land for each individual year, allowing for historical and projected gains in forest area from afforestation and losses in forest area from deforestation. The annual rates for both afforestation and deforestation, as applied in the 1990-2017 GHG Inventory are also applied in the modelling of the FRL. The rates estimated for the year 2017 are then projected into the future for projecting the FRL.

Table 3.11 shows the modelled evolution of the area of Managed Forest Land over the Reference Period of 2000 to 2009, projected up to the year 2025.

Over the period 2000 to 2017, the area of Managed Forest Land has increased by around 27.5 thousand hectares per year. This reflects the balance between gains from land converted to forest land making the transition to Managed Forest Land and losses due to deforestation. Since there is currently no information on the age-distribution of the area of small woods (between 0.1 and 0.5 ha) which are not included in the forest planting statistics, it was assumed to have established evenly between 1900 and 1970. Variations in the rate of change reflect variations in historical and projected rates of afforestation (20 years beforehand) and also variations in the rate of deforestation over the period. Tree planting rates in the UK have declined since the early 1990s and the projected area of Managed Forest Land from 2017 increases between 2017 and 2025 at around 18 thousand hectares per year with a decreasing trend.

Figures 3.3 and 3.4 illustrate the modelled development of the age class distribution of the area of wooded Managed Forest Land in the UK:

- Over the period 2000 to 2025 according to the FRL projection (Figure 3.3) and
- Over the period 2000 to 2015 for the 1990-2017 GHG Inventory (Figure 3.4).

Table 3.11 Modelled wooded area of Managed Forest Land over the period 2000 to 2025

Year	Wooded area (ha)	Annual change (ha yr-1)
2000	2 775 439	-
2001	2 799 984	24 545
2002	2 823 295	23 311
2003	2 848 438	25 144
2004	2 876 713	28 275
2005	2 905 356	28 642
2006	2 938 564	33 208
2007	2 976 949	38 385
2008	3 019 186	42 237
2009	3 060 095	40 908
2010	3 099 270	39 175
2011	3 120 779	21 509
2012	3 142 503	21 724
2013	3 165 275	22 772
2014	3 189 320	24 046
2015	3 210 237	20 916
2016	3 229 244	19 007
2017	3 249 811	20 567
2018	3 270 167	20 355
2019	3 290 760	20 594
2020	3 311 877	21 117
2021	3 329 800	17 923
2022	3 346 964	17 164
2023	3 362 119	15 155
2024	3 379 723	17 604
2025	3 394 873	15 150

Figure 3.3. Modelled development of age class structure of area of wooded Managed Forest Land based on the FRL projection.

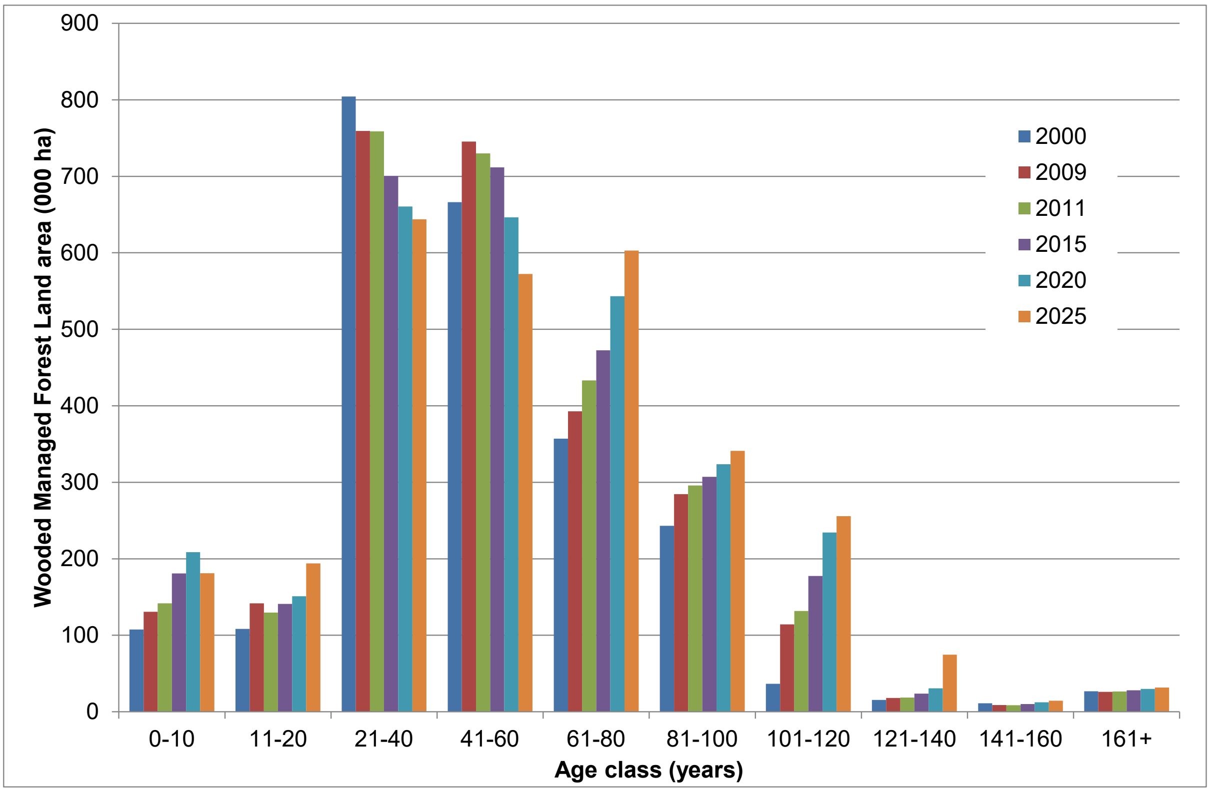
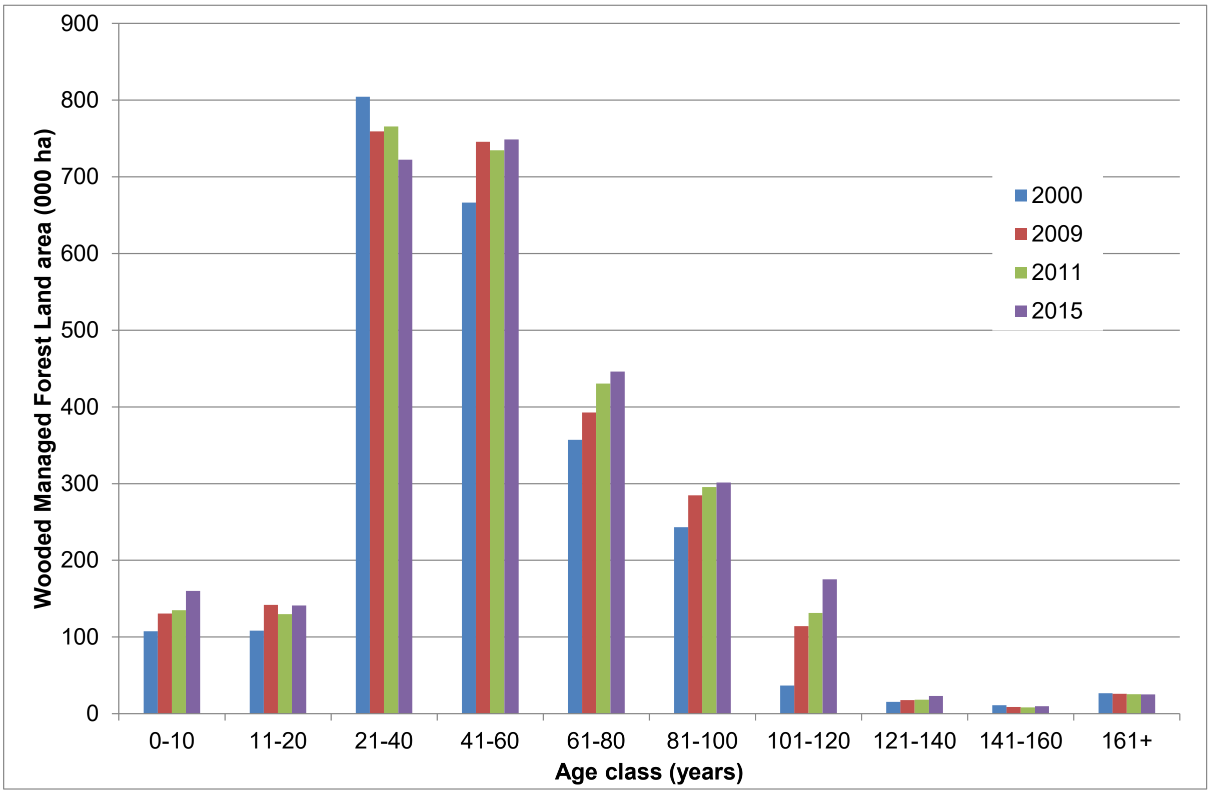


Figure 3.4. Modelled development of age class structure of area of wooded Managed Forest Land based on the 1990-2017 GHG inventory.

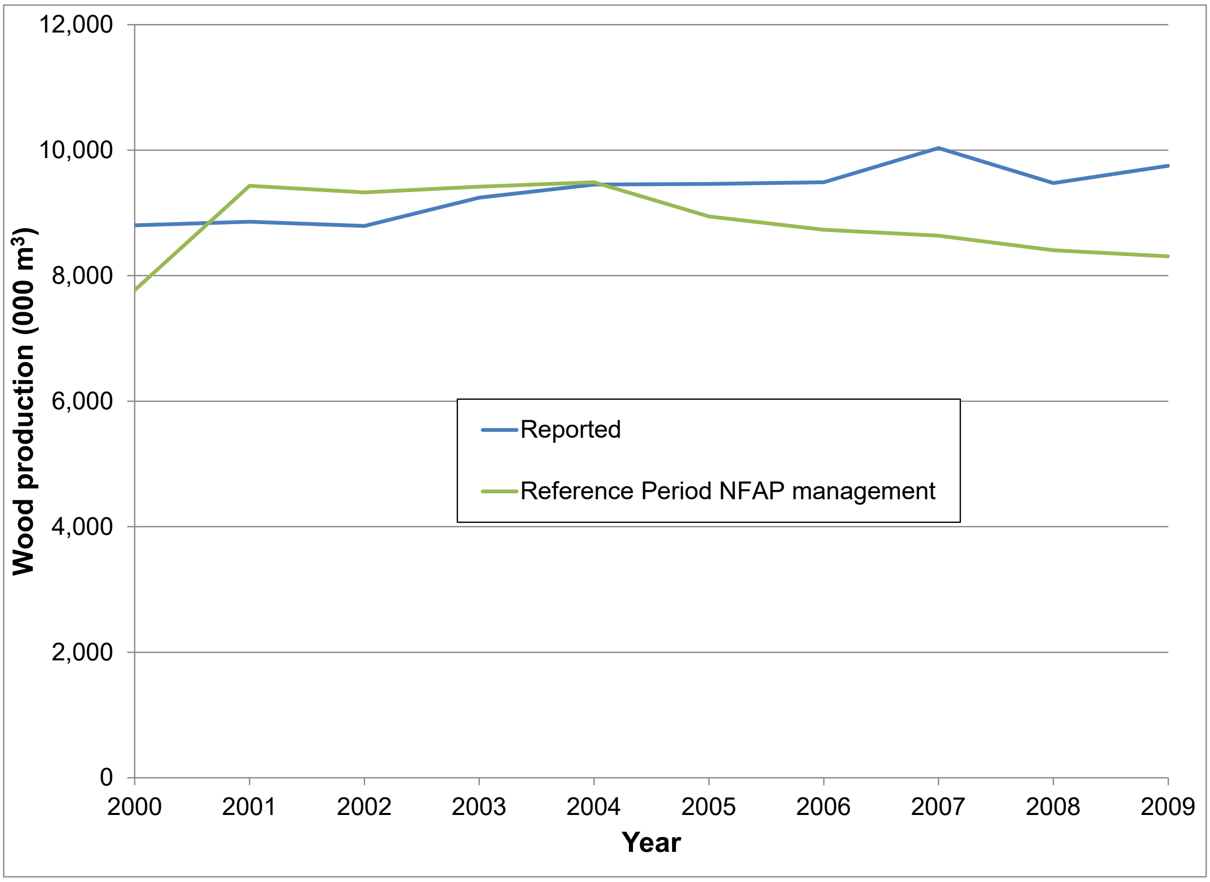


Up to 2011, the age class distributions in Figures 3.3 and 3.4 are essentially the same, showing the consistency of the modelling of the FRL with the GHG inventory up to the year 2010. In 2015, there are differences in the age class distributions of the FRL projection and the GHG Inventory, although these are difficult to discern from the figures. Under the FRL projection, there is less area in the age classes 21-40 years and 41-60 years, indicating more felling (clearcutting) in these age classes, compared with the GHG Inventory. Conversely, there is more area in age class 61-80 years for the FRL projection, indicating slightly less felling in this age class. Essentially, this phenomenon reflects the continued growth of areas not being harvested on shorter rotations under the FRL projection, compared with the GHG Inventory. Overall more area is felled in the GHG Inventory projection.

The general pattern described above is apparent in 2011 and more pronounced in the simulated age class distributions for 2015.

As described in Box 3.2 and the associated discussion, in "FRL Step 4" (Box 3.2), a check is carried out to ensure that simulated and reported wood production during the Reference Period are consistent. Figure 3.5 shows statistics on wood production in the UK for the period 2000 to 2009, compared with simulated wood production, as generated by the modelling framework (see Sections 3.1 and 3.3), when the FMPs developed for the FRL are applied, starting in the year 2000.

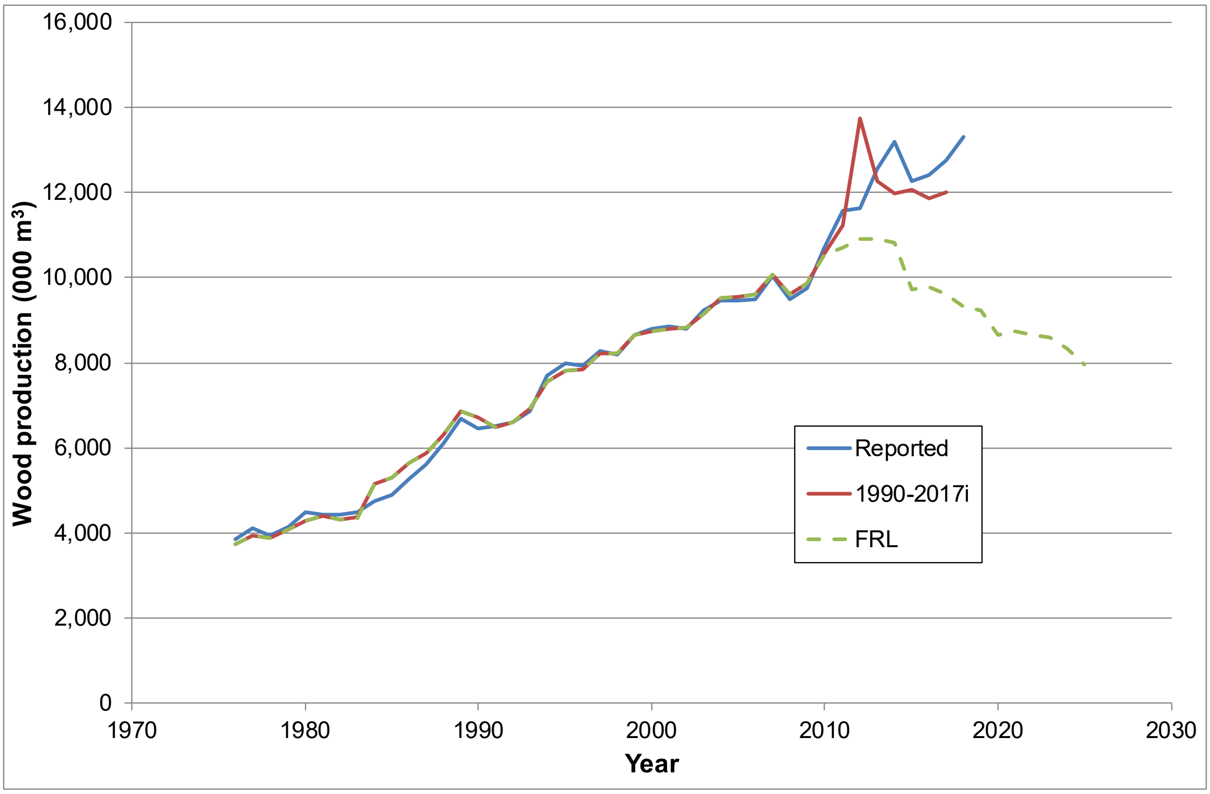
Figure 3.5. Comparison of reported and simulated wood production over the Reference Period.



Simulated and reported wood production are fairly consistent, and simulated wood production does not deviate from reported production by more than about 5%. A better match could be achieved (as is the case in the 1990-2017 GHG Inventory simulation) but only by not following precisely the FMPs characterised based on the evidence available for the Reference Period.

Figure 3.6 shows reported statistics on wood production in the UK from 1976 to 2017, compared with simulated wood production, as generated for the modelling framework (see Sections 3.1 and 3.3), when the FMPs developed for the FRL are applied. It should be noted that, for the construction of the FRL projection ("FRL Step 5", Box 3.2), the FMPs characterised for the Reference Period are applied from the year 2010, rather than the year 2000, which was the case in Figure 3.5. For the FRL, a projection of the level of wood production is given up to 2025. The simulated wood production for the 1990-2017 GHG inventory (up to 2017) is shown for comparison.

Figure 3.6. Comparison of reported and simulated wood production between 1976 and 2017, with FRL projection to 2025



For most years, wood production simulated by the modelling framework is very close to reported production, and for many years simulated and reported production are almost indistinguishible. The biggest deviations in the GHG inventory simulation are from 2012 onwards, where the model is responding to a pronounced rise in reported wood production. This increase is the result of market conditions, which in turn reflect the age class distribution of forest areas (particularly coniferous areas), with large areas at ages around those conventionally associated with final harvest (clearfelling and restocking). There may also be some "rebound" in production levels, following an apparent levelling off during 2005 to 2009, possibly in response to the global economic difficulties experienced over this period.

Simulated wood production for the GHG inventory and the FRL are effectively identical up to the end of the Reference Period in 2009. Between 2010 and 2013, simulated wood production for the FRL departs from the projection for the GHG inventory and levels off. From 2014, the FRL projection exhibits a decreasing trend such that, by 2025, production is simulated to return to levels observed around the beginning of the Reference Period (2000). The marked change in trend shown in the FRL projection, compared with the GHG inventory projection and reported wood production, reflects the forest management prescriptions (thinning and felling) characterised for the Reference Period, which do not represent the apparently enhanced levels of harvesting in more recent years, and may instead be more influenced by the somewhat depressed trend in production during 2005 to 2009.

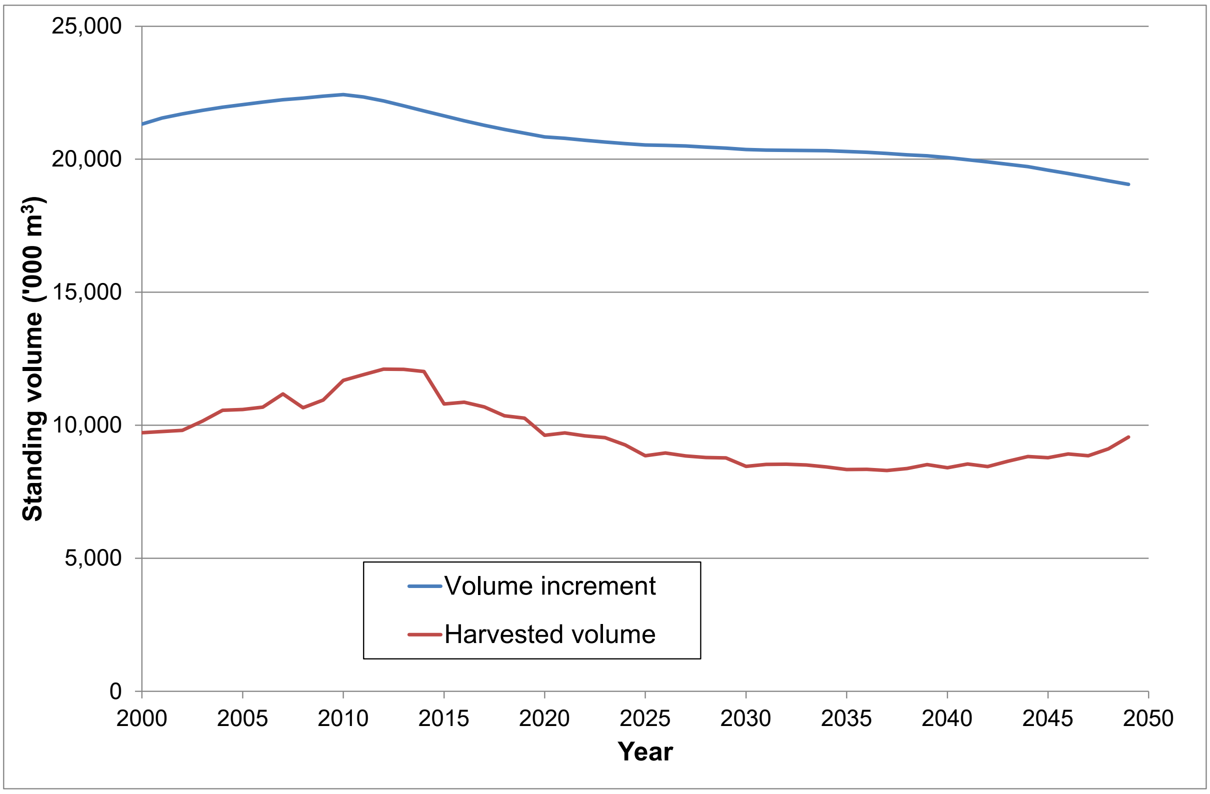
Comparison of forest increment and harvest levels

Figure 3.7 shows a projection of the increment of UK forests over the period 2000 to 2050, in comparison with wood harvesting levels, as simulated for the FRL projection. For the purposes of this comparison:

- Forest increment is based on the current annual increment of standing stem volume over bark, net of losses due to mortality
- Harvesting levels are based on equivalent standing stem volume over bark.

Both of the above quantities are given in units of thousands of cubic metres per year. However this scales linearily with carbon.

Figure 3.7. Projected net forest increment compared with annual harvesting over the period 2000 to 2050 as simulated for the FRL projection.



Projected increment is fairly stable over the period 2000 to 2050 (around 21 Mm^3 yr^{-1}), although it begins to diminish slowly after about 2015. This reflects the projected evolution of the age class distribution of UK forests, and in particular the presence of a significant component of ageing forests (which are not being harvested).

Projected harvesting levels appear to be in a fairly constant ratio to forest increment. Generally, less than half of the potential increment is harvested in any given year. This suggests that a significant proportion of managed UK forests are not being utilised for wood production (based on the levels of harvest reported in the Forestry Commission harvest statistics for the Reference Period of 2000 to 2009). This may be one explanation for the apparently marked rise in harvesting levels observed in wood production statistics in more recent years (see preceding discussion and in particular Figure 3.6). It should be noted that the apparently significant underutilisation of managed forests in the UK over the period 2000-2009 could have led to issues in the long term if this practice had been continued, because of increased risks of storm and fire damage in ageing forest stands, and possibly greater vulnerability to attacks from pests and diseases. As discussed in section 2.3.2, it may also be partially an artefact due to the underestimation of hardwood harvest as the statistics are focused mainly on commercial wood harvest being derived from sawmill returns and underestimate non-commercial hardwood harvest. Improved statistics on non-commercial hardwood harvest might result in a technical correction of the FRL.

3.3: Detailed description of the modelling framework as applied in the estimation of the forest reference level

Overview

The modelling framework applied for the estimation of the FRL is based on the CARBINE forest sector carbon accounting model, developed by Forest Research. Examples of calculations made by the CARBINE model have been included in earlier reports (e.g. Morison et al. 2012; Matthews et al., 2014, 2015).

The CARBINE model was first developed by the Research Division of the Forestry Commission (now Forest Research) in 1988 (Thompson and Matthews, 1989). Essentially it is an analytical model of the exchanges of carbon that take place between the atmosphere, forest ecosystems (trees, deadwood, litter and soil) and the wider forestry sector (harvested wood products) as a result of tree growth, mortality and harvesting (Thompson and Matthews, 1989; Matthews, 1991; Morison et al., 2012). Other land uses are represented in CARBINE ‘at the margin’, i.e. to the extent necessary to represent land use transformations involving forests such as afforestation of cropland or grassland or conversion of forest to other land uses (deforestation). CARBINE also represents other economic sectors ‘at the margin’, notably the Energy and Construction sectors, in order to estimate the impacts of changes in patterns of timber harvesting and utilisation on consumption of fossil fuels and alternative materials, and consequent changes in GHG emissions (Matthews, 1994, 1996).

CARBINE has common features of structure and functionality with other analytical forest sector and forest carbon accounting models, notably EFISCEN (Schelhaas et al., 2007), C-Flow (Dewar, 1990, 1991; Cannell and Dewar, 1995), CO2FIX (Mohren and Klein Goldewijk, 1990; Nabuurs, 1996; Mohren et al., 1999), CBM-CFS3 (Kurz et al., 2009), C-change (Beets et al., 1999) and GORCAM (Marland and Schlamadinger, 1995, 1999; Schlamadinger and Marland, 1996). Studies comparing CARBINE and C-Flow (the other main forest carbon accounting model developed in the UK) revealed many similarities and consistencies in the functioning and results produced by the two models (Robertson et al., 2003; Matthews et al., 2014c).

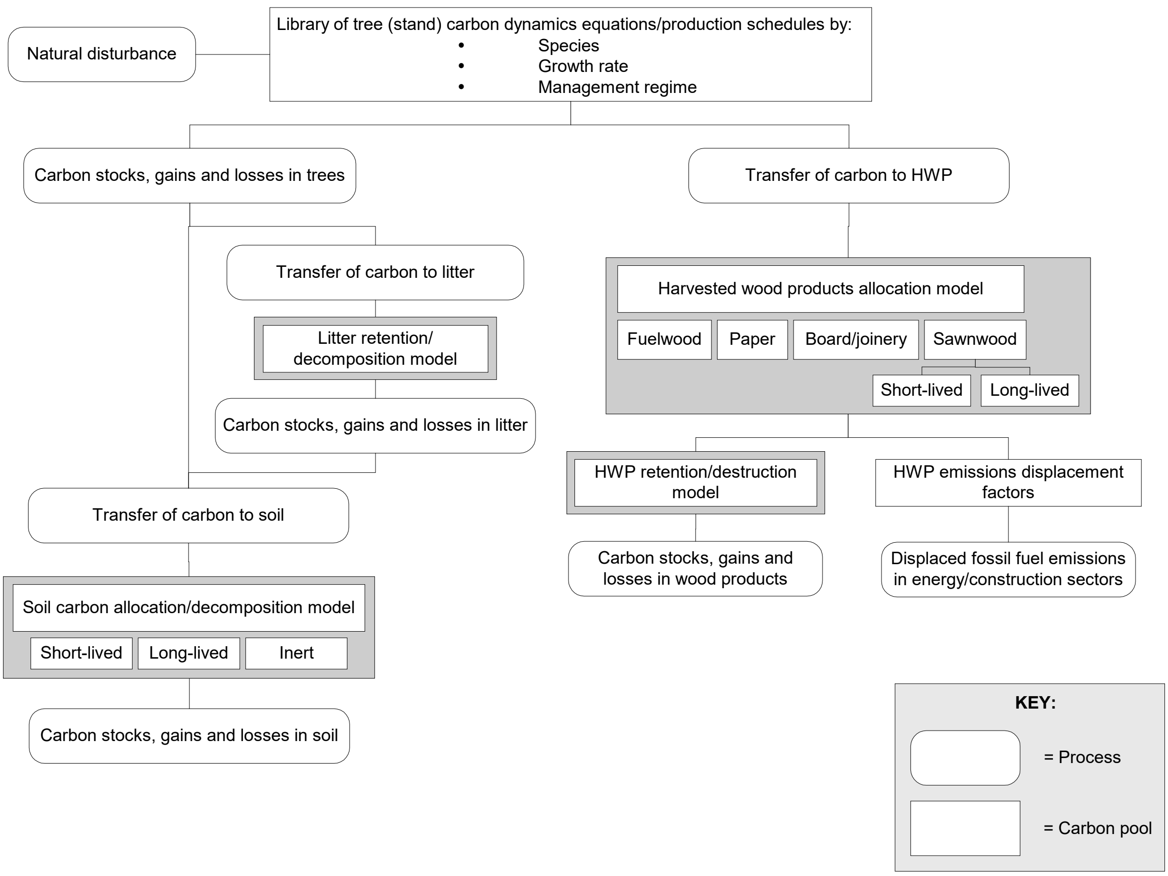
The CARBINE model also has the capacity to produce estimates of other variables not directly to do with forest carbon but of great relevance to decisions about forest management, for example:

- Levels of wood and timber production (which can be broken down into specific wood product categories if required)
- The development of forest area age class distributions over time
- Changes in the species composition of forests in response to management interventions (where relevant).

In terms of documentation, the CARBINE model has been described and discussed in a number of papers (Thompson and Matthews, 1989; Matthews, 1991, 1994, 1996; Matthews and Broadmeadow, 2009; Morison et al., 2012). The development and improvement of the model has been a significant exercise covering many years and the publication of a complete description of CARBINE is planned. A full description is in preparation (Matthews et al., 2018).

A schematic diagram of the structure of the CARBINE model is given in Figure 3.8.

Figure 3.8. Diagram illustrating the scope, structure and function of the CARBINE model.



Tree growth, management and wood production

The main driving module of CARBINE consists of a set of computerised mathematical functions and algorithms describing the accumulation (and loss) of carbon in tree biomass of different forestry systems at the per-hectare scale. Different functions and algorithms are used to represent distinct forestry systems, defined in terms of:

- Tree species composition
- Tree growth rate (yield class)
- Management regime applied.

The tree species and growth rates represented are based on yield models originally produced by the British Forestry Commission (Matthews et al., 2016ab). The tree species covered include examples for coniferous species of spruces, pines, firs, larches, cedars, cypresses and all the major temperate and boreal broadleaf tree species. Growth rates in terms of mean annual increment (MAI) of stem volume can be represented in the range from 2 m^3 ha^{-1} yr^{-1} up to 30 m^3 ha^{-1} yr^{-1}.

As already explained, the mathematical functions describing forest development and levels of harvesting are based on standard models of forest growth and yield developed by the British Forestry Commission (Matthews et al., 2016ab). However, these are implemented in CARBINE as a dynamic yield model, known as M1 (Arcangeli and Matthews, unpublished model), which enables the representation of a wide range of management prescriptions (e.g. in terms of patterns of thinning and felling). Basic management regimes represented in the CARBINE model include:

- No thinning and no clearcutting (i.e. effectively no management for production)
- No thinning with clearcutting on a specified rotation
- Thinning with clearcutting on a specified rotation
- ‘Continuous cover’ silviculture (i.e. forest management with harvesting that also aims to always maintain tree cover on the land).

It is also possible to specify detailed rotations and levels of thinning, and changes in the management of forest areas over time, involving transitions between the broad management regimes indicated above, and also adjustments to rotations and transitions in tree species and growth rates on restocking.

Tree biomass and carbon

In CARBINE, stem biomass is estimated by multiplying estimates of stem volume by a value for the basic density of wood for the relevant tree species, expressed as oven dry tonnes of mass per cubic metre of ‘green’ timber volume (Lavers, 1983). Biomass estimates are converted to equivalent estimates of carbon by multiplying by a standard value for wood carbon content of 0.5 tC odt^{-1} (Matthews, 1993).

Carbon and biomass in tree roots, branches and foliage are estimated based on allometric relationships with stemwood. These relationships are based on interpretation of summary estimates of root, branch, foliage and stem biomass using the Forestry Commission BSORT forest stand biomass model (Matthews and Duckworth, 2005; Jenkins et al., 2013).

Deadwood and litter carbon

CARBINE includes a sub-model for representing accumulation and loss of carbon in dead wood and litter. Inputs of litter are related to the standing biomass of trees and also to rates of tree mortality. Levels of tree mortality are represented implicitly in the standard Forestry Commission growth models, and explicit estimates are included in models for stands subject to no thinning, where mortality levels are high. Root and branch wood volume associated with dead trees is estimated in the same way as for living stemwood, by reference to allometric relationships. Deadwood and litter is assumed to decay according to a first order process, with rate constants that are normally set to be consistent with boreal and temperate conditions (Balster and Marshall, 2000; Brunner et al., 2013; Godbold et al., 2003; Janssens et al., 2002; Konôpka et al., 2006; Kurz and Beukema, 1996; Perruchoud, et al., 1999; Ťupek et al., 2015) but can be adjusted for Mediterranean and tropical conditions.

Soil carbon

The CARBINE model includes an advanced sub-model for representing soil carbon pools and dynamics, based on the ECOSSE soil carbon model (Smith et al., 2007). CARBINE represents inputs of organic matter to forest soils from litter and fine root turnover. The relative contributions due to fine root turnover and litter vary with soil type and tree species/growth rate.

Harvested Wood Products

The CARBINE model includes a representation of the fate of forest biomass and carbon following harvesting and conversion into useful wood products, including bioenergy.

Carbon stock changes in harvested wood products are calculated by applying the production approach and Tier 1 methods including default half-life values as defined in relevant guidance from the Intergovernmental Panel on Climate Change (IPCC Guidance).

Allocation of harvested wood to product types (energy and solid wood)

Regulation 2018/841 requires that, in simulating the projection for the FRL, harvested wood is allocated for use for energy purposes and for solid wood products according to a constant ratio characterised for the Reference Period. In other words, the proportions of harvested and wood allocated to energy and non-energy uses are held constant, based on the proportions for the Reference Period. Table 3.12 shows the allocation of wood harvested from UK forests to semi-finished wood product types, as defined in in IPCC Good Practice Guidance (IPCC, 2013), as characterised for the Reference Period of 2000 to 2009 from reported statistics (Forestry Commission, 2018).

Table 3.12 Allocation of harvested wood to semi-finished wood product types during the Reference Period

Year	Sawnwood (%)	Wood-based panels (%)	Paper (%)	Woodfuel/ wood used for energy purposes (%)
2000	39.11	37.66	13.34	9.89
2001	39.30	37.73	13.07	9.90
2002	39.85	36.08	13.83	10.24
2003	39.76	35.85	14.04	10.35
2004	40.54	37.23	11.60	10.63
2005	40.07	36.52	11.34	12.08
2006	41.86	36.01	8.46	13.66
2007	42.32	35.11	6.73	15.83
2008	41.46	33.59	7.63	17.33
2009	40.09	30.96	7.10	21.86
Mean allocation of harvested wood for use for energy purposes (%)				13.18

The percentage of harvested wood used for energy purposes ("Wood fuel") varies from about 10% to nearly 22% from year to year in the forest statistics and may be noted to be increasing over the period. The mean percentage is 13.18%. This percentage was applied for the modelling of the FRL projection to allocate harvested wood to use for energy purposes. The remainder was allocated for use in solid wood or composite wood products. Table 3.13 shows simulated annual wood production as allocated to types of semi-finished wood product, as simulated for the FRL projection for the period of 2000 to 2025, expressed in units of megatonnes carbon (MtC). As discussed in section 2.3.2, the forest statistics for the 2000-2009 period are focussed on commercial wood harvest being derived from sawmill returns and underestimate non-commercial hardwood harvest. Improved statistics on non-commercial hardwood harvest might result in a technical correction of the FRL.

During the Reference Period, the allocation of harvested wood to semi-finished wood product types conforms to reported statistics and the 1990-2017 GHG Inventory. From 2010 onwards, the percentage allocation of harvested wood for use for energy purposes is seen to be held constant at the value characterised above for the Reference Period. The percentage allocations to the solid wood product types vary slightly from year to year, depending on the relative contributions to harvested wood from softwoods and hardwoods, as simulated for the FRL projection.

Table 3.13 Allocation of harvested wood to semi-finished wood product types for the FRL projection for the period 2000 to 2009

Year	Quantity harvested (MtC)				Allocation (%)			
	Sawn-wood	Wood-based panels	Paper	Energy	Sawn-wood	Wood-based panels	Paper	Energy
2000	0.6311	0.6077	0.2153	0.1597	39.11	37.66	13.34	9.89
2001	0.6361	0.6107	0.2116	0.1602	39.30	37.73	13.07	9.90
2002	0.6492	0.5879	0.2253	0.1669	39.85	36.08	13.83	10.24
2003	0.6686	0.6027	0.2361	0.1740	39.76	35.85	14.04	10.35
2004	0.7068	0.6489	0.2022	0.1854	40.54	37.23	11.60	10.63
2005	0.7024	0.6402	0.1988	0.2117	40.07	36.52	11.34	12.08
2006	0.7358	0.6329	0.1487	0.2402	41.86	36.01	8.46	13.66
2007	0.7783	0.6457	0.1238	0.2911	42.32	35.11	6.73	15.83
2008	0.7285	0.5901	0.1340	0.3045	41.46	33.59	7.63	17.33
2009	0.7245	0.5595	0.1283	0.3951	40.09	30.96	7.10	21.86
2010	0.8867	0.6738	0.1187	0.2549	45.84	34.84	6.14	13.18
2011	0.9102	0.6799	0.1218	0.2598	46.16	34.48	6.18	13.18
2012	0.9490	0.6711	0.1258	0.2650	47.19	33.37	6.26	13.18
2013	0.9666	0.6574	0.1224	0.2651	48.06	32.68	6.09	13.18
2014	0.9765	0.6455	0.1173	0.2640	48.75	32.22	5.85	13.18
2015	0.8563	0.5977	0.1048	0.2366	47.69	33.29	5.84	13.18
2016	0.8695	0.5892	0.1018	0.2368	48.38	32.78	5.66	13.18
2017	0.8776	0.5547	0.1049	0.2333	49.57	31.33	5.92	13.18

Year	Quantity harvested (MtC)				Allocation (%)			
	Sawn-wood	Wood-based panels	Paper	Energy	Sawn-wood	Wood-based panels	Paper	Energy
2018	0.8578	0.5373	0.1016	0.2272	49.76	31.17	5.89	13.18
2019	0.8625	0.5313	0.1005	0.2268	50.11	30.87	5.84	13.18
2020	0.8022	0.5030	0.0951	0.2125	49.74	31.19	5.90	13.18
2021	0.8126	0.5059	0.0957	0.2146	49.89	31.06	5.87	13.18
2022	0.8100	0.4986	0.0943	0.2129	50.13	30.86	5.84	13.18
2023	0.8074	0.4946	0.0935	0.2118	50.23	30.77	5.82	13.18
2024	0.7931	0.4794	0.0907	0.2069	50.51	30.53	5.77	13.18
2025	0.7405	0.4636	0.0877	0.1961	49.77	31.16	5.89	13.18

Input data to CARBINE

To run the CARBINE model, it is necessary to provide input data on forest areas broken into components consisting of:

- Area of forest component (ha)
- Year in which the forest component was originally planted or naturally regenerated
- Soil type associated with the forest component (essentially mineral or organic)
- Land use prior to planting or regeneration of forest (essentially arable or grassland)
- Species composition of forest component (including details of any changes in species over time), see Table 3.3 in Section 3.2.1
- Potential productivity of forest component (expressed as maximum potential stem volume production, in even-numbered classes of cubic metres per hectare per year, see Matthews et al., 2016a).
- Management prescription (details of any thinning, felling and rotation to be applied, including specifying how these details may change over time)
- Specification for how any harvested wood is used.

Potential productivity (or increment/yield class) may also be specified to change over time, so as to represent potential impacts of climate change on forest growth and development. However, this feature of the model has not been used for the purposes of calculating GHG inventories for Managed Forest Land or for developing the FRL, since no systematic data are available as a basis for such modelling. Hence, the modelling of forests for these purposes does not represent the potential effects of climate change on forest growth.

It should be apparent from the above discussion that the CARBINE model is configured to work with input data and to produce the output results needed to implement the methodologies described in Boxes 3.1 and 3.2 in Section 3.1.

Natural Disturbances

The inclusion of Natural Disturbances within the Reference Level is based on a background level established as consistently as possible with the requirements set in Annex VI of the regulation (EU) 2018/841 using available information. Before any application of the provision of article 10 of the regulation, a technical correction will be performed to establish an estimate of the impact of natural disturbances for the full period 2001-2020.

The United Kingdom natural disturbance background level covers:

(i) wildfires (CO_2, CH_4, N_2O from the combustion of biomass and dead organic matter);

(ii) extreme weather events, such as windstorms (CO_2, assuming instantaneous oxidation of the biomass pools);

(iii) Insect pest and disease infestation (CO_2, assuming instantaneous oxidation of the biomass pools);

(iv) Geological events (tsunamis)

As shown in Table 3.14, the background emission level has been assessed as 249 kt CO_2e/year on average for the FRL2021-2025 (240 kt CO_2/year; 0.011 kt N_2O/year; 0.21 kt CH_4/year).

Table 3.14 The background emissions estimated for disturbance events:

Managed Forest Land	Background level	Margin	Disturbance provision threshold
t CO_2e ha^{-1} yr^{-1}	0.074	0.037	0.111
kt CO_2e yr^{-1} (average for 2021-2025)	249	125	374

As disturbance events are generally considered to be part of the forest management cycle in the UK, monitoring mechanisms have not yet been established to provide comprehensive, geo-referenced, data on disturbance events. However, a number of data-sets have been accessed which, together with expert judgement, have allowed to establish a background level and margins for Managed Forest Land, which ensure time series consistency over time in all relevant parameters, including minimum area, emission estimation methodologies, coverages of carbon pools and gases, as required by the Annex VI (1)d of the regulation (EU) 2018/841.

The timeframes covered by the individual datasets do not cover the full period 2001-2017 in all cases. Where data are not available for individual disturbance categories in some years, data-filling has used the mean over their individual calibration periods. Assumptions concerning salvage logging (see details under individual disturbance categories, below) has allowed emissions associated with salvage-logging to be excluded from the background emissions.

Emissions resulting from disturbance events (after the exclusion of emissions from salvage-logging) have been estimated on the basis of instantaneous oxidation.

Wildfire: Annual emissions from wildfire on Forest Land are reported explicitly in the UK's LULUCF GHG inventory. These data have been apportioned to Managed Forest Land and Afforested Land on the basis of the ratio between the two forest categories, weighted by their relative carbon stocks, (it assumes that those stocks are 20% of those of Managed Forest Land on Afforested Land to reflect the younger growth phase). It is assumed that land use change does not occur following wildfire. The IPCC Tier 1 method is used for estimating emissions of CO_2 and non-CO_2 gases from wildfires (IPCC 2006). Country-specific biomass and Dead Organic Matter densities from the CARBINE model are used for estimating fuel consumption in forest fires and the ‘extra tropical forest’ emission factors in the 2006 Guidelines. In line with the default value in the IPCC 2006 Guidelines for AFOLU it is assumed that 45% of the biomass is consumed in a wildfire in an unfelled temperate forest.

Estimates of the forest area burnt in wildfires 1990-2004 are published in different locations (FAO/ECE 2002; FAO 2005) but all originate from either the Forestry Commission (Great Britain) or the Forest Service (Northern Ireland). There is a gap in the time series 2005-2010 for Great Britain but areas of forest wildfires have been reported annually for Northern Ireland. The gap was filled using the annual average areas burnt 1995-2005. These areas refer only to fire damage in state forests; no information is collected on fire damage in privately owned forests. The proportion of private-owned forest that was burnt each year was assumed to be the same as the percentage of the state forest that was burnt each year.

Assumptions: For the other disturbances, carbon stocks and thus emissions are estimated on the basis of mean carbon stocks in the living biomass for conifers (295 tCO_2e/ha) and broadleaves (299 tCO_2e/ha), respectively, reported by the National Forest Inventory.

Plant health: Statutory Plant Health Notices (SPHNs) are issued for some regulated pest and disease infestations, requiring felling and, in some cases, imposing movement restrictions on the timber. Data are available for the period 2010-2018 in Forestry Statistics. Restocking is not required following issuance of an SPHN; however, it is strongly encouraged, supported by grant-aid and experience to date indicates that more than 99% of the area has been restocked either by planting or natural regeneration. SPHN area is allocated to Managed Forest Land and Afforested Land based on their relative proportion in the total Forest Areas, with 80% salvage-logging assumed for Managed Forest Land (expert judgement).

Other monitoring and surveillance is used to report on the presence of specific pests and diseases (see http://www.forestry.gov.uk/pestsanddiseases). However, the area affected, and the level of mortality are not reported. Further surveillance is provided through the field survey associated with the National Forest Inventory across approximately 3,000 one hectare sample squares per annum.

Extreme weather – windstorm: The Forestry Commission maintains detailed records of land cover and use across the 250,000 ha of land it manages in England. The area of forest reported as entering the ‘windblown category’ each year between 2000 and 2013, separately for conifer and broadleaf woodland, has been used as the source data for the calibration period. These data have been extrapolated to all UK Managed Forest Land, on a proportion basis.

80% salvage-logging is assumed to have occurred in conifer woodland and 50% in broadleaf woodland, based on experience from the 1987 windstorm.

Remote sensing is being deployed more extensively to monitor woodlands in the UK as part of the National Forest Inventory. If the disturbance provision was enacted to cover a major windstorm event, these data would be used to provide robust coverage, including geo-referencing across public and private woodlands, similar to analysis undertaken for a single windstorm event in 2013[1].

Extreme weather – drought: Data on forest damage due to drought are not available, and it is assumed that emissions resulting from drought are included in the growth and yield models that underpin the LULUCF GHG inventory. A background level of zero has therefore been set over the calibration period. If a significant drought event occurred during the commitment period requiring that the disturbance provision was enacted, a bespoke report providing robust geo-referenced data would be elaborated.

Geological disturbance: No significant geological disturbances have occurred during the calibration period. Background emissions have therefore been set at zero.

Following the methodology described in annex VI (2) of the (EU) regulation 2018/841, the background level has been estimated iteratively by calculating the average of the reference period (2001-2017), excluding iteratively all years for which abnormal levels of emissions were recorded, that is to say for which the annual emissions are outside twice the standard deviation around the average. The relevant calculations are illustrated in Figure 3.9 and Table 3.15.

As a dynamic area approach was used, the analysis was applied to emissions from natural disturbances per unit area of managed forest land. In this framework, no outlier needed to be discarded.

This analysis was performed on the total emissions from natural disturbances occurring on managed forest land. In this framework, two outliers were discarded (2012 and 2013).

As the dynamic area approach was used for the projection of the NFAP and no specific guidance was provided within the Commission guidance document, the calculated level was then adjusted for the increase in area of managed forest land between the period 2001-2017 used to identify outliers and the period 2021-2025, following the approach recommended in the IPCC KP 2013 supplement for situation where the area change significantly between the reference period and the commitment period (box 2.3.8, page 2.53).

[1] Forestry Commission (2014e).Survey of the impact of the 2013 St. Jude's day storm on woodland in Southern England. https://www.forestresearch.gov.uk/documents/2768/NFI_St-Judes-day-storm-damage-survey-report.pdf

Figure 3.9. Calculation of the background level.

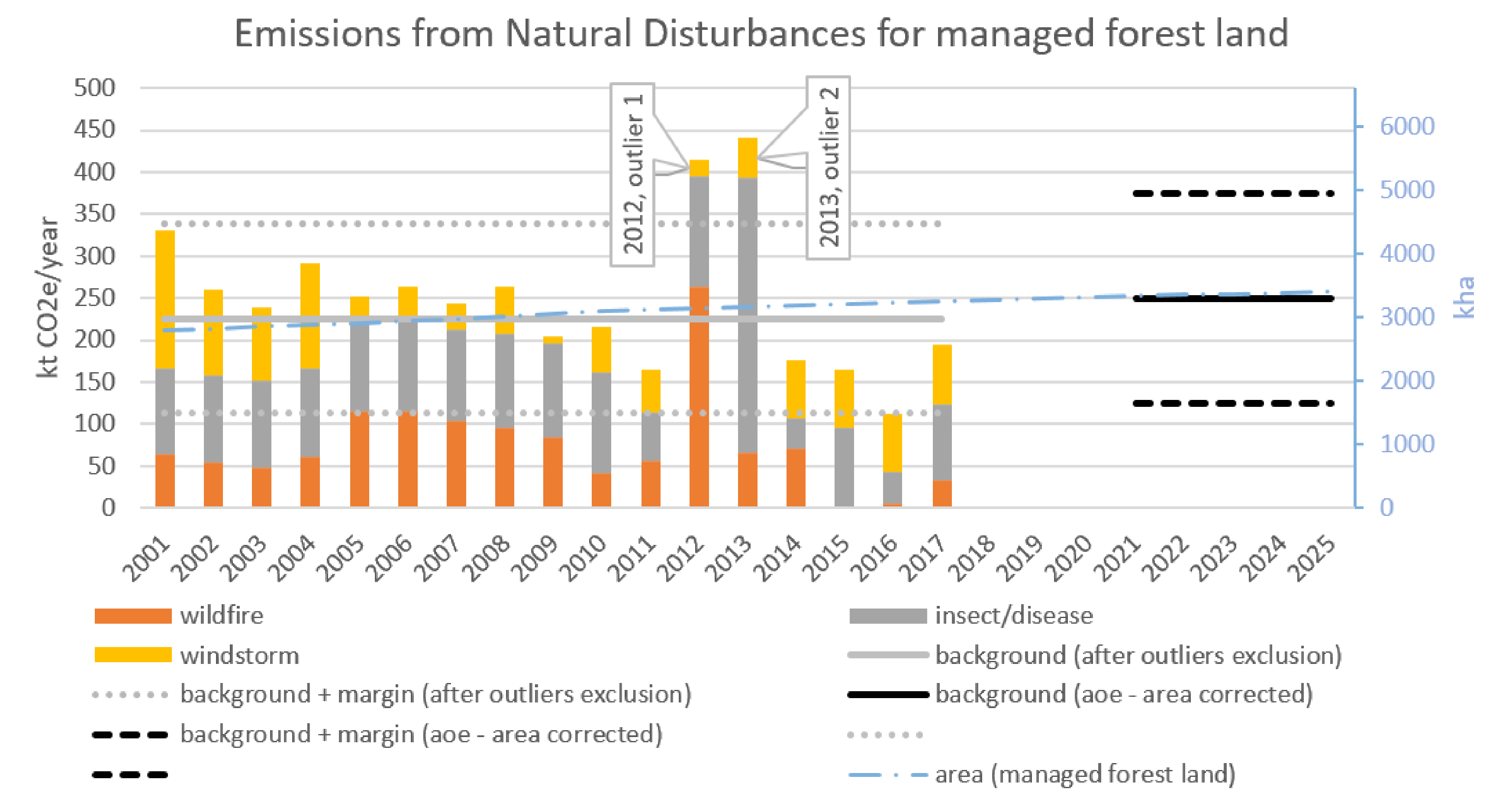


Table 3.15 Background emissions for disturbance events for the calibration period 2001-2017 for Managed Forest Land.

tCO2e yr-1	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average	Standard deviation	Background level ‡	Background + margin ‡
Wildfire	64	55	47	62	116	115	103	96	85	42	57	264	66	70	0	6	33	63	33		
Insect/diseases	102*	103*	104*	105*	106*	107*	109*	110*	112*	120	58	131	327	37	96	37	91	93	27		
Windstorm	164	103	87	124	30	41	32	57	8	54	51	19	49	69*	69*	70*	70*	69	39		
Drought**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Geological	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sum	331	261	238	291	252	263	244	264	204	216	165	414&	442&	176	165	113	194	**225**	**56**	**249**	**374**
For all land under Managed Forest Land	**Total area (kha)**																				
	2800	2823	2848	2877	2905	2939	2977	3019	3060	3099	3121	3143	3165	3189	3210	3229	3250	**3039 (average 2001-2017)**		**3363 (average 2021-2025)**	
	Area specific emissions (kt CO_2e/year)																				
	0.118	0.092	0.084	0.101	0.087	0.090	0.082	0.087	0.067	0.070	0.053	0.132†	0.140†	0.055	0.051	0.035	0.060	**0.074**#	**0.019**#		

Notes: *Data filling with mean disturbance emissions per unit area of managed forest land ; ** background data not available ; † outliers excluded from the calculation of the background level and its margins ; ‡ after removal of outliers following the procedure describe in the annex VI (B) of the LULUCF regulation and the increase in areas of managed forest land between the reference period and the period 2021-2025 ; # average emissions divided by the average of the areas (not directly the average over time of area specific emissions.

Modelling of non-CO2 emissions occurring on Managed Forest Land

Non-CO_2 emissions from wildfire (reported in the GHG inventory under CRF 4(V)) are included in the Forest Reference Level through the background level of natural disturbances (see section preceding discussion).

Non-CO_2 emissions from drainage (reported in the inventory under CRF 4(II)) for forest land, without distinction between forest land remaining forest land and land converted to forest land have been included in the Forest Reference Level consistently with the approach used in the inventory (see Table 3.16). As explained in Section A.3.4.6 of the UK NIR, CH_4 emissions are not estimated while N_2O emissions are estimated using the Tier 1 methodology and the IPCC default emission factors (IPCC, 2006) for drained mineral soils (0.06 kg N_2O-N ha^{-1} yr^{-1}), nutrient-rich organic and organo-mineral soils (0.6 kg N_2O-N ha^{-1} yr^{-1}) and nutrient-poor organic and organo-mineral soils (0.1 kg N_2O-N ha^{-1} yr^{-1}). A split of those emissions between Managed Forest Land and Afforested Land is then estimated using the area of organic and mineral soil in the FRL projections, and then assuming that the share of each sub-strata of drained organic soil (resp. drained mineral soil) is kept constant over the projection from 2018 onward.

Direct emissions from N inputs (4(I)), nitrogen mineralisation/immobilisation (4(III)) are currently not assumed to occur on land converted to forest land (i.e. no fertiliser application), and therefore none are included in the Forest Reference Level.

Table 3.16 Emissions of N_2O from soil drainage in the Forest Reference Level

Area (kha)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Drained organic soils	155	159	163	167	172	177	182	188	193	197	200	203	205	207	209	211	212	214	215	216	218	219	220	221	222	223
Drained organic - Nutrient-rich	34	35	35	36	37	38	39	40	41	42	43	43	44	44	44	45	45	45	45	46	46	46	47	47	47	47
Drained organic - Nutrient-poor	122	125	128	131	135	139	143	147	152	155	158	160	162	163	165	166	167	169	170	171	172	173	174	174	175	176
Drained Mineral Soils	407	410	413	417	420	424	428	433	438	444	449	452	454	457	460	463	466	469	472	475	478	481	483	485	488	490
Drained Organo-mineral Nutrient-rich	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Drained Organo-mineral Nutrient-poor	300	303	305	308	311	314	318	322	326	331	336	339	341	344	347	350	352	354	357	359	361	363	365	367	369	370

N_2O (kt)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Drained organic soils	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Drained organic - Nutrient-rich	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Drained organic - Nutrient-poor	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Drained Mineral Soils	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Drained Organo-mineral Nutrient-rich	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drained Organo-mineral Nutrient-poor	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Total	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18

N_2O (kt CO_2e)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Drained organic soils	15.2	15.6	15.9	16.3	16.8	17.2	17.7	18.2	18.7	19.1	19.4	19.6	19.8	20.0	20.2	20.3	20.5	20.6	20.7	20.8	21.0	21.1	21.2	21.3	21.4	21.5
Drained organic - Nutrient-rich	9.5	9.7	10.0	10.2	10.5	10.7	11.0	11.3	11.6	11.9	12.0	12.1	12.3	12.3	12.4	12.5	12.6	12.7	12.8	12.9	12.9	13.0	13.1	13.1	13.2	13.3
Drained organic - Nutrient-poor	5.7	5.8	6.0	6.1	6.3	6.5	6.7	6.9	7.1	7.3	7.4	7.5	7.6	7.6	7.7	7.8	7.8	7.9	7.9	8.0	8.0	8.1	8.1	8.2	8.2	8.2
Drained Mineral Soils	11.4	11.5	11.6	11.7	11.8	11.9	12.0	12.2	12.3	12.5	12.6	12.7	12.8	12.8	12.9	13.0	13.1	13.2	13.3	13.3	13.4	13.5	13.6	13.6	13.7	13.8
Drained Organo-mineral Nutrient-rich	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
Drained Organo-mineral Nutrient-poor	14.0	14.2	14.3	14.4	14.6	14.7	14.9	15.1	15.3	15.5	15.7	15.9	16.0	16.1	16.3	16.4	16.5	16.6	16.7	16.8	16.9	17.0	17.1	17.2	17.3	17.3
Total	41.9	42.5	43.0	43.7	44.3	45.0	45.8	46.7	47.6	48.4	49.0	49.4	49.9	50.2	50.7	51.0	51.4	51.7	52.0	52.3	52.7	52.9	53.2	53.5	53.7	54.0

Chapter 4: Forest Reference Level

4.1: Forest Reference Level and detailed description of the development of the carbon pools

4.1.1 Forest Reference Level and detailed description of the development of the carbon pools for a transition period of 20 years

Table 4.1 gives details of the annualised carbon stock changes estimated to occur in forest carbon pools, according to the FRL projection, for the Reference Period and for the periods 2010-2015 and 2016-2020. This describes the detailed development of the carbon pools contributing to the FRL projection from the Reference Period up to the start of the Compliance Period. The results for the Compliance Period of 2021-2025 are also shown in Table 4.1.

Table 4.1: Detailed description of the development of the carbon pools over time in the run of CARBINE used to define the FRL.

Carbon pool	Annualised carbon stock change for period (ktCO2e yr-1)			
	2000-2009	2010-2015	2016-2020	2021-2025
Above-ground tree carbon	-8 599.46	-8 288.65	-8 929.47	-9 361.50
Below-ground tree carbon	-2 655.80	-2 620.39	-2 789.09	-2 947.29
Litter	-421.63	-384.00	-238.18	-257.83
Deadwood	-3 267.94	-3 385.01	-2 779.66	-2 428.66
Organic soil	-263.26	-558.60	-695.06	-742.16
Mineral soil	-3 135.79	-3 777.67	-4 117.23	-4 320.30
Sum of pools	-18 343.88	-19 014.33	-19 548.69	-20 057.73
N2O emissions from drainage	45.95	50.42	52.32	53.47
Natural disturbance background level	249	249	249	249
FRL without HWP	-18 048.93	-18 714.91	-19 247.37	-19 755.26
HWP CO_2 Emissions	-1 950.81	-2 492.05	-1 529.29	-946.29
FRL with HWP	-19 999.75	-21 206.96	-20 776.66	-20 701.55

The total change in carbon stocks is a net carbon sink, which is projected to remain fairly consistent over the period, increasing in the period 2010-2015, then decreasing slightly in the period 2016-2025. This is the result of:

- A generally progressively increasing carbon sink in tree biomass, apart from the period 2010-2015 when there is a slight decrease
- A progressively increasing carbon stock in soils
- A decreasing sink in the HWP, litter and deadwood pools as a result of the lower level of forest management assumed during the projection period (2010-2025)

4.1.2 Forest Reference Level and detailed description of the development of the carbon pools for a transition period of 30 years

As explained in Section 1.1, within this National Forestry Accounting Plan, the Forest Reference Level has been calculated by assuming that the transition to managed forest land already occurs 20 years after the date of conversion to ensure consistency with emissions and removals reported for forest land remaining forest land in the existing greenhouse gas inventories. The results presented in Table 4.1 above and in later sections in this chapter are consistent with this convention.

Following article 6(2) of the LULUCF Regulation, the UK intends to categorise cropland, grassland, wetland, settlements or other land converted to forest land as making the transition to managed forest land from 30 years after the date of conversion. This will be implemented to satisfy the criteria A.a of annex VI of the LULUCF regulation. It will be realised through a technical correction to the Forest Reference Level.

Table 4.2 gives details of the annualised carbon stock changes estimated to occur in forest carbon pools, according to the FRL projection, for the Reference Period and for the periods 2010-2015 and 2016-2020, when a 30-year transition period is adopted.

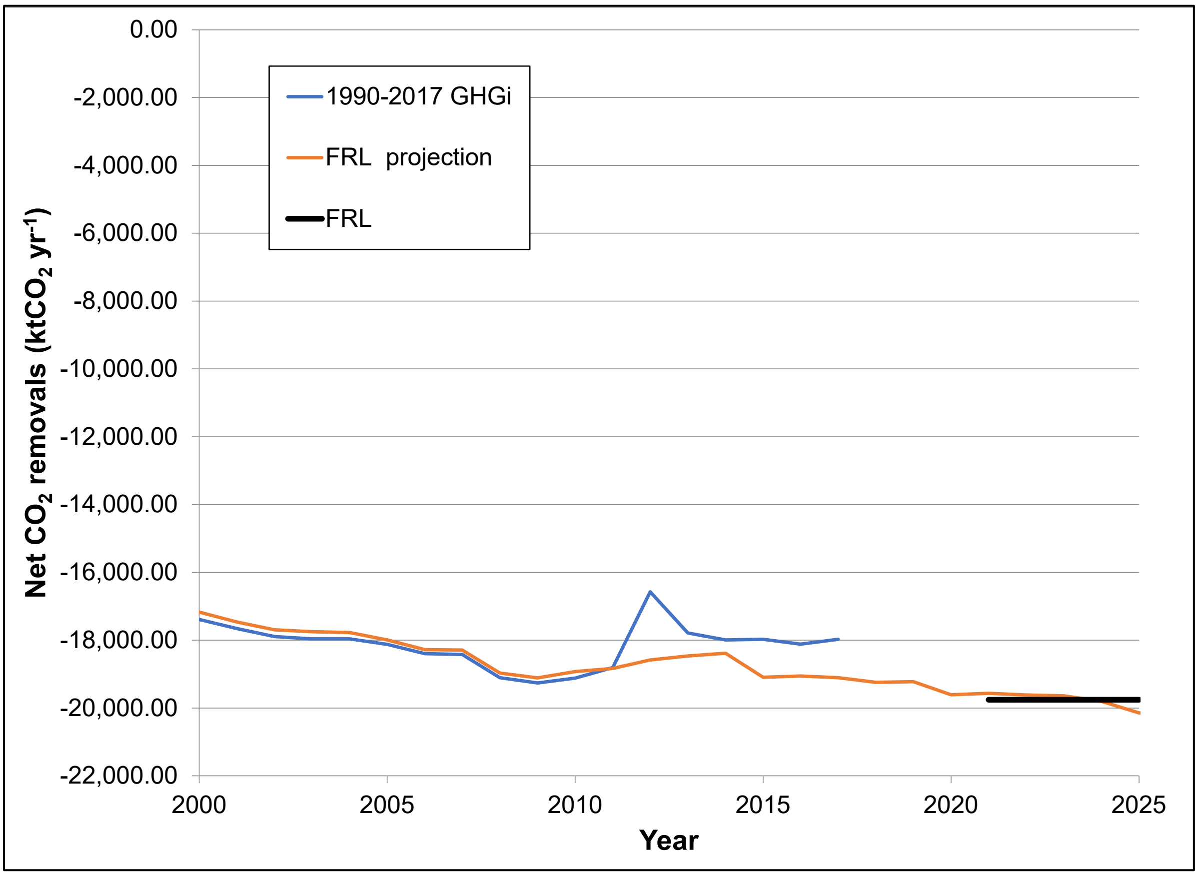
Table 4.2: Detailed description of the development of the carbon pools over time in the run of CARBINE used to define the FRL, based on an alternative transition period of 30 years for land converted to forest land to become managed forest land.

Carbon pool	Annualised carbon stock change for period (ktCO2e yr-1)			
	2000-2009	2010-2015	2016-2020	2021-2025
Above-ground tree carbon	-5 395.33	-5 290.65	-6 726.18	-7 662.44
Below-ground tree carbon	-1 552.81	-1 590.64	-2 047.54	-2 380.01
Litter	-300.77	-243.93	-129.15	-182.15
Deadwood	-2 878.36	-2 932.18	-2 418.48	-2 185.94
Organic soil	-383.05	-639.43	-734.87	-768.04
Mineral soil	-3 488.08	-4 106.42	-4 380.54	-4 578.08
Sum of pools	-13 998.39	-14 803.25	-16 436.76	-17 756.66
N2O emissions from drainage	45.95	50.42	52.32	53.47
Natural disturbance background level	249	249	249	249
FRL without HWP	-13 703.44	-14 503.83	-16 135.44	-17 454.19
HWP CO_2 Emissions	-1 810.15	-2 258.40	-1 346.00	-845.26
FRL with HWP	-15 513.60	-16 762.23	-17 481.44	-18 299.46

4.2: Consistency between the forest reference level and the latest national inventory report

Figure 4.1 shows the net carbon stock changes of Managed Forest Land in the UK over the period 2000 to 2017 as reported in the UK GHG Inventory for 1990-2017, in comparison to the carbon stock changes estimated for the FRL projection over the same period and projected to 2025. Carbon stock changes in harvested wood products are not included in the results. The carbon stock changes are expressed in units of $ktCO_2\ yr^{-1}$, with negative numbers indicating net CO_2 removals.

Figure 4.1 Comparison of GHGI and FRL and reported projections.



Both the GHG Inventory and the FRL projection indicate that Managed Forest Land is a net carbon sink over the period from 2000 to 2017, with net CO_2 removals rising from about 17 $MtCO_2\ yr^{-1}$ in 2000 to around 18 $MtCO_2\ yr^{-1}$ (GHG Inventory) to 19 $MtCO_2\ yr^{-1}$ (FRL projection) in 2017. Under the FRL projection, net removals continue to rise to just over 20 $ktCO_2\ yr^{-1}$ by 2025.

The net removals estimated by the FRL projection are almost identical to those for the GHG Inventory over the period 2000 to 2009 (differences are typically less than 1%). This small inconsistency is a result of the inclusion in the FRL of an allowance for the background level of natural disturbance. After this point, the two trajectories of net CO2 removals deviate from one another, with the GHG Inventory reporting lower removals than suggested by the FRL in the period 2010 to 2017.

As explained in Section 3, the UK uses the same modelling framework for calculating the FRL and for calculating GHG Inventory results for Managed Forest Land. In addition, the forest strata characterised for the FRL calculations are the same as those used in calculating GHG Inventories. Hence, if the Forest Management Practices assumed in calculating a GHG inventory are used as inputs to the FRL modelling framework, the results should be identical to those reported in the GHG Inventory.

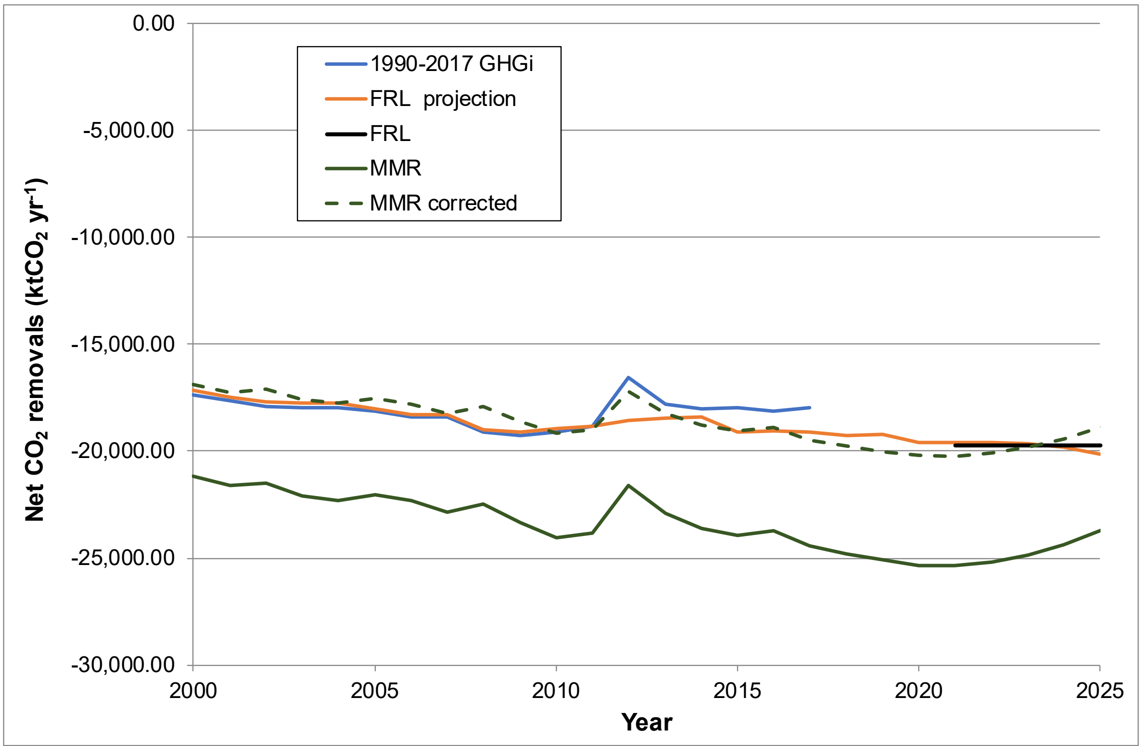
Up to and including the year 2009, the forest strata and forest management prescriptions set as inputs to the modelling framework for constructing the FRL are the same as those applied in modelling the GHG Inventory for 1990-2017. Hence, the estimates reported in the GHG Inventory and those of the FRL are essentially the same. From 2010 onwards, the FRL projection is expected to deviate from the GHG Inventory results because assumptions about management prescriptions in the FRL have been fixed at those representative of the Reference Period, whereas management in the GHG Inventory will continue to evolve. In particular, management prescriptions in the GHG inventory change to match the changes in reported levels of wood harvesting over the period 2010 to 2017. Given that harvesting levels appear to have risen markedly over this period, and that harvesting levels for the FRL projection are lower (see Section 3.2), net CO_2 removals in Managed Forest Land would be expected to be higher for the FRL than for the GHG Inventory (as a result of the lower levels of harvesting).

Consistency of FRL projection with Regulation (EU) 525/2013

Regulation (EU) 2018/841 requires demonstration of the consistency of net emissions and removals project by the FRL with the national projections of anthropogenic greenhouse gas emissions reported under Regulation (EU) 525/2013 (also referred to as the “Mechanism for Monitoring and Reporting”, or MMR). Under this Regulation, EU Member States report national projections of anthropogenic greenhouse gas emissions by sources and removals by sinks, taking into consideration any policies and measures adopted at Union level.

Figure 4.2 shows a comparison of the net CO_2 removals of Managed Forest Land, as projected from 2000 to 2025 in the UK’s submission to the MMR, and the net CO_2 removals reported by the latest (1990-2017) GHG Inventory and the FRL projection. It should be noted that the MMR projection is based on the UK’s GHG Inventory for 1990-2016.

Figure 4.2 Comparison of GHGI and FRL and reported projections.



In considering the results in Figure 4.2, it is important to bear in mind that the modelling methodology for estimating emissions and removals of Forest Land in the UK for the purposes of GHG Inventory reporting has undergone several significant methodological improvements in recent years. The most important ones of relevance to the results in Figure 4.2 are:

- Improved modelling of soil carbon dynamics
- Closer matching of modelled wood production with reported levels.

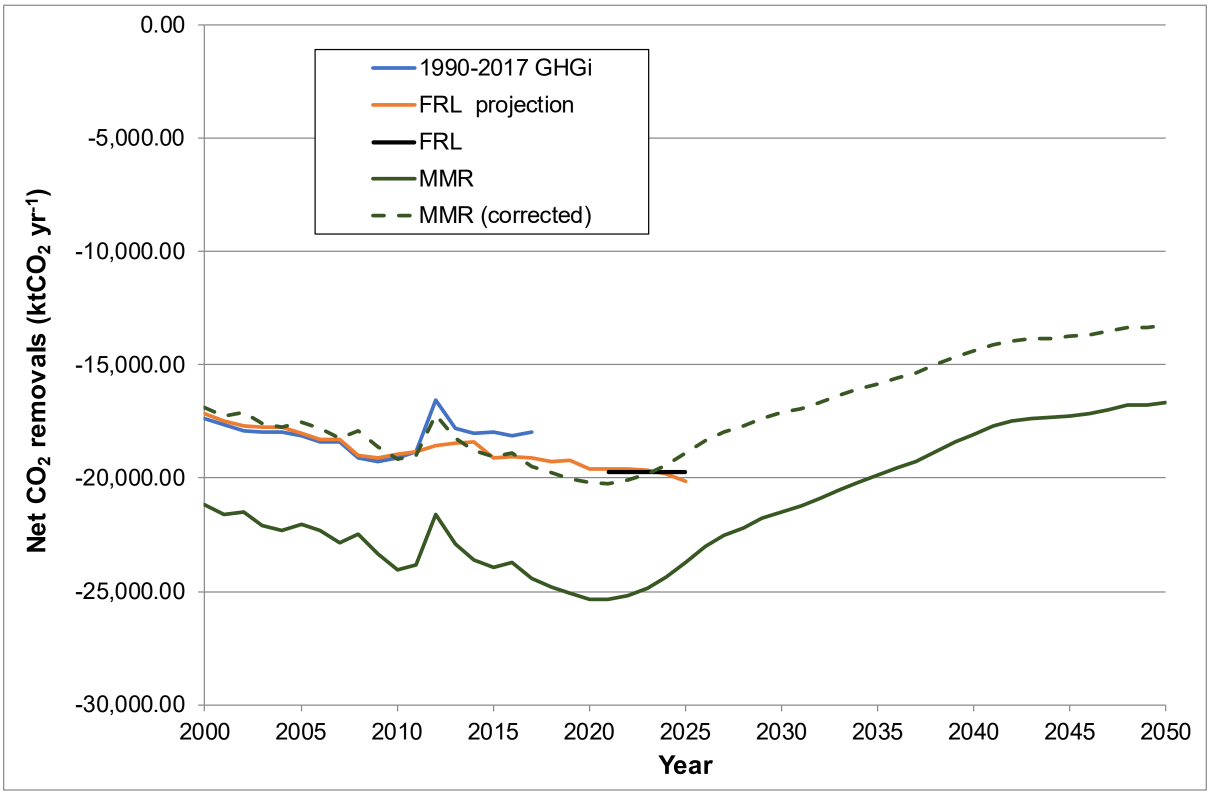
These improvements were introduced progressively during the development of the 1990-2015 GHG Inventory, the 1990-2016 GHG Inventory and the 1990-2017 GHG Inventory. As a consequence, the estimated net CO_2 removals of Managed Forest Land have changed significantly between these three reported GHG Inventories. As a consequence, the net CO_2 removals for Managed Forest Land indicated by the MMR submission (which is based on the 1990-2016 GHG Inventory) are markedly different than those of the 1990-2017 GHG Inventory and the FRL projection. To permit a consistent comparison, a correction was made to the MMR projection using the IPCC overlap method, applied to the results for the MMR projection and the 1990-2017 GHG Inventory for the period 1990 to 2017.

Net CO_2 removals of Managed Forest Land for the period 2000 to 2025 based on the corrected MMR projection are very similar to the levels suggested by the FRL projection. Both projections give results that are consistent with the GHG Inventory up to at least 2009 (see earlier discussion of Figure 4.1). From 2011 onwards, the corrected MMR projection gradually deviates from the GHG Inventory results. This is because the modelling of wood production to match reported levels was further improved in the 1990-2017 GHG Inventory, compared to the 1990-2016 GHG Inventory, for which the match between simulated and reported wood production was less accurate.

Consistency of FRL projection with long-term emissions goal

In Figure 4.3, the projections submitted by the UK under the MMR and presented in the previous section have been extended until 2050. This shows that, already in a reference case scenario, the UK forest land (and the UK managed forest land more specifically) are expected to remain a sink until 2050, although of decreasing magnitude if no further measures are implemented.

Figure 4.3. Projections of emissions and removals of Managed Forest Land up to 2050 for a reference case scenario.



As will be discussed further in the UK Long Term Strategy due under the (EU) regulation 2018/1999, more ambitious afforestation policies are amongst the options considered by the UK to increase further the long-term forest sink.

In October 2017, the UK Government published its Clean Growth Strategy setting out ambitious policies and proposals, through to 2032, to reduce emissions across the economy and promote clean growth. Through this strategy, the UK government already committed to “design woodland creation incentives that attract more landowners and farmers to plant on marginal land, including through agroforestry and bioenergy production, to help diversify land-based businesses and enhance the farmed environment.”

In response to the special report published in October 2018 by the Intergovernmental Panel on Climate Change (IPCC) on the impacts of global warming of 1.5°C, the UK Government requested advice from the Committee on Climate Change (CCC) on the implications of the Paris Agreement for the UK’s long-term emissions reduction targets, including on setting a net zero target. In May 2019, the CCC recommended that the UK should legislate as soon as possible to reach net-zero greenhouse gas emissions[2]. The CCC suggested further that a combination of Core and Further Ambition options would cut emissions by 96% from 1990 levels, to 35MtCO2e in 2050. It considered that afforestation of around 30,000 hectares per year (increasing woodland cover from the current 13% of UK land area to 17%), combined with an

[2] CCC (2019) Net Zero - The UK's contribution to stopping global warming https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/

increase in active woodland management, could increase the net forestry sink to 22 $MtCO_2e$ per year by 2050.

Consistent with this ambition, the UK intends to move to a 30 years transition period for afforestation to ensure the benefits of afforestation in terms of carbon sequestration are appropriately reflected in the UK international accounting.

This will make the determination of the reference level more consistent with the goal of achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century (criteria A.(a) of the annex VI of the Regulation (EU) 2018/841).

4.3: Calculated carbon pools and greenhouse gases for the forest reference level

Table 4.3 shows the calculation of the final FRL for the Compliance Period 2021-2025, including other contributions to emissions and removals as well as contributions due to forest carbon pools. Essentially, there are additional values included in the calculation to allow for the UK's nominated Natural Disturbance Background Level of 249 kt CO_2e yr^{-1} and N_2O emissions from the drainage of forest soils.

Table 4.3 Calculated carbon pools and greenhouse gases for the Forest Reference Level

Source of contribution to FRL	Emissions or removals (+/-) (kt CO2e yr-1)
Above-ground tree carbon	-9 361.50
Below-ground tree carbon	-2 947.29
Litter	-257.83
Deadwood	-2 428.66
Organic soil	-742.16
Mineral soil	-4 320.30
Sum of pools	-20 057.73
N_2O emissions from drainage	53.47
Natural disturbance background level	249
FRL without HWP	-19 755.26
HWP CO_2 Emissions	-946.29
FRL with HWP	-20 701.55

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Annex 1 Handling of minor species in modelling through association with major UK tree species

Common name	Latin name	CARBINE species
Alder	Alnus spp	Birch
Armand's pine	Pinus armandii	Scots pine
Ash	Fraxinus excelsior	Ash
Aspen	Populus tremula	Poplar
Atlas cedar	Cedrus atlantica	Noble fir
Austrian pine	Pinus nigra var nigra	Corsican pine
Beech	Fagus sylvatica	Beech
Bhutan pine	Pinus wallichiana	Scots pine
Big leaf maple	Acer macrophyllum	Sycamore
Birch	Betula spp	Birch
Bird cherry	Prunus padus	Birch
Bishop pine	Pinus muricata	Lodgepole pine
Black poplar	Populus nigra	Poplar
Black walnut	Juglans nigra	Oak
Blackthorn	Prunus spinosa	Sycamore
Bornmuller's fir	Abies bornmuelleriana	Noble fir
Box	Buxus spp	Birch
Calabrian pine	Pinus brutia	Scots pine
Cedar of Lebanon	Cedrus libani	Noble fir
Cider gum	Eucalyptus gunnii	Poplar
Coast redwood	Sequoia sempervirens	Grand fir
Common alder	Alnus gultinosa	Birch
Common Lime	Tilia europaea	Ash
Common walnut	Juglans regia	Oak
Common whitebeam	Sorbus aria	Birch
Corsican pine	Pinus nigra var maritima	Corsican pine
Crab apple	Malus sylvestris	Sycamore
Crack willow	Salix fragilis	Birch
Douglas fir	Pseudotsuga menziesii	Douglas fir
Downy birch	Betula pubescens	Birch
Downy oak	Quercus pubescens	Oak
Elm	Ulmus spp	Beech

English elm	Ulmus procera	Beech
European larch	Larix decidua	European larch
Field maple	Acer campestre	Sycamore
Goat willow	Salix caprea	Birch
Grand fir	Abies grandis	Grand fir
Greek fir	Abies cephalonica	Noble fir
Green alder	Alnus viridis	Birch
Grey alder	Alnus incana	Birch
Grey poplar	Populus canescens	Poplar
Grey willow	Salix cinerea	Birch
Hawthorn	Crataegus spp	Birch
Hazel	Corylus avellana	Birch
Holly	Ilex spp	Sycamore
Holm oak	Quercus ilex	Oak
Hornbeam	Carpinus betulus	Beech
Horse Chestnut	Aesculus hippocastanum	Sycamore
Hungarian oak	Quercus frainetto	Oak
Hybrid larch	Larix x eurolepis	Japanese larch
Italian alder	Alnus cordata	Birch
Japanese cedar	Cryptomeria japonica	Western red cedar
Japanese larch	Larix kaempferi	Japanese larch
Juniper	Juniperus communis	Norway spruce
Korean pine	Pinus koreana	Scots pine
Large-leaved lime	Tilia platyphyllos	Ash
Lawsons cypress	Chamaecyparis lawsoniana	Western red cedar
Lenga	Nothofagus pumilio	Roble
Leyland cypress	Cupressocyparis leylandii	Western red cedar
Lime	Tilia spp	Ash
Loblolly pine	Pinus taeda	Corsican pine
Lodgepole pine	Pinus contorta	Lodgepole pine
London plane	Platanus x acerifolia	Sycamore
Macedonian pine	Pinus peuce	Corsican pine
Maritime pine	Pinus pinaster	Lodgepole pine
Mexican white pine	Pinus ayacahuite	Scots pine
Mixed broadleaves	Mixed broadleaf	Sycamore
Mixed conifers	Mixed coniferales	Norway spruce
Mountain pine	Pinus uncinata	Scots pine
Narrow-leafed ash	Fraxinus angustifolia	Ash
Noble fir	Abies procera	Noble fir

Nordmann/Caucasian fir	Abies nordmanniana	Noble fir
Norway maple	Acer platanoides	Sycamore
Norway spruce	Picea abies	Norway spruce
Oak	Quercus spp	Oak
Oriental beech	Fagus orientalis	Beech
Oriental spruce	Picea orientalis	Norway spruce
Other birch	Betula spp	Birch
Other broadleaves	Other broadleaf	Sycamore
Other broadleaves (non-native)	Other broadleaf	Sycamore
Other cedar	Cedrus spp	Noble fir
Other cherry	Prunus spp	Birch
Other conifers	Other coniferales	Norway spruce
Other eucalyptus	Eucalyptus spp	Poplar
Other firs (abies)	Abies spp	Noble fir
Other larches	Larix spp	European larch
Other Nothofagus	Nothofagus spp	Roble
Other oak	Quercus spp	Oak
Other pines	Pinus spp	Scots pine
Other plane	Platanus spp	Sycamore
Other poplar	Populus spp	Poplar
Other spruces	Picea spp	Norway spruce
Other walnut	Juglans spp	Oak
Other willows	Salix spp	Birch
Paper bark birch	Betula papyrifera	Birch
Pedunculate oak	Quercus robur	Oak
Ponderosa pine	Pinus ponderosa	Scots pine
Poplar	Populus spp	Poplar
Pyrenean oak	Quercus pyrenaica	Oak
Radiata/Monterey pine	Pinus radiata	Corsican pine
Raoul	Nothofagus procera	Roble
Red (pacific silver) fir	Abies amabilis	Grand fir
Red alder	Alnus rubra	Birch
Red ash	Fraxinus pennsylvanica	Ash
Red oak	Quercus rubra	Oak
Roble	Nothofagus obliqua	Roble
Rowan	Sorbus aucuparia	Birch
Scots pine	Pinus sylvestris	Scots pine
Serbian spruce	Picea omorika	Norway spruce
Sessile oak	Quercus petraea	Oak

Shagbark hickory	Carya ovata	Oak
Shining gum	Eucalyptus nitens	Poplar
Silver birch	Betula pendula	Birch
Silver fir (european)	Abies alba	Noble fir
Silver maple	Acer saccharinum	Sycamore
Sitka spruce	Picea sitchensis	Sitka spruce
Slash pine	Pinus ellottii	Lodgepole pine
Small-leaved lime	Tilia cordata	Ash
Smooth-leaved elm	Ulmus carpinifolia	Beech
Sweet chestnut	Castanea sativa	Beech
Sycamore	Acer pseudoplatanus	Sycamore
Tingiringi gum	Eucalyptus glaucescens	Poplar
Tulip tree/tulip poplar/yellow poplar	Liriodendron tulipifera	Beech
Turkey oak	Quercus cerris	Oak
Wellingtonia	Sequoiadendron giganteum	Grand fir
Western hemlock	Tsuga heterophylla	Western hemlock
Western red cedar	Thuja plicata	Western red cedar
Western white pine	Pinus monticola	Lodgepole pine
Weymouth pine	Pinus strobus	Scots pine
White ash/american ash	Fraxinus americana	Ash
White oak	Quercus alba	Oak
White poplar	Populus alba	Poplar
White willow	Salix alba	Birch
Wild cherry/gean	Prunus avium	Birch
Wild service tree	Sorbus torminalis	Birch
Wych elm	Ulmus glabra	Beech
Yew	Taxus baccata	Scots pine
Yunnan pine	Pinus yunnanensis	Scots pine

Annex 2 Detailed stratification of UK forest area (not allowing for soil class)

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	Norway spruce	Picea abies	NS	2	80.52
England	Public forest estate	Norway spruce	Picea abies	NS	4	71.15
England	Public forest estate	Norway spruce	Picea abies	NS	6	291.89
England	Public forest estate	Norway spruce	Picea abies	NS	8	722.66
England	Public forest estate	Norway spruce	Picea abies	NS	10	2 297.20
England	Public forest estate	Norway spruce	Picea abies	NS	12	1 429.63
England	Public forest estate	Norway spruce	Picea abies	NS	14	897.00
England	Public forest estate	Norway spruce	Picea abies	NS	16	626.72
England	Public forest estate	Norway spruce	Picea abies	NS	18	482.64
England	Public forest estate	Norway spruce	Picea abies	NS	20	335.14
England	Public forest estate	Norway spruce	Picea abies	NS	22	280.49
England	Public forest estate	Norway spruce	Picea abies	NS	24	3.89
England	Public forest estate	Norway spruce	Picea abies	NS	30	1.70
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	2	92.82
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	4	155.03
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	6	673.23
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	8	1 835.53

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	10	3 466.40
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	12	17 017.67
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	14	9 918.67
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	16	5 188.56
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	18	3 208.05
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	20	1 789.87
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	22	1 008.98
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	24	912.87
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	26	22.41
England	Public forest estate	Sitka spruce	Picea sitchensis	SS	28	0.29
England	Public forest estate	Scots pine	Pinus sylvestris	SP	2	182.36
England	Public forest estate	Scots pine	Pinus sylvestris	SP	4	275.06
England	Public forest estate	Scots pine	Pinus sylvestris	SP	6	923.61
England	Public forest estate	Scots pine	Pinus sylvestris	SP	8	2 822.78
England	Public forest estate	Scots pine	Pinus sylvestris	SP	10	5 084.38
England	Public forest estate	Scots pine	Pinus sylvestris	SP	12	4 372.19
England	Public forest estate	Scots pine	Pinus sylvestris	SP	14	2 119.67
England	Public forest estate	Scots pine	Pinus sylvestris	SP	16	54.27
England	Public forest estate	Scots pine	Pinus sylvestris	SP	18	6.57
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	2	18.95
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	4	22.41
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	6	64.52
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	8	225.20

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	10	818.19
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	12	3 476.31
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	14	10 619.02
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	16	5 210.28
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	18	1 210.78
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	20	787.51
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	22	0.40
England	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	24	0.20
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	2	57.80
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	4	702.23
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	6	1 035.10
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	8	1 063.88
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	10	366.11
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	12	168.10
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	14	61.16
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	16	5.40
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	18	1.93
England	Public forest estate	Lodgepole pine	Pinus contorta	LP	20	70.93
England	Public forest estate	European larch	Larix decidua	EL	2	9.77
England	Public forest estate	European larch	Larix decidua	EL	4	32.28
England	Public forest estate	European larch	Larix decidua	EL	6	190.35
England	Public forest estate	European larch	Larix decidua	EL	8	361.58
England	Public forest estate	European larch	Larix decidua	EL	10	295.35

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	European larch	Larix decidua	EL	12	323.90
England	Public forest estate	European larch	Larix decidua	EL	14	5.17
England	Public forest estate	European larch	Larix decidua	EL	16	0.35
England	Public forest estate	European larch	Larix decidua	EL	18	0.53
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	2	16.80
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	4	111.45
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	6	489.15
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	8	1 302.89
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	10	1 930.57
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	12	1 768.49
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	14	1 648.32
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	16	50.81
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	18	0.98
England	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	20	1.78
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	2	6.05
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	4	4.67
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	6	11.69
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	8	170.74
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	10	373.13
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	12	1 222.73
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	14	1 515.31
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	16	1 731.95
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	18	1 367.82

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	20	1 091.27
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	22	786.92
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	24	979.15
England	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	26	3.95
England	Public forest estate	Grand fir	Abies grandis	GF	2	5.37
England	Public forest estate	Grand fir	Abies grandis	GF	4	0.59
England	Public forest estate	Grand fir	Abies grandis	GF	6	3.97
England	Public forest estate	Grand fir	Abies grandis	GF	8	5.01
England	Public forest estate	Grand fir	Abies grandis	GF	10	23.80
England	Public forest estate	Grand fir	Abies grandis	GF	12	64.91
England	Public forest estate	Grand fir	Abies grandis	GF	14	70.04
England	Public forest estate	Grand fir	Abies grandis	GF	16	74.22
England	Public forest estate	Grand fir	Abies grandis	GF	18	47.51
England	Public forest estate	Grand fir	Abies grandis	GF	20	40.02
England	Public forest estate	Grand fir	Abies grandis	GF	22	24.18
England	Public forest estate	Grand fir	Abies grandis	GF	24	18.41
England	Public forest estate	Grand fir	Abies grandis	GF	26	22.14
England	Public forest estate	Grand fir	Abies grandis	GF	28	11.01
England	Public forest estate	Grand fir	Abies grandis	GF	30	21.48
England	Public forest estate	Noble fir	Abies procera	NF	2	1.94
England	Public forest estate	Noble fir	Abies procera	NF	4	0.28
England	Public forest estate	Noble fir	Abies procera	NF	6	0.77
England	Public forest estate	Noble fir	Abies procera	NF	8	4.16

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	Noble fir	Abies procera	NF	10	6.91
England	Public forest estate	Noble fir	Abies procera	NF	12	20.46
England	Public forest estate	Noble fir	Abies procera	NF	14	22.18
England	Public forest estate	Noble fir	Abies procera	NF	16	17.81
England	Public forest estate	Noble fir	Abies procera	NF	18	8.70
England	Public forest estate	Noble fir	Abies procera	NF	20	7.61
England	Public forest estate	Noble fir	Abies procera	NF	22	13.15
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	2	6.51
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	4	0.51
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	6	2.31
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	8	10.52
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	10	26.70
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	12	156.58
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	14	244.65
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	16	265.48
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	18	267.37
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	20	232.70
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	22	113.22
England	Public forest estate	Western hemlock	Tsuga heterophylla	WH	24	89.26
England	Public forest estate	Western red cedar	Thuja plicata	RC	2	4.69
England	Public forest estate	Western red cedar	Thuja plicata	RC	4	11.53
England	Public forest estate	Western red cedar	Thuja plicata	RC	6	8.75
England	Public forest estate	Western red cedar	Thuja plicata	RC	8	20.34

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	Western red cedar	Thuja plicata	RC	10	96.85
England	Public forest estate	Western red cedar	Thuja plicata	RC	12	235.02
England	Public forest estate	Western red cedar	Thuja plicata	RC	14	171.38
England	Public forest estate	Western red cedar	Thuja plicata	RC	16	175.52
England	Public forest estate	Western red cedar	Thuja plicata	RC	18	130.65
England	Public forest estate	Western red cedar	Thuja plicata	RC	20	68.83
England	Public forest estate	Western red cedar	Thuja plicata	RC	22	42.67
England	Public forest estate	Western red cedar	Thuja plicata	RC	24	42.94
England	Public forest estate	Oak	Quercus spp.	OK	2	1 594.20
England	Public forest estate	Oak	Quercus spp.	OK	4	6 720.47
England	Public forest estate	Oak	Quercus spp.	OK	6	4 464.65
England	Public forest estate	Oak	Quercus spp.	OK	8	648.40
England	Public forest estate	Oak	Quercus spp.	OK	10	50.99
England	Public forest estate	Oak	Quercus spp.	OK	12	2.64
England	Public forest estate	Oak	Quercus spp.	OK	14	0.60
England	Public forest estate	Oak	Quercus spp.	OK	16	1.64
England	Public forest estate	Ash	Fraxinus excelsior	AH	2	147.90
England	Public forest estate	Ash	Fraxinus excelsior	AH	4	1 107.68
England	Public forest estate	Ash	Fraxinus excelsior	AH	6	848.40
England	Public forest estate	Ash	Fraxinus excelsior	AH	8	530.96
England	Public forest estate	Ash	Fraxinus excelsior	AH	10	283.06
England	Public forest estate	Ash	Fraxinus excelsior	AH	12	176.95
England	Public forest estate	Ash	Fraxinus excelsior	AH	14	2.53

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	Ash	Fraxinus excelsior	AH	16	0.78
England	Public forest estate	Beech	Fagus sylvatica	BE	2	890.77
England	Public forest estate	Beech	Fagus sylvatica	BE	4	1 893.77
England	Public forest estate	Beech	Fagus sylvatica	BE	6	4 201.67
England	Public forest estate	Beech	Fagus sylvatica	BE	8	3 371.16
England	Public forest estate	Beech	Fagus sylvatica	BE	10	1 021.60
England	Public forest estate	Beech	Fagus sylvatica	BE	12	10.67
England	Public forest estate	Beech	Fagus sylvatica	BE	14	1.25
England	Public forest estate	Birch	Betula spp.	BI	2	1 249.47
England	Public forest estate	Birch	Betula spp.	BI	4	4 189.35
England	Public forest estate	Birch	Betula spp.	BI	6	1 268.72
England	Public forest estate	Birch	Betula spp.	BI	8	468.80
England	Public forest estate	Birch	Betula spp.	BI	10	198.25
England	Public forest estate	Birch	Betula spp.	BI	12	249.49
England	Public forest estate	Birch	Betula spp.	BI	14	15.32
England	Public forest estate	Birch	Betula spp.	BI	16	1.48
England	Public forest estate	Birch	Betula spp.	BI	18	0.45
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	2	2 905.16
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	4	5 561.41
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	6	1 545.12
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	8	535.72
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	10	230.56
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	12	1 272.50

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	14	49.68
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	16	3.45
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	18	1.34
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	20	2.77
England	Public forest estate	Sycamore	Acer pseudoplatanus	SY	22	0.50
England	Public forest estate	Poplar	Populus. spp.	PO	2	37.82
England	Public forest estate	Poplar	Populus. spp.	PO	4	139.70
England	Public forest estate	Poplar	Populus. spp.	PO	6	127.22
England	Public forest estate	Poplar	Populus. spp.	PO	8	67.42
England	Public forest estate	Poplar	Populus. spp.	PO	10	54.84
England	Public forest estate	Poplar	Populus. spp.	PO	12	5.51
England	Public forest estate	Poplar	Populus. spp.	PO	14	44.23
England	Public forest estate	Poplar	Populus. spp.	PO	16	7.39
England	Public forest estate	Poplar	Populus. spp.	PO	24	3.06
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	2	1.32
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	4	0.72
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	6	6.92
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	8	3.48
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	10	18.62
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	12	7.24
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	14	5.09
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	16	0.11
England	Public forest estate	Nothofagus	Nothofagus spp.	NO	18	0.28

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Private sector	Norway spruce	Picea abies	NS	6	1 219.43
England	Private sector	Norway spruce	Picea abies	NS	8	1 668.29
England	Private sector	Norway spruce	Picea abies	NS	10	2 120.27
England	Private sector	Norway spruce	Picea abies	NS	12	2 344.20
England	Private sector	Norway spruce	Picea abies	NS	14	1 936.25
England	Private sector	Norway spruce	Picea abies	NS	16	2 572.57
England	Private sector	Norway spruce	Picea abies	NS	18	1 589.90
England	Private sector	Norway spruce	Picea abies	NS	20	1 389.41
England	Private sector	Norway spruce	Picea abies	NS	22	1 954.33
England	Private sector	Sitka spruce	Picea sitchensis	SS	6	1 632.77
England	Private sector	Sitka spruce	Picea sitchensis	SS	8	1 646.60
England	Private sector	Sitka spruce	Picea sitchensis	SS	10	1 628.28
England	Private sector	Sitka spruce	Picea sitchensis	SS	12	4 089.11
England	Private sector	Sitka spruce	Picea sitchensis	SS	14	5 720.74
England	Private sector	Sitka spruce	Picea sitchensis	SS	16	3 810.55
England	Private sector	Sitka spruce	Picea sitchensis	SS	18	2 624.40
England	Private sector	Sitka spruce	Picea sitchensis	SS	20	3 905.59
England	Private sector	Sitka spruce	Picea sitchensis	SS	22	966.52
England	Private sector	Sitka spruce	Picea sitchensis	SS	24	1 387.09
England	Private sector	Sitka spruce	Picea sitchensis	SS	26	25.31
England	Private sector	Sitka spruce	Picea sitchensis	SS	28	0.45
England	Private sector	Scots pine	Pinus sylvestris	SP	4	53 723.48
England	Private sector	Scots pine	Pinus sylvestris	SP	6	5 052.93

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
England	Private sector	Scots pine	Pinus sylvestris	SP	8	5 955.73
England	Private sector	Scots pine	Pinus sylvestris	SP	10	7 598.39
England	Private sector	Scots pine	Pinus sylvestris	SP	12	6 447.39
England	Private sector	Scots pine	Pinus sylvestris	SP	14	11 211.09
England	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	6	643.09
England	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	8	1 111.16
England	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	10	2 549.02
England	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	12	1 906.35
England	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	14	2 149.54
England	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	16	1 605.08
England	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	18	751.74
England	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	20	595.06
England	Private sector	Lodgepole pine	Pinus contorta	LP	4	458.01
England	Private sector	Lodgepole pine	Pinus contorta	LP	6	4 095.11
England	Private sector	Lodgepole pine	Pinus contorta	LP	8	2 248.89
England	Private sector	Lodgepole pine	Pinus contorta	LP	10	1 272.21
England	Private sector	Lodgepole pine	Pinus contorta	LP	12	1 398.52
England	Private sector	Lodgepole pine	Pinus contorta	LP	14	172.87
England	Private sector	Lodgepole pine	Pinus contorta	LP	16	17.58
England	Private sector	Lodgepole pine	Pinus contorta	LP	18	7.09
England	Private sector	Lodgepole pine	Pinus contorta	LP	20	94.18
England	Private sector	European larch	Larix decidua	EL	2	95.63
England	Private sector	European larch	Larix decidua	EL	4	378.18

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Private sector	European larch	Larix decidua	EL	6	968.92
England	Private sector	European larch	Larix decidua	EL	8	1 080.41
England	Private sector	European larch	Larix decidua	EL	10	675.73
England	Private sector	European larch	Larix decidua	EL	12	829.63
England	Private sector	European larch	Larix decidua	EL	14	17.98
England	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	2	131.81
England	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	4	1 298.48
England	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	6	2 500.55
England	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	8	3 578.99
England	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	10	4 262.56
England	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	12	4 290.30
England	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	14	5 469.80
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	8	2 988.10
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	10	2 625.63
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	12	1 953.35
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	14	1 923.64
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	16	1 379.39
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	18	908.43
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	20	765.43
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	22	309.10
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	24	495.39
England	Private sector	Douglas fir	Pseudotsuga menziesii	DF	26	2.00
England	Private sector	Grand fir	Abies grandis	GF	8	101.90

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Private sector	Grand fir	Abies grandis	GF	10	137.11
England	Private sector	Grand fir	Abies grandis	GF	12	110.57
England	Private sector	Grand fir	Abies grandis	GF	14	89.47
England	Private sector	Grand fir	Abies grandis	GF	16	59.12
England	Private sector	Grand fir	Abies grandis	GF	18	29.66
England	Private sector	Grand fir	Abies grandis	GF	20	28.29
England	Private sector	Grand fir	Abies grandis	GF	22	9.40
England	Private sector	Grand fir	Abies grandis	GF	24	9.34
England	Private sector	Grand fir	Abies grandis	GF	26	11.24
England	Private sector	Grand fir	Abies grandis	GF	28	5.59
England	Private sector	Grand fir	Abies grandis	GF	30	10.90
England	Private sector	Noble fir	Abies procera	NF	8	56.88
England	Private sector	Noble fir	Abies procera	NF	10	32.55
England	Private sector	Noble fir	Abies procera	NF	12	26.68
England	Private sector	Noble fir	Abies procera	NF	14	24.93
England	Private sector	Noble fir	Abies procera	NF	16	11.86
England	Private sector	Noble fir	Abies procera	NF	18	4.51
England	Private sector	Noble fir	Abies procera	NF	20	4.78
England	Private sector	Noble fir	Abies procera	NF	22	5.07
England	Private sector	Western hemlock	Tsuga heterophylla	WH	4	0.34
England	Private sector	Western hemlock	Tsuga heterophylla	WH	6	9.17
England	Private sector	Western hemlock	Tsuga heterophylla	WH	8	17.69
England	Private sector	Western hemlock	Tsuga heterophylla	WH	10	78.14

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Private sector	Western hemlock	Tsuga heterophylla	WH	12	1 292.16
England	Private sector	Western hemlock	Tsuga heterophylla	WH	14	696.98
England	Private sector	Western hemlock	Tsuga heterophylla	WH	16	1 021.25
England	Private sector	Western hemlock	Tsuga heterophylla	WH	18	950.53
England	Private sector	Western hemlock	Tsuga heterophylla	WH	20	302.12
England	Private sector	Western hemlock	Tsuga heterophylla	WH	22	221.02
England	Private sector	Western hemlock	Tsuga heterophylla	WH	24	137.96
England	Private sector	Western red cedar	Thuja plicata	RC	4	6.14
England	Private sector	Western red cedar	Thuja plicata	RC	6	32.52
England	Private sector	Western red cedar	Thuja plicata	RC	8	37.80
England	Private sector	Western red cedar	Thuja plicata	RC	10	295.76
England	Private sector	Western red cedar	Thuja plicata	RC	12	1 827.91
England	Private sector	Western red cedar	Thuja plicata	RC	14	437.35
England	Private sector	Western red cedar	Thuja plicata	RC	16	615.09
England	Private sector	Western red cedar	Thuja plicata	RC	18	418.05
England	Private sector	Western red cedar	Thuja plicata	RC	20	84.98
England	Private sector	Western red cedar	Thuja plicata	RC	22	80.98
England	Private sector	Western red cedar	Thuja plicata	RC	24	64.54
England	Private sector	Oak	Quercus spp.	OK	2	24 926.92
England	Private sector	Oak	Quercus spp.	OK	4	51 437.52
England	Private sector	Oak	Quercus spp.	OK	6	39 803.06
England	Private sector	Oak	Quercus spp.	OK	8	25 203.64
England	Private sector	Ash	Fraxinus excelsior	AH	2	13 258.66

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Private sector	Ash	Fraxinus excelsior	AH	4	19 206.27
England	Private sector	Ash	Fraxinus excelsior	AH	6	18 725.89
England	Private sector	Ash	Fraxinus excelsior	AH	8	16 968.30
England	Private sector	Ash	Fraxinus excelsior	AH	10	12 058.90
England	Private sector	Ash	Fraxinus excelsior	AH	12	23 249.37
England	Private sector	Beech	Fagus sylvatica	BE	4	22 832.56
England	Private sector	Beech	Fagus sylvatica	BE	6	29 695.75
England	Private sector	Beech	Fagus sylvatica	BE	8	21 671.82
England	Private sector	Beech	Fagus sylvatica	BE	10	15 367.07
England	Private sector	Birch	Betula spp.	BI	2	25 826.94
England	Private sector	Birch	Betula spp.	BI	4	26 028.27
England	Private sector	Birch	Betula spp.	BI	6	21 885.44
England	Private sector	Birch	Betula spp.	BI	8	12 392.88
England	Private sector	Birch	Betula spp.	BI	10	6 888.82
England	Private sector	Birch	Betula spp.	BI	12	9 215.21
England	Private sector	Sycamore	Acer pseudoplatanus	SY	2	373 383.95
England	Private sector	Sycamore	Acer pseudoplatanus	SY	4	14 576.79
England	Private sector	Sycamore	Acer pseudoplatanus	SY	6	13 901.14
England	Private sector	Sycamore	Acer pseudoplatanus	SY	8	9 565.10
England	Private sector	Sycamore	Acer pseudoplatanus	SY	10	6 443.98
England	Private sector	Sycamore	Acer pseudoplatanus	SY	12	9 594.88
England	Private sector	Poplar	Populus. spp.	PO	2	118 591.60
England	Private sector	Poplar	Populus. spp.	PO	4	54 213.21

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
England	Private sector	Poplar	Populus. spp.	PO	6	24 261.08
England	Private sector	Poplar	Populus. spp.	PO	8	24 499.13
England	Private sector	Poplar	Populus. spp.	PO	10	3 092.12
England	Private sector	Poplar	Populus. spp.	PO	12	1 049.03
England	Private sector	Poplar	Populus. spp.	PO	14	1 057.24
England	Private sector	Nothofagus	Nothofagus spp.	NO	2	5 883.95
England	Private sector	Nothofagus	Nothofagus spp.	NO	4	401.98
England	Private sector	Nothofagus	Nothofagus spp.	NO	6	1 900.39
England	Private sector	Nothofagus	Nothofagus spp.	NO	8	1 822.52
England	Private sector	Nothofagus	Nothofagus spp.	NO	10	1 499.72
England	Private sector	Nothofagus	Nothofagus spp.	NO	12	1 960.09
England	Private sector	Nothofagus	Nothofagus spp.	NO	14	175.65
England	Private sector	Nothofagus	Nothofagus spp.	NO	18	68.65
Scotland	Public forest estate	Norway spruce	Picea abies	NS	2	244.35
Scotland	Public forest estate	Norway spruce	Picea abies	NS	4	251.23
Scotland	Public forest estate	Norway spruce	Picea abies	NS	6	555.15
Scotland	Public forest estate	Norway spruce	Picea abies	NS	8	1 050.93
Scotland	Public forest estate	Norway spruce	Picea abies	NS	10	1 681.33
Scotland	Public forest estate	Norway spruce	Picea abies	NS	12	2 795.70
Scotland	Public forest estate	Norway spruce	Picea abies	NS	14	2 680.04
Scotland	Public forest estate	Norway spruce	Picea abies	NS	16	1 560.68
Scotland	Public forest estate	Norway spruce	Picea abies	NS	18	697.91
Scotland	Public forest estate	Norway spruce	Picea abies	NS	20	279.12

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	Norway spruce	Picea abies	NS	22	107.43
Scotland	Public forest estate	Norway spruce	Picea abies	NS	24	6.74
Scotland	Public forest estate	Norway spruce	Picea abies	NS	26	0.62
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	2	2 169.99
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	4	2 797.68
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	6	4 604.14
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	8	8 908.19
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	10	15 335.47
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	12	33 638.20
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	14	41 891.11
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	16	46 786.60
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	18	21 701.57
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	20	11 153.74
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	22	5 562.06
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	24	6 179.28
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	26	357.22
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	28	0.07
Scotland	Public forest estate	Sitka spruce	Picea sitchensis	SS	30	0.32
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	2	2 013.94
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	4	2 546.58
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	6	6 971.96
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	8	14 827.42
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	10	10 193.65

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	12	3 294.01
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	14	678.96
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	16	44.14
Scotland	Public forest estate	Scots pine	Pinus sylvestris	SP	18	1.35
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	2	1.88
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	4	42.74
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	6	306.46
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	8	368.48
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	10	328.75
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	12	220.57
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	14	32.95
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	16	1.29
Scotland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	18	2.49
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	2	715.84
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	4	4 640.04
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	6	12 076.31
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	8	12 636.77
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	10	4 925.37
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	12	914.53
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	14	246.72
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	16	36.11
Scotland	Public forest estate	Lodgepole pine	Pinus contorta	LP	20	0.41
Scotland	Public forest estate	European larch	Larix decidua	EL	2	75.07

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	European larch	Larix decidua	EL	4	268.07
Scotland	Public forest estate	European larch	Larix decidua	EL	6	648.68
Scotland	Public forest estate	European larch	Larix decidua	EL	8	848.64
Scotland	Public forest estate	European larch	Larix decidua	EL	10	692.82
Scotland	Public forest estate	European larch	Larix decidua	EL	12	697.94
Scotland	Public forest estate	European larch	Larix decidua	EL	14	63.67
Scotland	Public forest estate	European larch	Larix decidua	EL	16	0.17
Scotland	Public forest estate	European larch	Larix decidua	EL	18	0.11
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	2	206.45
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	4	1 388.99
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	6	2 629.57
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	8	4 739.09
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	10	5 309.96
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	12	3 931.84
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	14	1 625.04
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	16	157.47
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	18	0.30
Scotland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	20	0.48
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	2	16.37
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	4	10.34
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	6	24.13
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	8	139.55
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	10	452.20

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	12	756.76
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	14	990.63
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	16	1 075.01
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	18	600.17
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	20	367.47
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	22	156.96
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	24	148.24
Scotland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	26	1.25
Scotland	Public forest estate	Grand fir	Abies grandis	GF	2	6.83
Scotland	Public forest estate	Grand fir	Abies grandis	GF	4	3.53
Scotland	Public forest estate	Grand fir	Abies grandis	GF	6	0.19
Scotland	Public forest estate	Grand fir	Abies grandis	GF	8	3.05
Scotland	Public forest estate	Grand fir	Abies grandis	GF	10	12.41
Scotland	Public forest estate	Grand fir	Abies grandis	GF	12	42.24
Scotland	Public forest estate	Grand fir	Abies grandis	GF	14	38.04
Scotland	Public forest estate	Grand fir	Abies grandis	GF	16	46.87
Scotland	Public forest estate	Grand fir	Abies grandis	GF	18	27.55
Scotland	Public forest estate	Grand fir	Abies grandis	GF	20	45.37
Scotland	Public forest estate	Grand fir	Abies grandis	GF	22	31.72
Scotland	Public forest estate	Grand fir	Abies grandis	GF	24	12.96
Scotland	Public forest estate	Grand fir	Abies grandis	GF	26	7.56
Scotland	Public forest estate	Grand fir	Abies grandis	GF	28	10.19
Scotland	Public forest estate	Grand fir	Abies grandis	GF	30	5.69

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	Noble fir	Abies procera	NF	2	22.56
Scotland	Public forest estate	Noble fir	Abies procera	NF	4	14.83
Scotland	Public forest estate	Noble fir	Abies procera	NF	6	7.74
Scotland	Public forest estate	Noble fir	Abies procera	NF	8	31.74
Scotland	Public forest estate	Noble fir	Abies procera	NF	10	74.29
Scotland	Public forest estate	Noble fir	Abies procera	NF	12	121.96
Scotland	Public forest estate	Noble fir	Abies procera	NF	14	125.96
Scotland	Public forest estate	Noble fir	Abies procera	NF	16	86.73
Scotland	Public forest estate	Noble fir	Abies procera	NF	18	31.10
Scotland	Public forest estate	Noble fir	Abies procera	NF	20	22.54
Scotland	Public forest estate	Noble fir	Abies procera	NF	22	42.92
Scotland	Public forest estate	Noble fir	Abies procera	NF	24	5.29
Scotland	Public forest estate	Noble fir	Abies procera	NF	26	0.16
Scotland	Public forest estate	Noble fir	Abies procera	NF	28	0.41
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	2	6.23
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	4	2.55
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	6	8.13
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	8	24.54
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	10	27.98
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	12	95.23
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	14	98.05
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	16	70.76
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	18	67.54

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	20	42.29
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	22	23.27
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	24	17.13
Scotland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	26	3.64
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	2	3.33
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	4	5.27
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	6	3.72
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	8	13.41
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	10	11.03
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	12	26.60
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	14	19.51
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	16	20.60
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	18	9.53
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	20	6.91
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	22	0.16
Scotland	Public forest estate	Western red cedar	Thuja plicata	RC	24	0.87
Scotland	Public forest estate	Oak	Quercus spp.	OK	2	1 096.32
Scotland	Public forest estate	Oak	Quercus spp.	OK	4	1 168.94
Scotland	Public forest estate	Oak	Quercus spp.	OK	6	199.02
Scotland	Public forest estate	Oak	Quercus spp.	OK	8	22.10
Scotland	Public forest estate	Oak	Quercus spp.	OK	10	6.10
Scotland	Public forest estate	Oak	Quercus spp.	OK	12	1.31
Scotland	Public forest estate	Oak	Quercus spp.	OK	14	4.19

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	Oak	Quercus spp.	OK	16	2.45
Scotland	Public forest estate	Ash	Fraxinus excelsior	AH	2	126.39
Scotland	Public forest estate	Ash	Fraxinus excelsior	AH	4	120.58
Scotland	Public forest estate	Ash	Fraxinus excelsior	AH	6	98.53
Scotland	Public forest estate	Ash	Fraxinus excelsior	AH	8	87.39
Scotland	Public forest estate	Ash	Fraxinus excelsior	AH	10	4.55
Scotland	Public forest estate	Ash	Fraxinus excelsior	AH	12	2.58
Scotland	Public forest estate	Ash	Fraxinus excelsior	AH	16	0.46
Scotland	Public forest estate	Ash	Fraxinus excelsior	AH	20	0.83
Scotland	Public forest estate	Beech	Fagus sylvatica	BE	2	154.34
Scotland	Public forest estate	Beech	Fagus sylvatica	BE	4	194.61
Scotland	Public forest estate	Beech	Fagus sylvatica	BE	6	216.75
Scotland	Public forest estate	Beech	Fagus sylvatica	BE	8	38.31
Scotland	Public forest estate	Beech	Fagus sylvatica	BE	10	5.50
Scotland	Public forest estate	Beech	Fagus sylvatica	BE	12	1.45
Scotland	Public forest estate	Beech	Fagus sylvatica	BE	14	1.38
Scotland	Public forest estate	Beech	Fagus sylvatica	BE	18	0.13
Scotland	Public forest estate	Birch	Betula spp.	BI	2	6 092.91
Scotland	Public forest estate	Birch	Betula spp.	BI	4	3 696.68
Scotland	Public forest estate	Birch	Betula spp.	BI	6	1 370.76
Scotland	Public forest estate	Birch	Betula spp.	BI	8	222.23
Scotland	Public forest estate	Birch	Betula spp.	BI	10	79.89
Scotland	Public forest estate	Birch	Betula spp.	BI	12	42.33

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	Birch	Betula spp.	BI	14	17.17
Scotland	Public forest estate	Birch	Betula spp.	BI	16	2.58
Scotland	Public forest estate	Birch	Betula spp.	BI	18	0.81
Scotland	Public forest estate	Birch	Betula spp.	BI	22	0.09
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	2	7 523.46
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	4	3 256.77
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	6	1 548.72
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	8	176.70
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	10	50.77
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	12	94.36
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	14	41.15
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	16	11.53
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	18	14.60
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	20	1.04
Scotland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	24	0.10
Scotland	Public forest estate	Poplar	Populus. spp.	PO	2	24.14
Scotland	Public forest estate	Poplar	Populus. spp.	PO	4	23.54
Scotland	Public forest estate	Poplar	Populus. spp.	PO	6	10.32
Scotland	Public forest estate	Poplar	Populus. spp.	PO	8	6.27
Scotland	Public forest estate	Poplar	Populus. spp.	PO	10	1.00
Scotland	Public forest estate	Poplar	Populus. spp.	PO	12	0.15
Scotland	Public forest estate	Poplar	Populus. spp.	PO	14	0.13
Scotland	Public forest estate	Nothofagus	Nothofagus spp.	NO	2	1.02

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Public forest estate	Nothofagus	Nothofagus spp.	NO	4	2.69
Scotland	Public forest estate	Nothofagus	Nothofagus spp.	NO	6	1.10
Scotland	Public forest estate	Nothofagus	Nothofagus spp.	NO	8	0.88
Scotland	Public forest estate	Nothofagus	Nothofagus spp.	NO	10	3.73
Scotland	Public forest estate	Nothofagus	Nothofagus spp.	NO	12	0.82
Scotland	Public forest estate	Nothofagus	Nothofagus spp.	NO	14	1.23
Scotland	Public forest estate	Nothofagus	Nothofagus spp.	NO	18	0.06
Scotland	Private sector	Norway spruce	Picea abies	NS	6	697.42
Scotland	Private sector	Norway spruce	Picea abies	NS	8	841.98
Scotland	Private sector	Norway spruce	Picea abies	NS	10	1 465.80
Scotland	Private sector	Norway spruce	Picea abies	NS	12	1 983.90
Scotland	Private sector	Norway spruce	Picea abies	NS	14	2 145.31
Scotland	Private sector	Norway spruce	Picea abies	NS	16	2 637.39
Scotland	Private sector	Norway spruce	Picea abies	NS	18	1 633.42
Scotland	Private sector	Norway spruce	Picea abies	NS	20	1 114.91
Scotland	Private sector	Norway spruce	Picea abies	NS	22	1 658.20
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	6	18 055.56
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	8	18 425.92
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	10	25 210.01
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	12	33 018.28
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	14	42 390.75
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	16	38 227.05
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	18	36 751.30

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	20	32 428.01
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	22	20 841.30
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	24	30 048.22
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	26	1 732.42
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	28	0.33
Scotland	Private sector	Sitka spruce	Picea sitchensis	SS	30	1.57
Scotland	Private sector	Scots pine	Pinus sylvestris	SP	4	24 010.47
Scotland	Private sector	Scots pine	Pinus sylvestris	SP	6	11 334.27
Scotland	Private sector	Scots pine	Pinus sylvestris	SP	8	18 896.55
Scotland	Private sector	Scots pine	Pinus sylvestris	SP	10	21 910.04
Scotland	Private sector	Scots pine	Pinus sylvestris	SP	12	19 605.13
Scotland	Private sector	Scots pine	Pinus sylvestris	SP	14	21 552.95
Scotland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	4	25.35
Scotland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	6	205.07
Scotland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	8	341.38
Scotland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	10	577.42
Scotland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	12	857.15
Scotland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	14	315.41
Scotland	Private sector	Lodgepole pine	Pinus contorta	LP	4	2 950.23
Scotland	Private sector	Lodgepole pine	Pinus contorta	LP	6	8 388.64
Scotland	Private sector	Lodgepole pine	Pinus contorta	LP	8	12 251.09
Scotland	Private sector	Lodgepole pine	Pinus contorta	LP	10	9 046.53
Scotland	Private sector	Lodgepole pine	Pinus contorta	LP	12	3 479.88

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Private sector	Lodgepole pine	Pinus contorta	LP	14	2 078.44
Scotland	Private sector	Lodgepole pine	Pinus contorta	LP	20	78.03
Scotland	Private sector	European larch	Larix decidua	EL	2	146.63
Scotland	Private sector	European larch	Larix decidua	EL	4	621.88
Scotland	Private sector	European larch	Larix decidua	EL	6	1 318.22
Scotland	Private sector	European larch	Larix decidua	EL	8	913.63
Scotland	Private sector	European larch	Larix decidua	EL	10	933.99
Scotland	Private sector	European larch	Larix decidua	EL	12	928.09
Scotland	Private sector	European larch	Larix decidua	EL	14	214.14
Scotland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	2	375.73
Scotland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	4	3 176.06
Scotland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	6	5 547.01
Scotland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	8	5 248.15
Scotland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	10	7 409.08
Scotland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	12	6 439.04
Scotland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	14	6 508.71
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	6	312.34
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	8	1 552.65
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	10	1 800.11
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	12	3 003.18
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	14	1 648.88
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	16	714.08
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	18	751.58

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	20	266.37
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	22	718.14
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	24	503.67
Scotland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	26	4.24
Scotland	Private sector	Grand fir	Abies grandis	GF	6	2.45
Scotland	Private sector	Grand fir	Abies grandis	GF	8	30.81
Scotland	Private sector	Grand fir	Abies grandis	GF	10	39.05
Scotland	Private sector	Grand fir	Abies grandis	GF	12	150.43
Scotland	Private sector	Grand fir	Abies grandis	GF	14	67.61
Scotland	Private sector	Grand fir	Abies grandis	GF	16	32.66
Scotland	Private sector	Grand fir	Abies grandis	GF	18	38.03
Scotland	Private sector	Grand fir	Abies grandis	GF	20	33.84
Scotland	Private sector	Grand fir	Abies grandis	GF	22	154.39
Scotland	Private sector	Grand fir	Abies grandis	GF	24	44.52
Scotland	Private sector	Grand fir	Abies grandis	GF	26	25.97
Scotland	Private sector	Grand fir	Abies grandis	GF	28	35.00
Scotland	Private sector	Grand fir	Abies grandis	GF	30	19.55
Scotland	Private sector	Noble fir	Abies procera	NF	6	91.97
Scotland	Private sector	Noble fir	Abies procera	NF	8	327.64
Scotland	Private sector	Noble fir	Abies procera	NF	10	247.15
Scotland	Private sector	Noble fir	Abies procera	NF	12	366.16
Scotland	Private sector	Noble fir	Abies procera	NF	14	178.16
Scotland	Private sector	Noble fir	Abies procera	NF	16	50.42

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Private sector	Noble fir	Abies procera	NF	18	37.23
Scotland	Private sector	Noble fir	Abies procera	NF	20	15.25
Scotland	Private sector	Noble fir	Abies procera	NF	22	189.57
Scotland	Private sector	Noble fir	Abies procera	NF	24	16.51
Scotland	Private sector	Noble fir	Abies procera	NF	26	0.49
Scotland	Private sector	Noble fir	Abies procera	NF	28	1.27
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	6	97.81
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	8	264.75
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	10	108.28
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	12	378.79
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	14	145.11
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	16	50.10
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	18	91.60
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	20	29.76
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	22	106.83
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	24	55.51
Scotland	Private sector	Western hemlock	Tsuga heterophylla	WH	26	11.79
Scotland	Private sector	Western red cedar	Thuja plicata	RC	6	43.72
Scotland	Private sector	Western red cedar	Thuja plicata	RC	8	126.33
Scotland	Private sector	Western red cedar	Thuja plicata	RC	10	32.49
Scotland	Private sector	Western red cedar	Thuja plicata	RC	12	81.20
Scotland	Private sector	Western red cedar	Thuja plicata	RC	14	25.31
Scotland	Private sector	Western red cedar	Thuja plicata	RC	16	11.64

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Private sector	Western red cedar	Thuja plicata	RC	18	12.29
Scotland	Private sector	Western red cedar	Thuja plicata	RC	20	4.62
Scotland	Private sector	Western red cedar	Thuja plicata	RC	22	0.70
Scotland	Private sector	Western red cedar	Thuja plicata	RC	24	2.69
Scotland	Private sector	Oak	Quercus spp.	OK	2	6 024.02
Scotland	Private sector	Oak	Quercus spp.	OK	4	10 337.41
Scotland	Private sector	Oak	Quercus spp.	OK	6	5 153.97
Scotland	Private sector	Oak	Quercus spp.	OK	8	2 072.06
Scotland	Private sector	Ash	Fraxinus excelsior	AH	2	3 857.25
Scotland	Private sector	Ash	Fraxinus excelsior	AH	4	3 488.72
Scotland	Private sector	Ash	Fraxinus excelsior	AH	6	2 910.22
Scotland	Private sector	Ash	Fraxinus excelsior	AH	8	1 720.56
Scotland	Private sector	Ash	Fraxinus excelsior	AH	10	1 231.82
Scotland	Private sector	Ash	Fraxinus excelsior	AH	12	1 577.88
Scotland	Private sector	Beech	Fagus sylvatica	BE	4	3 654.45
Scotland	Private sector	Beech	Fagus sylvatica	BE	6	5 076.30
Scotland	Private sector	Beech	Fagus sylvatica	BE	8	2 860.50
Scotland	Private sector	Beech	Fagus sylvatica	BE	10	2 606.88
Scotland	Private sector	Birch	Betula spp.	BI	2	74 753.55
Scotland	Private sector	Birch	Betula spp.	BI	4	28 509.93
Scotland	Private sector	Birch	Betula spp.	BI	6	13 976.54
Scotland	Private sector	Birch	Betula spp.	BI	8	5 749.45
Scotland	Private sector	Birch	Betula spp.	BI	10	3 730.03

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Scotland	Private sector	Birch	Betula spp.	BI	12	1 743.03
Scotland	Private sector	Sycamore	Acer pseudoplatanus	SY	2	60 986.35
Scotland	Private sector	Sycamore	Acer pseudoplatanus	SY	4	2 794.99
Scotland	Private sector	Sycamore	Acer pseudoplatanus	SY	6	4 233.83
Scotland	Private sector	Sycamore	Acer pseudoplatanus	SY	8	3 045.11
Scotland	Private sector	Sycamore	Acer pseudoplatanus	SY	10	2 484.86
Scotland	Private sector	Sycamore	Acer pseudoplatanus	SY	12	2 803.74
Scotland	Private sector	Poplar	Populus. spp.	PO	2	26 911.57
Scotland	Private sector	Poplar	Populus. spp.	PO	4	13 529.06
Scotland	Private sector	Poplar	Populus. spp.	PO	6	6 133.22
Scotland	Private sector	Poplar	Populus. spp.	PO	8	3 227.35
Scotland	Private sector	Poplar	Populus. spp.	PO	10	412.08
Scotland	Private sector	Poplar	Populus. spp.	PO	12	130.24
Scotland	Private sector	Nothofagus	Nothofagus spp.	NO	2	900.76
Scotland	Private sector	Nothofagus	Nothofagus spp.	NO	4	1 259.79
Scotland	Private sector	Nothofagus	Nothofagus spp.	NO	6	594.70
Scotland	Private sector	Nothofagus	Nothofagus spp.	NO	8	388.31
Scotland	Private sector	Nothofagus	Nothofagus spp.	NO	10	1 750.47
Scotland	Private sector	Nothofagus	Nothofagus spp.	NO	12	792.69
Wales	Public forest estate	Norway spruce	Picea abies	NS	2	128.38
Wales	Public forest estate	Norway spruce	Picea abies	NS	4	65.33
Wales	Public forest estate	Norway spruce	Picea abies	NS	6	135.17
Wales	Public forest estate	Norway spruce	Picea abies	NS	8	322.73

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Public forest estate	Norway spruce	Picea abies	NS	10	984.23
Wales	Public forest estate	Norway spruce	Picea abies	NS	12	1 689.42
Wales	Public forest estate	Norway spruce	Picea abies	NS	14	1 228.81
Wales	Public forest estate	Norway spruce	Picea abies	NS	16	955.89
Wales	Public forest estate	Norway spruce	Picea abies	NS	18	558.75
Wales	Public forest estate	Norway spruce	Picea abies	NS	20	288.26
Wales	Public forest estate	Norway spruce	Picea abies	NS	22	221.01
Wales	Public forest estate	Norway spruce	Picea abies	NS	24	6.54
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	2	506.05
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	4	438.54
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	6	675.52
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	8	1 419.65
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	10	3 374.91
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	12	11 885.75
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	14	11 006.13
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	16	8 028.70
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	18	4 758.45
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	20	2 599.81
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	22	1 705.32
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	24	2 008.31
Wales	Public forest estate	Sitka spruce	Picea sitchensis	SS	26	3.30
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	2	10.67
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	4	68.69

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	6	202.70
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	8	546.35
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	10	898.81
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	12	356.66
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	14	139.49
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	16	47.92
Wales	Public forest estate	Scots pine	Pinus sylvestris	SP	20	0.66
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	2	18.07
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	4	9.33
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	6	79.13
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	8	158.80
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	10	393.16
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	12	505.34
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	14	263.29
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	16	214.40
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	18	31.06
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	20	21.33
Wales	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	22	0.27
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	2	103.83
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	4	284.21
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	6	654.29
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	8	793.96
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	10	371.35

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	12	145.44
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	14	54.93
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	16	8.92
Wales	Public forest estate	Lodgepole pine	Pinus contorta	LP	20	3.53
Wales	Public forest estate	European larch	Larix decidua	EL	2	1.89
Wales	Public forest estate	European larch	Larix decidua	EL	4	13.07
Wales	Public forest estate	European larch	Larix decidua	EL	6	30.26
Wales	Public forest estate	European larch	Larix decidua	EL	8	64.95
Wales	Public forest estate	European larch	Larix decidua	EL	10	33.76
Wales	Public forest estate	European larch	Larix decidua	EL	12	30.38
Wales	Public forest estate	European larch	Larix decidua	EL	14	2.61
Wales	Public forest estate	European larch	Larix decidua	EL	16	1.95
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	2	23.14
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	4	76.03
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	6	218.18
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	8	922.32
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	10	2 778.19
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	12	2 924.49
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	14	2 568.29
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	16	168.05
Wales	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	24	0.21
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	2	3.18
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	4	1.61

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	6	6.11
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	8	32.38
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	10	208.12
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	12	944.06
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	14	1 002.78
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	16	1 523.93
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	18	808.20
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	20	368.25
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	22	242.60
Wales	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	24	259.37
Wales	Public forest estate	Grand fir	Abies grandis	GF	2	4.72
Wales	Public forest estate	Grand fir	Abies grandis	GF	4	3.93
Wales	Public forest estate	Grand fir	Abies grandis	GF	10	7.16
Wales	Public forest estate	Grand fir	Abies grandis	GF	12	17.02
Wales	Public forest estate	Grand fir	Abies grandis	GF	14	28.13
Wales	Public forest estate	Grand fir	Abies grandis	GF	16	78.63
Wales	Public forest estate	Grand fir	Abies grandis	GF	18	33.80
Wales	Public forest estate	Grand fir	Abies grandis	GF	20	88.10
Wales	Public forest estate	Grand fir	Abies grandis	GF	22	29.99
Wales	Public forest estate	Grand fir	Abies grandis	GF	24	45.34
Wales	Public forest estate	Grand fir	Abies grandis	GF	26	29.40
Wales	Public forest estate	Grand fir	Abies grandis	GF	28	30.86
Wales	Public forest estate	Grand fir	Abies grandis	GF	30	18.04

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Public forest estate	Noble fir	Abies procera	NF	2	1.55
Wales	Public forest estate	Noble fir	Abies procera	NF	4	5.75
Wales	Public forest estate	Noble fir	Abies procera	NF	6	19.72
Wales	Public forest estate	Noble fir	Abies procera	NF	8	6.15
Wales	Public forest estate	Noble fir	Abies procera	NF	10	45.35
Wales	Public forest estate	Noble fir	Abies procera	NF	12	82.18
Wales	Public forest estate	Noble fir	Abies procera	NF	14	79.36
Wales	Public forest estate	Noble fir	Abies procera	NF	16	75.16
Wales	Public forest estate	Noble fir	Abies procera	NF	18	34.19
Wales	Public forest estate	Noble fir	Abies procera	NF	20	23.30
Wales	Public forest estate	Noble fir	Abies procera	NF	22	32.37
Wales	Public forest estate	Noble fir	Abies procera	NF	24	0.71
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	2	5.25
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	4	1.91
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	6	6.43
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	8	3.98
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	10	12.42
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	12	50.20
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	14	98.08
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	16	140.90
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	18	166.46
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	20	109.57
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	22	73.68

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	24	82.22
Wales	Public forest estate	Western hemlock	Tsuga heterophylla	WH	26	0.21
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	2	12.18
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	4	2.46
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	6	11.06
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	8	9.56
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	10	53.71
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	12	72.51
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	14	59.45
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	16	77.95
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	18	43.05
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	20	32.96
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	22	17.95
Wales	Public forest estate	Western red cedar	Thuja plicata	RC	24	7.99
Wales	Public forest estate	Oak	Quercus spp.	OK	2	273.51
Wales	Public forest estate	Oak	Quercus spp.	OK	4	662.28
Wales	Public forest estate	Oak	Quercus spp.	OK	6	642.99
Wales	Public forest estate	Oak	Quercus spp.	OK	8	296.24
Wales	Public forest estate	Oak	Quercus spp.	OK	10	30.34
Wales	Public forest estate	Oak	Quercus spp.	OK	12	5.45
Wales	Public forest estate	Oak	Quercus spp.	OK	14	4.32
Wales	Public forest estate	Oak	Quercus spp.	OK	16	0.27
Wales	Public forest estate	Oak	Quercus spp.	OK	20	0.61

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	2	30.74
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	4	128.17
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	6	76.60
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	8	62.48
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	10	19.63
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	12	4.11
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	14	0.11
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	18	2.83
Wales	Public forest estate	Ash	Fraxinus excelsior	AH	20	1.99
Wales	Public forest estate	Beech	Fagus sylvatica	BE	2	95.79
Wales	Public forest estate	Beech	Fagus sylvatica	BE	4	250.68
Wales	Public forest estate	Beech	Fagus sylvatica	BE	6	498.47
Wales	Public forest estate	Beech	Fagus sylvatica	BE	8	526.73
Wales	Public forest estate	Beech	Fagus sylvatica	BE	10	64.18
Wales	Public forest estate	Beech	Fagus sylvatica	BE	12	0.45
Wales	Public forest estate	Beech	Fagus sylvatica	BE	16	0.87
Wales	Public forest estate	Birch	Betula spp.	BI	2	339.22
Wales	Public forest estate	Birch	Betula spp.	BI	4	392.22
Wales	Public forest estate	Birch	Betula spp.	BI	6	139.42
Wales	Public forest estate	Birch	Betula spp.	BI	8	122.70
Wales	Public forest estate	Birch	Betula spp.	BI	10	7.04
Wales	Public forest estate	Birch	Betula spp.	BI	12	12.78
Wales	Public forest estate	Birch	Betula spp.	BI	14	0.51

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Public forest estate	Birch	Betula spp.	BI	16	3.62
Wales	Public forest estate	Birch	Betula spp.	BI	18	2.39
Wales	Public forest estate	Birch	Betula spp.	BI	20	0.77
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	2	1 648.79
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	4	2 191.01
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	6	534.55
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	8	570.73
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	10	165.82
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	12	79.54
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	14	18.48
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	16	1.77
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	18	6.88
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	20	0.09
Wales	Public forest estate	Sycamore	Acer pseudoplatanus	SY	24	0.51
Wales	Public forest estate	Poplar	Populus. spp.	PO	2	0.51
Wales	Public forest estate	Poplar	Populus. spp.	PO	4	14.70
Wales	Public forest estate	Poplar	Populus. spp.	PO	6	8.22
Wales	Public forest estate	Poplar	Populus. spp.	PO	8	4.37
Wales	Public forest estate	Poplar	Populus. spp.	PO	10	5.64
Wales	Public forest estate	Poplar	Populus. spp.	PO	12	0.96
Wales	Public forest estate	Poplar	Populus. spp.	PO	14	0.24
Wales	Public forest estate	Nothofagus	Nothofagus spp.	NO	4	1.99
Wales	Public forest estate	Nothofagus	Nothofagus spp.	NO	6	7.26

Country	Ownership	CARBINE tree species Common name	Latin name	Sp. code	Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
Wales	Public forest estate	Nothofagus	Nothofagus spp.	NO	8	7.08
Wales	Public forest estate	Nothofagus	Nothofagus spp.	NO	10	9.43
Wales	Public forest estate	Nothofagus	Nothofagus spp.	NO	12	5.11
Wales	Public forest estate	Nothofagus	Nothofagus spp.	NO	14	3.97
Wales	Public forest estate	Nothofagus	Nothofagus spp.	NO	16	1.18
Wales	Public forest estate	Nothofagus	Nothofagus spp.	NO	18	2.96
Wales	Private sector	Norway spruce	Picea abies	NS	4	80.05
Wales	Private sector	Norway spruce	Picea abies	NS	6	108.24
Wales	Private sector	Norway spruce	Picea abies	NS	8	291.97
Wales	Private sector	Norway spruce	Picea abies	NS	10	231.44
Wales	Private sector	Norway spruce	Picea abies	NS	12	403.51
Wales	Private sector	Norway spruce	Picea abies	NS	14	564.04
Wales	Private sector	Norway spruce	Picea abies	NS	16	160.35
Wales	Private sector	Norway spruce	Picea abies	NS	18	119.81
Wales	Private sector	Norway spruce	Picea abies	NS	20	115.68
Wales	Private sector	Norway spruce	Picea abies	NS	22	690.81
Wales	Private sector	Norway spruce	Picea abies	NS	24	19.37
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	6	2 556.41
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	8	2 032.33
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	10	3 023.10
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	12	3 622.01
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	14	3 635.49
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	16	2 724.67

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	18	1 979.37
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	20	3 437.24
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	22	1 636.58
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	24	2 994.84
Wales	Private sector	Sitka spruce	Picea sitchensis	SS	26	4.95
Wales	Private sector	Scots pine	Pinus sylvestris	SP	4	6 551.40
Wales	Private sector	Scots pine	Pinus sylvestris	SP	6	156.68
Wales	Private sector	Scots pine	Pinus sylvestris	SP	8	498.26
Wales	Private sector	Scots pine	Pinus sylvestris	SP	10	196.23
Wales	Private sector	Scots pine	Pinus sylvestris	SP	12	98.42
Wales	Private sector	Scots pine	Pinus sylvestris	SP	14	64.13
Wales	Private sector	Scots pine	Pinus sylvestris	SP	16	6.18
Wales	Private sector	Scots pine	Pinus sylvestris	SP	20	0.27
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	4	13.29
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	6	66.79
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	8	161.90
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	10	110.19
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	12	173.29
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	14	152.93
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	16	44.29
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	18	7.14
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	20	9.10
Wales	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	22	0.88

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Private sector	Lodgepole pine	Pinus contorta	LP	4	377.08
Wales	Private sector	Lodgepole pine	Pinus contorta	LP	6	500.86
Wales	Private sector	Lodgepole pine	Pinus contorta	LP	8	732.24
Wales	Private sector	Lodgepole pine	Pinus contorta	LP	10	94.76
Wales	Private sector	Lodgepole pine	Pinus contorta	LP	12	43.24
Wales	Private sector	Lodgepole pine	Pinus contorta	LP	14	28.89
Wales	Private sector	Lodgepole pine	Pinus contorta	LP	16	1.68
Wales	Private sector	Lodgepole pine	Pinus contorta	LP	20	1.37
Wales	Private sector	European larch	Larix decidua	EL	4	64.81
Wales	Private sector	European larch	Larix decidua	EL	6	142.42
Wales	Private sector	European larch	Larix decidua	EL	8	50.95
Wales	Private sector	European larch	Larix decidua	EL	10	12.80
Wales	Private sector	European larch	Larix decidua	EL	12	12.37
Wales	Private sector	European larch	Larix decidua	EL	14	2.97
Wales	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	4	377.55
Wales	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	6	1 063.56
Wales	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	8	779.37
Wales	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	10	1 017.44
Wales	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	12	1 157.75
Wales	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	14	2 865.71
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	4	2.23
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	6	3.41
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	8	23.60

Country	Ownership	CARBINE tree species Common name	 Latin name	 Sp. code	Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	10	44.04
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	12	230.91
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	14	479.14
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	16	246.29
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	18	167.11
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	20	147.93
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	22	750.88
Wales	Private sector	Douglas fir	Pseudotsuga menziesii	DF	24	764.13
Wales	Private sector	Grand fir	Abies grandis	GF	4	5.08
Wales	Private sector	Grand fir	Abies grandis	GF	10	1.81
Wales	Private sector	Grand fir	Abies grandis	GF	12	4.39
Wales	Private sector	Grand fir	Abies grandis	GF	14	13.82
Wales	Private sector	Grand fir	Abies grandis	GF	16	12.81
Wales	Private sector	Grand fir	Abies grandis	GF	18	5.88
Wales	Private sector	Grand fir	Abies grandis	GF	20	32.78
Wales	Private sector	Grand fir	Abies grandis	GF	22	86.92
Wales	Private sector	Grand fir	Abies grandis	GF	24	124.58
Wales	Private sector	Grand fir	Abies grandis	GF	26	80.76
Wales	Private sector	Grand fir	Abies grandis	GF	28	84.78
Wales	Private sector	Grand fir	Abies grandis	GF	30	49.58
Wales	Private sector	Noble fir	Abies procera	NF	4	7.62
Wales	Private sector	Noble fir	Abies procera	NF	6	15.70
Wales	Private sector	Noble fir	Abies procera	NF	8	5.77

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Private sector	Noble fir	Abies procera	NF	10	8.92
Wales	Private sector	Noble fir	Abies procera	NF	12	18.71
Wales	Private sector	Noble fir	Abies procera	NF	14	38.87
Wales	Private sector	Noble fir	Abies procera	NF	16	12.00
Wales	Private sector	Noble fir	Abies procera	NF	18	7.39
Wales	Private sector	Noble fir	Abies procera	NF	20	9.35
Wales	Private sector	Noble fir	Abies procera	NF	22	99.92
Wales	Private sector	Noble fir	Abies procera	NF	24	2.08
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	4	2.52
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	6	4.40
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	8	3.39
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	10	3.20
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	12	15.13
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	14	47.56
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	16	25.96
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	18	34.48
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	20	42.16
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	22	218.02
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	24	230.67
Wales	Private sector	Western hemlock	Tsuga heterophylla	WH	26	0.58
Wales	Private sector	Western red cedar	Thuja plicata	RC	4	3.35
Wales	Private sector	Western red cedar	Thuja plicata	RC	6	4.27
Wales	Private sector	Western red cedar	Thuja plicata	RC	8	6.97

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Private sector	Western red cedar	Thuja plicata	RC	10	7.69
Wales	Private sector	Western red cedar	Thuja plicata	RC	12	19.05
Wales	Private sector	Western red cedar	Thuja plicata	RC	14	30.71
Wales	Private sector	Western red cedar	Thuja plicata	RC	16	12.67
Wales	Private sector	Western red cedar	Thuja plicata	RC	18	8.24
Wales	Private sector	Western red cedar	Thuja plicata	RC	20	13.09
Wales	Private sector	Western red cedar	Thuja plicata	RC	22	54.84
Wales	Private sector	Western red cedar	Thuja plicata	RC	24	23.13
Wales	Private sector	Oak	Quercus spp.	OK	2	7 725.44
Wales	Private sector	Oak	Quercus spp.	OK	4	6 809.16
Wales	Private sector	Oak	Quercus spp.	OK	6	3 915.44
Wales	Private sector	Oak	Quercus spp.	OK	8	3 948.43
Wales	Private sector	Ash	Fraxinus excelsior	AH	2	3 134.60
Wales	Private sector	Ash	Fraxinus excelsior	AH	4	3 066.39
Wales	Private sector	Ash	Fraxinus excelsior	AH	6	4 030.90
Wales	Private sector	Ash	Fraxinus excelsior	AH	8	1 889.58
Wales	Private sector	Ash	Fraxinus excelsior	AH	10	1 405.13
Wales	Private sector	Ash	Fraxinus excelsior	AH	12	3 660.57
Wales	Private sector	Beech	Fagus sylvatica	BE	2	23 664.03
Wales	Private sector	Beech	Fagus sylvatica	BE	4	8 409.49
Wales	Private sector	Beech	Fagus sylvatica	BE	6	6 153.25
Wales	Private sector	Beech	Fagus sylvatica	BE	8	4 924.76
Wales	Private sector	Beech	Fagus sylvatica	BE	10	1 623.52

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Wales	Private sector	Beech	Fagus sylvatica	BE	12	34.19
Wales	Private sector	Birch	Betula spp.	BI	2	2 175.22
Wales	Private sector	Birch	Betula spp.	BI	4	1 273.40
Wales	Private sector	Birch	Betula spp.	BI	6	1 299.98
Wales	Private sector	Birch	Betula spp.	BI	8	443.56
Wales	Private sector	Birch	Betula spp.	BI	10	38.40
Wales	Private sector	Birch	Betula spp.	BI	12	227.92
Wales	Private sector	Sycamore	Acer pseudoplatanus	SY	2	50 497.35
Wales	Private sector	Sycamore	Acer pseudoplatanus	SY	4	5 276.08
Wales	Private sector	Sycamore	Acer pseudoplatanus	SY	6	3 973.02
Wales	Private sector	Sycamore	Acer pseudoplatanus	SY	8	2 429.77
Wales	Private sector	Sycamore	Acer pseudoplatanus	SY	10	1 789.80
Wales	Private sector	Sycamore	Acer pseudoplatanus	SY	12	1 541.90
Wales	Private sector	Poplar	Populus. spp.	PO	2	826.71
Wales	Private sector	Poplar	Populus. spp.	PO	4	597.17
Wales	Private sector	Poplar	Populus. spp.	PO	6	92.59
Wales	Private sector	Poplar	Populus. spp.	PO	8	37.53
Wales	Private sector	Poplar	Populus. spp.	PO	10	200.33
Wales	Private sector	Poplar	Populus. spp.	PO	12	67.30
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	6	2.44
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	8	2.15
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	10	5.92
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	12	92.23

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	14	231.95
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	16	1 327.24
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	18	232.60
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	20	369.16
Northern Ireland	Public forest estate	Norway spruce	Picea abies	NS	22	4.20
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	6	19.75
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	8	42.98
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	10	272.38
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	12	4 106.11
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	14	6 428.24
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	16	17 321.67
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	18	5 287.85
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	20	2 068.57
Northern Ireland	Public forest estate	Sitka spruce	Picea sitchensis	SS	22	86.42
Northern Ireland	Public forest estate	Scots pine	Pinus sylvestris	SP	4	12.33
Northern Ireland	Public forest estate	Scots pine	Pinus sylvestris	SP	6	45.80
Northern Ireland	Public forest estate	Scots pine	Pinus sylvestris	SP	8	246.44
Northern Ireland	Public forest estate	Scots pine	Pinus sylvestris	SP	10	156.86
Northern Ireland	Public forest estate	Scots pine	Pinus sylvestris	SP	12	626.52
Northern Ireland	Public forest estate	Scots pine	Pinus sylvestris	SP	14	70.38
Northern Ireland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	6	0.71
Northern Ireland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	8	4.00
Northern Ireland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	10	4.88

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	12	100.46
Northern Ireland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	14	0.63
Northern Ireland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	16	84.06
Northern Ireland	Public forest estate	Corsican pine	Pinus nigra ssp. laricio	CP	18	1.03
Northern Ireland	Public forest estate	Lodgepole pine	Pinus contorta	LP	4	162.07
Northern Ireland	Public forest estate	Lodgepole pine	Pinus contorta	LP	6	414.80
Northern Ireland	Public forest estate	Lodgepole pine	Pinus contorta	LP	8	2 335.33
Northern Ireland	Public forest estate	Lodgepole pine	Pinus contorta	LP	10	776.88
Northern Ireland	Public forest estate	Lodgepole pine	Pinus contorta	LP	12	335.30
Northern Ireland	Public forest estate	Lodgepole pine	Pinus contorta	LP	14	25.07
Northern Ireland	Public forest estate	European larch	Larix decidua	EL	6	13.03
Northern Ireland	Public forest estate	European larch	Larix decidua	EL	8	102.54
Northern Ireland	Public forest estate	European larch	Larix decidua	EL	10	357.58
Northern Ireland	Public forest estate	European larch	Larix decidua	EL	12	38.40
Northern Ireland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	4	2.31
Northern Ireland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	6	27.26
Northern Ireland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	8	170.44
Northern Ireland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	10	469.41
Northern Ireland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	12	970.10
Northern Ireland	Public forest estate	Japanese/hybrid larch	Larix kaempferi/L.	JL	14	314.04
Northern Ireland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	12	1.22
Northern Ireland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	14	1.16
Northern Ireland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	16	25.12

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	18	349.51
Northern Ireland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	20	31.85
Northern Ireland	Public forest estate	Douglas fir	Pseudotsuga menziesii	DF	22	39.10
Northern Ireland	Public forest estate	Grand fir	Abies grandis	GF	14	3.08
Northern Ireland	Public forest estate	Noble fir	Abies procera	NF	10	0.54
Northern Ireland	Public forest estate	Noble fir	Abies procera	NF	12	15.17
Northern Ireland	Public forest estate	Noble fir	Abies procera	NF	14	92.51
Northern Ireland	Public forest estate	Noble fir	Abies procera	NF	16	229.92
Northern Ireland	Public forest estate	Noble fir	Abies procera	NF	18	16.19
Northern Ireland	Public forest estate	Noble fir	Abies procera	NF	20	3.28
Northern Ireland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	12	54.49
Northern Ireland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	14	14.64
Northern Ireland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	16	11.24
Northern Ireland	Public forest estate	Western hemlock	Tsuga heterophylla	WH	18	0.37
Northern Ireland	Public forest estate	Western red cedar	Thuja plicata	RC	12	41.18
Northern Ireland	Public forest estate	Western red cedar	Thuja plicata	RC	14	5.79
Northern Ireland	Public forest estate	Western red cedar	Thuja plicata	RC	16	6.92
Northern Ireland	Public forest estate	Western red cedar	Thuja plicata	RC	18	0.16
Northern Ireland	Public forest estate	Oak	Quercus spp.	OK	4	144.87
Northern Ireland	Public forest estate	Oak	Quercus spp.	OK	6	117.88
Northern Ireland	Public forest estate	Oak	Quercus spp.	OK	8	407.33
Northern Ireland	Public forest estate	Ash	Fraxinus excelsior	AH	4	120.67
Northern Ireland	Public forest estate	Ash	Fraxinus excelsior	AH	6	42.30

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Public forest estate	Ash	Fraxinus excelsior	AH	8	48.20
Northern Ireland	Public forest estate	Ash	Fraxinus excelsior	AH	10	1.45
Northern Ireland	Public forest estate	Ash	Fraxinus excelsior	AH	12	0.86
Northern Ireland	Public forest estate	Beech	Fagus sylvatica	BE	4	7.85
Northern Ireland	Public forest estate	Beech	Fagus sylvatica	BE	6	15.23
Northern Ireland	Public forest estate	Beech	Fagus sylvatica	BE	8	81.48
Northern Ireland	Public forest estate	Beech	Fagus sylvatica	BE	10	35.04
Northern Ireland	Public forest estate	Birch	Betula spp.	BI	4	128.96
Northern Ireland	Public forest estate	Birch	Betula spp.	BI	6	32.62
Northern Ireland	Public forest estate	Birch	Betula spp.	BI	8	41.07
Northern Ireland	Public forest estate	Birch	Betula spp.	BI	10	0.31
Northern Ireland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	4	99.35
Northern Ireland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	6	49.25
Northern Ireland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	8	301.47
Northern Ireland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	10	5.07
Northern Ireland	Public forest estate	Sycamore	Acer pseudoplatanus	SY	12	4.89
Northern Ireland	Public forest estate	Poplar	Populus. spp.	PO	4	1.08
Northern Ireland	Public forest estate	Poplar	Populus. spp.	PO	6	1.99
Northern Ireland	Public forest estate	Poplar	Populus. spp.	PO	8	25.87
Northern Ireland	Public forest estate	Poplar	Populus. spp.	PO	10	3.28
Northern Ireland	Public forest estate	Poplar	Populus. spp.	PO	14	0.47
Northern Ireland	Public forest estate	Nothofagus	Nothofagus spp.	NO	10	2.60
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	6	0.46

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	8	0.40
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	10	1.10
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	12	17.20
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	14	43.26
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	16	247.52
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	18	43.38
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	20	68.84
Northern Ireland	Private sector	Norway spruce	Picea abies	NS	22	0.78
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	6	3.68
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	8	8.01
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	10	50.80
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	12	765.75
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	14	1 198.80
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	16	3 230.31
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	18	986.13
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	20	385.77
Northern Ireland	Private sector	Sitka spruce	Picea sitchensis	SS	22	16.12
Northern Ireland	Private sector	Scots pine	Pinus sylvestris	SP	4	2.30
Northern Ireland	Private sector	Scots pine	Pinus sylvestris	SP	6	8.54
Northern Ireland	Private sector	Scots pine	Pinus sylvestris	SP	8	45.96
Northern Ireland	Private sector	Scots pine	Pinus sylvestris	SP	10	29.25
Northern Ireland	Private sector	Scots pine	Pinus sylvestris	SP	12	116.84
Northern Ireland	Private sector	Scots pine	Pinus sylvestris	SP	14	13.13

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	6	0.13
Northern Ireland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	8	0.75
Northern Ireland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	10	0.91
Northern Ireland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	12	18.73
Northern Ireland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	14	0.12
Northern Ireland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	16	15.68
Northern Ireland	Private sector	Corsican pine	Pinus nigra ssp. laricio	CP	18	0.19
Northern Ireland	Private sector	Lodgepole pine	Pinus contorta	LP	4	30.22
Northern Ireland	Private sector	Lodgepole pine	Pinus contorta	LP	6	77.36
Northern Ireland	Private sector	Lodgepole pine	Pinus contorta	LP	8	435.51
Northern Ireland	Private sector	Lodgepole pine	Pinus contorta	LP	10	144.88
Northern Ireland	Private sector	Lodgepole pine	Pinus contorta	LP	12	62.53
Northern Ireland	Private sector	Lodgepole pine	Pinus contorta	LP	14	4.68
Northern Ireland	Private sector	European larch	Larix decidua	EL	6	2.43
Northern Ireland	Private sector	European larch	Larix decidua	EL	8	19.12
Northern Ireland	Private sector	European larch	Larix decidua	EL	10	66.68
Northern Ireland	Private sector	European larch	Larix decidua	EL	12	7.16
Northern Ireland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	4	0.43
Northern Ireland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	6	5.08
Northern Ireland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	8	31.79
Northern Ireland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	10	87.54
Northern Ireland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	12	180.91
Northern Ireland	Private sector	Japanese/hybrid larch	Larix kaempferi/L.	JL	14	58.57

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	12	0.23
Northern Ireland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	14	0.22
Northern Ireland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	16	4.68
Northern Ireland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	18	65.18
Northern Ireland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	20	5.94
Northern Ireland	Private sector	Douglas fir	Pseudotsuga menziesii	DF	22	7.29
Northern Ireland	Private sector	Grand fir	Abies grandis	GF	14	0.57
Northern Ireland	Private sector	Noble fir	Abies procera	NF	10	0.10
Northern Ireland	Private sector	Noble fir	Abies procera	NF	12	2.83
Northern Ireland	Private sector	Noble fir	Abies procera	NF	14	17.25
Northern Ireland	Private sector	Noble fir	Abies procera	NF	16	42.88
Northern Ireland	Private sector	Noble fir	Abies procera	NF	18	3.02
Northern Ireland	Private sector	Noble fir	Abies procera	NF	20	0.61
Northern Ireland	Private sector	Western hemlock	Tsuga heterophylla	WH	12	10.16
Northern Ireland	Private sector	Western hemlock	Tsuga heterophylla	WH	14	2.73
Northern Ireland	Private sector	Western hemlock	Tsuga heterophylla	WH	16	2.10
Northern Ireland	Private sector	Western hemlock	Tsuga heterophylla	WH	18	0.07
Northern Ireland	Private sector	Western red cedar	Thuja plicata	RC	12	7.68
Northern Ireland	Private sector	Western red cedar	Thuja plicata	RC	14	1.08
Northern Ireland	Private sector	Western red cedar	Thuja plicata	RC	16	1.29
Northern Ireland	Private sector	Western red cedar	Thuja plicata	RC	18	0.03
Northern Ireland	Private sector	Oak	Quercus spp.	OK	4	1 013.19
Northern Ireland	Private sector	Oak	Quercus spp.	OK	6	824.40

Country	Ownership	CARBINE tree species			Yield class ($m^3\ ha^{-1}\ yr^{-1}$)	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Private sector	Oak	Quercus spp.	OK	8	2 848.76
Northern Ireland	Private sector	Ash	Fraxinus excelsior	AH	4	843.94
Northern Ireland	Private sector	Ash	Fraxinus excelsior	AH	6	295.86
Northern Ireland	Private sector	Ash	Fraxinus excelsior	AH	8	337.13
Northern Ireland	Private sector	Ash	Fraxinus excelsior	AH	10	10.11
Northern Ireland	Private sector	Ash	Fraxinus excelsior	AH	12	5.98
Northern Ireland	Private sector	Beech	Fagus sylvatica	BE	4	54.94
Northern Ireland	Private sector	Beech	Fagus sylvatica	BE	6	106.48
Northern Ireland	Private sector	Beech	Fagus sylvatica	BE	8	569.87
Northern Ireland	Private sector	Beech	Fagus sylvatica	BE	10	245.05
Northern Ireland	Private sector	Birch	Betula spp.	BI	4	901.90
Northern Ireland	Private sector	Birch	Betula spp.	BI	6	228.13
Northern Ireland	Private sector	Birch	Betula spp.	BI	8	287.25
Northern Ireland	Private sector	Birch	Betula spp.	BI	10	2.17
Northern Ireland	Private sector	Sycamore	Acer pseudoplatanus	SY	4	694.81
Northern Ireland	Private sector	Sycamore	Acer pseudoplatanus	SY	6	344.47
Northern Ireland	Private sector	Sycamore	Acer pseudoplatanus	SY	8	2 108.38
Northern Ireland	Private sector	Sycamore	Acer pseudoplatanus	SY	10	35.42
Northern Ireland	Private sector	Sycamore	Acer pseudoplatanus	SY	12	34.21
Northern Ireland	Private sector	Poplar	Populus. spp.	PO	4	7.55
Northern Ireland	Private sector	Poplar	Populus. spp.	PO	6	13.95
Northern Ireland	Private sector	Poplar	Populus. spp.	PO	8	180.96
Northern Ireland	Private sector	Poplar	Populus. spp.	PO	10	22.93

Country	Ownership	CARBINE tree species			Yield class (m^3 ha^{-1} yr^{-1})	Area (ha)
		Common name	Latin name	Sp. code		
Northern Ireland	Private sector	Poplar	Populus. spp.	PO	14	3.28
Northern Ireland	Private sector	Nothofagus	Nothofagus spp.	NO	10	18.19

Annex 3 Worked examples of detailed calculation of detailed Forest Management Practices

Introduction

The following analysis steps were carried out by referring to standard yield models (Matthews et al., 2016) for combinations of tree species and yield class and for the following management treatments:

- No thinning
- Standard thinning.

An initial tree planting spacing was selected equivalent to that referred to for the tree species in the CARBINE model.

Models involving no thinning

An output file was produced containing a result on each row, for each combination of tree species and yield class.

Each row of results consisted of:

1. Tree species
2. Yield class
3. Age of maximum MAI or the age at which the last full volume thinning is scheduled in the yield model.
4. A value P, where P is defined below.

P is calculated as:

(0.9 / S) x 100

where S = 1 + F1

and F1 = crown expansion factor for the tree species, taken from the CARBINE model.

Example (1): Calculations for Sitka spruce, Yield Class 12, no thinning, 1.7 metre initial planting spacing

- Select a yield model consistent with the specification above, i.e. select model for SS, YC12, no thin, 1.7 metre spacing (standard spacing for models for this species), see Figure A3.1.

- Find the age of maximum MAI or the age of the last full volume thinning in the yield model, by reviewing the yield model with thinning for the equivalent combination of Species, Yield Class and initial planting spacing, and setting age of maximum MAI as last age of full MT volume thinning, defined as 70% of the yield class × thinning cycle (usually 5 years, e.g. 0.7 × 12 × 5 = 42 m3 ha-1). For this example the relevant age is 54 years.

Figure A3.1. Example yield table for unthinned Sitka spruce.

Species	Yield class	Thinning treatment	Max MAI age	Initial spacing	Stand area			
Sitka spruce	12	No Thinning	54	1.7	1			
Age yrs	**Top ht m**	**Trees /ha**	**Mean dbh cm**	**BA m²/ha**	**Mean vol m³**	**Vol m³/ha**	**Percent mortality**	**MAI vol m³/ha /yr**
19	7	3317	10	25	0.02	63	0	3.3
24	9.6	3087	12	36	0.04	129	0	5.4
29	12.2	2806	14	46	0.07	210	0	7.3
34	14.7	2567	16	53	0.12	298	1	8.8
39	16.9	2271	18	57	0.17	385	3	9.8
44	19	2009	20	61	0.23	466	4	10.5
49	20.8	1794	21	63	0.3	536	6	10.9
54	22.4	1625	23	65	0.37	595	8	11
59	23.7	1498	24	67	0.43	645	9	10.9
64	24.8	1404	25	69	0.49	686	11	10.7
69	25.7	1330	26	70	0.54	721	12	10.4
74	26.5	1266	27	71	0.59	752	12	10.1
79	27.3	1209	28	72	0.65	780	13	9.9

The value "P" is calculated as 1 plus the crown expansion factor from the CARBINE model for the tree species. In this example this is 1 + 0.32 = 1.32. P is calculated as (0.9 / 1.32) × 100 = 68.18.

Models involving standard thinning

An output file was produced containing a result on each row, for each combination of tree species and yield class.

Each row of results consisted of:

1. Tree species
2. Yield class
3. Age of first thinning (as represented in the yield model)
4. Age of maximum MAI or last full volume thinning
5. Q1, where Q1 is defined below

6. Q2, where Q2 is defined below

7. Q3, where Q3 is defined below

8. Q4, where Q4 is defined below

9. Q5, where Q4 is defined below

10. Q6, where Q4 is defined below

11. P, where P has already been defined for no-thin models (see earlier).

Calculation of Q1, Q2, Q3 and Q4

Step 1

The following calculations were carried out for each age in the yield model for which a thinning volume is removed:

Calculate p (i) = ((0.9 x v_thin (i)) / ((1 + F1) * v_before (i))) x 100

where p (i) is the result required for the ith thinning

and F1 and F2 have already been defined for no-thin models (see earlier)

and v_thin (i) = the stem volume removed at the ith thinning

and v_before (i) = the standing stem volume before thinning at the age of the ith thinning.

Step 2

The following calculations were carried out for the thinnings that occur at ages up to and including the age of maximum MAI or the last full volume thinning:

1. Find the minimum value of p (i); assign this value to Q1

2. Find the mean value of p (i); assign this value to Q2

3. Find the maximum value of p (i); assign this value to Q3.

Step 3

The following calculations were carried out for the thinnings that occur at ages after the age of maximum MAI or the last full volume thinning:

- Find the minimum value of p (i); assign this value to Q4

- Find the mean value of p (i); assign this value to Q5

• Find the maximum value of p (i); assign this value to Q6.

Step 4

This step was only carried out for yield models where initial thinnings occur before the first ‘standard’ thinning (see Example 1 for definition of standard thinning).

Calculate p = ((0.9 x v_thin) / ((1 + F1) * v_before)) x 100

where p is the result required for the (non-standard) initial thinning

and F1 has already been defined for no-thin models (see earlier)

and v_thin = the stem volume removed at the initial thinning

and v_before = the standing stem volume before thinning at the age of the initial thinning.

Report the calculated value separately from other thinnings.

Example (2): Scots pine, Yield Class 8, intermediate thinning, 1.4 metre initial planting spacing.

• Select a yield model consistent with the specification above, i.e. select model for SP, YC8, intermediate thin, 1.4 metre spacing (standard spacing for models for this species), see Figure A3.2.

• For each age in the yield model with a thinning, a value “p” is calculated. For example, for the first thinning in this example, “p” is calculated as:

p = ((0.9 × 28) / (1 + 0.34) × 105.3)) × 100 = 17.9

Figure A3.2. Example yield table for thinned Scots pine.

Species	**Yield class**	**Thinning treatment**	**Initial spacing**	**Stand area**										
Scots pine	8	Intermediate	1.4	1										
1st thin delay	**1st thin type**	**1st thin age**	**2nd thin age**	**Max MAI age**	**Sub thin type**	**Late thin age**	**Late thin cycle**							
0 years	INTERMEDIATE	29 years	34 years	79 years	INTERMEDIATE	N/A	N/A							
			MAIN CROP before thinning				**Yield from THINNINGS**					**CUMULATIVE PRODUCTION**		**MAI**
Age yrs	**Top ht m**	**Trees /ha**	**Mean dbh cm**	**BA m²/ha**	**Mean vol m³**	**Vol m³/ha**	**Trees /ha**	**Mean dbh cm**	**BA m²/ha**	**Mean vol m³**	**Vol m³/ha**	**BA m²/ha**	**Vol m³/ha**	**Vol m³/ha /yr**
19	6.2	4652	7	19	0.01	34	0	0	0	0	0	19	34	1.8
24	8.1	4273	9	25	0.01	64	0	0	0	0	0	25	64	2.7
29	9.9	3819	10	32	0.03	105	1323	10	11	0.02	28	32	105	3.6
34	11.6	2407	12	27	0.05	127	747	11	7	0.04	28	38	155	4.6
39	13.2	1660	14	27	0.09	155	402	13	5	0.07	28	45	211	5.4
44	14.7	1258	17	29	0.15	185	251	15	4	0.11	28	52	269	6.1
49	16	1007	20	30	0.21	215	172	17	4	0.16	28	58	327	6.7
54	17.2	836	22	32	0.29	245	124	19	4	0.23	28	63	385	7.1
59	18.3	712	25	34	0.38	273	93	22	3	0.3	28	68	441	7.5
64	19.4	618	27	35	0.48	299	72	24	3	0.39	28	73	495	7.7
69	20.3	546	29	36	0.59	321	57	26	3	0.49	28	78	545	7.9
74	21.1	489	31	37	0.69	339	42	28	3	0.58	25	81	591	8
79	21.8	447	33	38	0.79	355	32	30	2	0.67	22	85	631	8
84	22.4	415	34	38	0.89	368	27	31	2	0.68	19	87	666	7.9
89	22.9	388	35	38	0.98	379	19	33	2	0.81	16	89	696	7.8
94	23.3	368	36	38	1.06	390	15	34	1	0.9	13	91	722	7.7
99	23.7	354	37	39	1.13	399	11	35	1	0.97	10	93	745	7.5

For this example, the following values of “p” can be calculated for the 9 thinnings prior to age of maximum MAI: 17.9, 14.8, 12.2, 10.2, 8.7, 7.7, 6.9, 6.3, 5.9.

Step 2 involves reviewing the results from Step 1 for the thinnings up to and including the age of maximum MAI to find the following values:

Q1 = minimum value = 5.9

Q2 = mean value = 10 (mean of the 9 qualifying thinning events listed above)

Q3 = maximum value = 17.9 (see equation above).

Step 3 involves repeating the same process as Step 2, but for the thinnings occurring after the defined age of maximum MAI. In this example there are 16 thinnings after the age of maximum MAI. The calculated values of “p” are: 4.9, 4.1, 3.4, 2.8, 2.2, 1.7, 1.3, 1.0, 0.8, 0.6, 0.5, 0.4, 0.3, 0.2, 0.2, 0.1. The results are reviewed to find the following values:

Q4 = minimum value = 0.1

Q5 = mean value = 1.5 (mean of the 16 qualifying thinning events listed above)

Q6 = maximum value = 4.9.

Example (3): Oak, Yield Class 6, intermediate thin, 1.2 metre initial planting spacing.

This example is similar to Example 2 above. However, it includes a non-standard initial (pre-commercial) thinning reported separately from the results of the other steps in the process.

- Select a yield model consistent with the specification above, i.e. select model for OK, YC6, intermediate thinning, 1.2 metre spacing (standard spacing for models for this species), see Figure A3.3.

- For each age in the yield model with a thinning, a value “p” is calculated. For example, for the first thinning in this example, “p” is calculated as:

p = ((0.9 × 21) / (1 + 0.24) × 97.3)) × 100 = 15.7

Figure A3.3. Example yield table for thinned oak.

Species	Yield class	Thinning treatment	Initial spacing	Stand area										
Oak	6	Intermediate	1.2	1										
1st thin delay	1st thin type	1st thin age	2nd thin age	Max MAI age	Sub thin type	Late thin age	Late thin cycle							
0 years	INTERMEDIATE	25 years	30 years	80 years	INTERMEDIATE	N/A	N/A							
			MAIN CROP before thinning				Yield from THINNINGS					CUMULATIVE PRODUCTION		MAI
Age yrs	Top ht m	Trees /ha	Mean dbh cm	BA m²/ha	Mean vol m³	Vol m³/ha	Trees /ha	Mean dbh cm	BA m²/ha	Mean vol m³	Vol m³/ha	BA m²/ha	Vol m³/ha	Vol m³/ha /yr
20	8.4	5115	7	19	0.01	42	0	0	0	0	0	19	42	2.1
25	10.4	5114	8	25	0.01	71	1585	6	5	0.01	8	25	71	2.8
30	12.2	3529	10	26	0.03	97	1385	8	7	0.02	21	31	106	3.5
35	13.9	2144	12	24	0.05	116	685	10	5	0.03	21	36	145	4.1
40	15.4	1459	14	24	0.09	137	386	11	4	0.05	21	41	187	4.7
45	16.8	1073	17	24	0.15	158	252	13	4	0.08	21	45	229	5.1
50	18.1	822	19	24	0.22	178	176	15	3	0.12	21	49	271	5.4
55	19.2	646	22	25	0.31	197	121	17	3	0.17	21	52	311	5.6
60	20.2	524	25	25	0.41	214	89	20	3	0.24	21	55	349	5.8
65	21.1	436	27	25	0.53	229	66	22	2	0.32	21	58	384	5.9
70	21.9	370	29	25	0.65	242	51	24	2	0.41	21	61	418	6
75	22.7	319	32	25	0.79	252	40	26	2	0.53	21	63	450	6
80	23.3	279	34	26	0.94	261	33	28	2	0.63	21	66	480	6
85	23.9	246	36	26	1.09	269	28	30	2	0.75	21	68	508	6
90	24.4	217	39	26	1.26	275	24	32	2	0.89	21	70	535	5.9
95	24.8	194	41	25	1.44	279	20	35	2	1.03	21	72	560	5.9
100	25.2	173	43	25	1.62	282	17	37	2	1.21	21	73	584	5.8
105	25.6	157	45	25	1.81	283	14	39	2	1.37	20	75	606	5.8
110	25.9	143	47	25	2	284	12	41	2	1.53	19	76	627	5.7
115	26.2	131	49	24	2.18	285	10	43	1	1.76	18	77	646	5.6
120	26.4	121	50	24	2.36	285	9	45	1	1.94	17	79	664	5.5
125	26.6	113	52	24	2.53	284	8	46	1	2.03	16	80	680	5.4
130	26.8	105	53	23	2.72	284	7	48	1	2.22	15	81	696	5.4
135	27	98	55	23	2.89	283	6	50	1	2.41	14	82	710	5.3
140	27.2	92	56	23	3.07	283	5	52	1	2.58	13	83	724	5.2
145	27.3	87	58	23	3.25	282	5	54	1	2.78	13	83	736	5.1
150	27.4	82	59	23	3.41	280	4	55	1	2.97	12	84	747	5

For this example, the following values of "p" can be calculated for the 14 'standard' thinnings prior to age of maximum MAI: 15.7, 13.2, 11.2, 9.7, 8.6, 7.7, 7.1, 6.7, 6.3, 6.0, 5.8, 5.7, 5.5, 5.5.

Step 2 involves reviewing the results from Step 1 for the thinnings up to and including the age of maximum MAI to find the following values:

Q1 = minimum value = 5.5

Q2 = mean value = 8.2 (mean of the 14 qualifying thinning events listed above)

Q3 = maximum value = 15.7 (see equation above).

Step 3 involves repeating the same process as Step 2, but for the thinnings occurring after the defined age of maximum MAI. In this example there are 40 thinnings after the age of maximum MAI. The calculated values of "p" are: 5.3, 5.0, 4.8, 4.5, 4.3, 4.1, 3.9, 3.6, 3.4, 3.2, 3.0, 2.8, 2.6, 2.4, 2.3, 2.1, 2.0, 1.8, 1.7, 1.6, 1.5, 1.4, 1.3, 1.2, 1.1, 1.0, 0.9, 0.9, 0.8, 0.8, 0.7, 0.7, 0.6, 0.6, 0.5, 0.5, 0.5, 0.4, 0.4, 0.4.

The results are reviewed to find the following values:

Q4 = minimum value = 0.4

Q5 = mean value = 2.0 (mean of the 40 qualifying thinning events listed above)

Q6 = maximum value = 5.3 (see equation above).

Step 4 involves the calculation of p for the initial (non-standard) thinning in this yield model. The resulting value p = 8.6 and is reported separately.

Annex 4 Methodology and rules applied in development of estimates of rotations applied to forest strata in FMPs for the public forest estates in England, Wales and Scotland

Methodology

The following analysis was carried out on the sub-compartment database data (SCDB data) for the public forest estates in England, Scotland and Wales.

The analysis was based on SCDB data available for the years 2000 to 2009.

For each of the years 2000 to 2008, it was possible to identify those forest areas in the SCDB that had been reassigned in the following year as “felled”. For example, for the year 2000, it was possible to identify those forest areas that had been reclassified as “felled” in the data for the year 2001, and so on.

Since the planting years of forest components are recorded in SCDB data, the implied rotations applied to forest areas can be calculated by subtracting the planting year from the apparent felling year (see above).

In some cases, data had to be rejected (e.g. if the apparent rotation was less than or equal to zero, implying that the planting year had already been updated to a new value).

An initial analysis of implied rotations for different tree species indicated that rotations were not changing or evolving over the period 2000 to 2009. Hence the main analysis considered the data for these years as a single, combined data set.

Main analysis: Step 1

Each felled forest area was assigned a “CARBINE tree species”. For the majority of forest areas, this involved assigning the actual tree species to the felled area, e.g. an area of felled Scots pine in the SCDB was assigned a “CARBINE tree species” of Scots pine. For areas where relatively minor tree species were felled, these were “mapped” to the most appropriate “CARBINE tree species”. For example, an area of felled Weymouth pine in the SCDB was assigned a “CARBINE tree species” of Scots pine. Due to limited data, broadleaf forest areas were grouped together under the single “CARBINE tree species” of sycamore (“other broadleaves”), the exceptions being oak and beech, which were treated as individual tree species.

Main analysis: Step 2

The data on felled areas were classified and grouped according to

- The relevant “CARBINE tree species”
- Their assigned yield class in the SCDB
- Their assigned “basic yield model” in the SCDB (i.e. prescribing the area as thinned or unthinned).

Hence, the felled forest areas were grouped into strata, each one involving a unique combination of “CARBINE tree species”, yield class and thinning treatment (basic yield model).

Each stratum was then analysed separately according to Steps 3 and 4.

Main analysis: Step 3

The data on felled areas for a stratum were arranged into a frequency distribution, showing the forest area associated with different implied rotations, ranging from 15 years to 300 years.

Given the frequency distribution for a stratum, it was possible to derive a probability distribution, i.e. a distribution indicating the probability of a forest stratum having a specified applied rotation applied.

Main analysis: Step 4

The “tails” of the probability distribution for each rotation were excluded from further calculations. This was a precaution aimed at eliminating extremely long or short rotations which were very likely to reflect data recording/maintenance errors. This involved identifying the bottom and top 5% of the probability distributions as excluded from contributing further to the analysis.

The portion of the probability distribution representing the central one-third of the distribution was identified and the mean rotation was calculated for this portion. This was taken to represent a “mid-range” rotation for the stratum.

The portion of the probability distribution ranging from the excluded lower 5% tail up to the central one-third of the distribution was identified and the mean rotation was calculated for this portion. This was taken to represent a “low” rotation for the stratum.

The portion of the probability distribution ranging from the central one-third up to the excluded upper 5% tail of the distribution was identified and the mean rotation was calculated for this portion. This was taken to represent a “high” rotation for the stratum.

In this way, “low”, “mid-range” and “high” rotations were estimated for each stratum, i.e. for each combination of “CARBINE tree species”, basic yield model (“no thinning”, “thinning”) and yield class.

Rules

A set of rules was needed to deal with situations where no data were available for estimating “low”, “mid-range” and “high” rotations for a stratum, or where data were so few that estimation was unreliable.

Rules 1 to 4 below deal with situations that arose in the data sets available for England, Scotland and Wales. Rules covering other possible situations/cases were not needed because they did not occur in the data.

Rule 1

Rule 1 is applied to the results for each yield class, as obtained in each country, for a combination of “CARBINE tree species” and “basic yield model”.

IF:

> The total felled forest area available in the data, used for estimating the “low”, mid-range” and “high” rotations for the yield class is less than 10 ha OR
> There are no data available for the yield class.

THEN:

> Do not use the estimates obtained (if any) for the yield class
> Instead, apply the estimates obtained from the data set formed by combining all yield classes for the “CARBINE tree species” and “basic yield model” (after applying Rules 1 to 3).

Variations to the action under Rule 1 were considered, such as applying the results for another yield class, where these were valid. However, the alternative actions added complexity to the process and it was decided that they were unlikely to result in significant improvements to the estimation of rotations.

Rule 2

Consider the following data sets for each of England, Scotland and Wales:

> Data set 1: data for a given combination of a “CARBINE tree species” and a “basic yield model” of “no thinning”, taking data for all yield classes together
> Data set 2: data for a given combination of a “CARBINE tree species” and a “basic yield model” of “thinning”, taking data for all yield classes together.

IF, in any one country:

> Data set 1 (“no thinning”) represents a total felled forest area less than 100 ha AND
> Data set 2 (“thinning”) represents a total felled forest area less than 100 ha AND

Data sets 1 and 2 combined represent a total felled forest area less than 100 ha.

THEN:

Combine data sets 1 and 2 (for the “CARBINE tree species”) and also combine the data sets available for England, Scotland and Wales into a single data set. Use this combined data set to estimate “low”, “mid-range” and “high” rotations for each yield class and assume these apply for the “CARBINE tree species” and both cases of “no thinning” and “thinning”.
The above calculations should be carried separately out for each yield class represented in the data, and also for the data set formed by combining all yield classes.

Rule 3

Consider the following data sets for each of England, Scotland and Wales:

Data set 1: data for a given combination of a “CARBINE tree species” and a “basic yield model” of “no thinning”, taking data for all yield classes together
Data set 2: data for a given combination of a “CARBINE tree species” and a “basic yield model” of “thinning, taking data for all yield classes together.

IF, in any one country:

Data set 1 (no thinning) represents a total felled forest area less than 100 ha AND
Data set 2 (thinning) represents a total felled forest area of at least 100 ha.

THEN:

Do not use data set 1
Use data set 2 (for the “CARBINE tree species” and “thinning”) to estimate “low”, “mid-range” and “high” rotations for each yield class and assume these apply for the “CARBINE tree species” and “no thinning”, as well as for the case involving “thinning”.
The above calculations should be carried separately out for each yield class represented in the data, and for the data set formed by combining all yield classes.

Rule 4

IF Rules 2 and 3 do not apply, then this should mean that, in each country:

Data set 1 (no thinning) represents a total felled forest area of at least 100 ha AND
Data set 2 (thinning) represents a total felled forest area of at least 100 ha.

THEN:

Use data set 1 to estimate “low”, “mid-range” and “high” rotations for each yield class, for the case of “CARBINE tree species” and “no thinning”
Use data set 2 to estimate “low”, “mid-range” and “high” rotations for each yield class, for the case of “CARBINE tree species” and “thinning”.
The above calculations should be carried separately out for each yield class represented in the data, and for the data set formed by combining all yield classes.

Annex 5 Description of detailed Forest Management Practices (FMPs)

Forest Management Practice involving no harvesting

Forest management practice		**Silvicultural operations with no final harvesting, no thinning**
Index	Name of Practice	Comments
FMP1	No thinning, no clearcutting	PFE and private sector; all species; all yield classes

Public forest estate (England, Scotland and Wales): Forest Management Practices involving clearcutting with no thinning during the rotation

Note that three rotations are assigned for each FMP. Equal proportions of forest area within a stratum are assigned to each of the 3 rotations.

FMP		**Silvicultural operations with final harvesting – No thinning**			
		Final cutting			
Index	**Name of practice**	**Age (years)**			**% biomass removals**
		Low	**Mid-range**	**High**	
FMP2	NSYC2NTE	48	52	59	67
FMP3	NSYC2NTS	43	48	78	67
FMP4	NSYC2NTW	42	51	60	67
FMP5	NSYC4NTE	48	52	59	67
FMP6	NSYC4NTS	45	55	72	67
FMP7	NSYC4NTW	42	51	60	67
FMP8	NSYC6NTE	48	51	55	66
FMP9	NSYC6NTS	45	57	71	66
FMP10	NSYC6NTW	58	81	81	66
FMP11	NSYC8NTE	48	52	60	66
FMP12	NSYC8NTS	40	48	61	66
FMP13	NSYC8NTW	47	63	70	66
FMP14	NSYC10NTE	49	52	58	66

FMP		Silvicultural operations with final harvesting – No thinning Final cutting			
Index	Name of practice	Age (years)			% biomass removals
		Low	Mid-range	High	
FMP15	NSYC10NTS	42	47	57	66
FMP16	NSYC10NTW	42	57	67	66
FMP17	NSYC12NTE	46	53	62	66
FMP18	NSYC12NTS	42	48	55	66
FMP19	NSYC12NTW	44	51	61	66
FMP20	NSYC14NTE	52	54	57	66
FMP21	NSYC14NTS	43	48	53	66
FMP22	NSYC14NTW	47	51	58	66
FMP23	NSYC16NTE	43	55	66	66
FMP24	NSYC16NTS	40	48	54	66
FMP25	NSYC16NTW	39	47	54	66
FMP26	NSYC18NTE	48	52	59	66
FMP27	NSYC18NTS	42	46	51	66
FMP28	NSYC18NTW	41	47	55	66
FMP29	NSYC20NTE	48	52	59	66
FMP30	NSYC20NTS	35	44	50	66
FMP31	NSYC20NTW	38	41	48	66
FMP32	NSYC22NTE	48	52	59	66
FMP33	NSYC22NTS	42	42	44	66
FMP34	NSYC22NTW	42	51	60	66
FMP35	NSYC24NTE	48	52	59	72
FMP36	NSYC24NTS	42	48	55	72
FMP37	NSYC26NTS	42	48	55	72
FMP38	SSYC2NTE	41	50	61	67
FMP39	SSYC2NTS	37	44	53	67
FMP40	SSYC2NTW	44	49	51	67
FMP41	SSYC4NTE	47	52	59	67
FMP42	SSYC4NTS	42	52	54	67
FMP43	SSYC4NTW	44	55	56	67
FMP44	SSYC6NTE	46	52	59	68
FMP45	SSYC6NTS	38	46	57	68
FMP46	SSYC6NTW	38	45	48	68
FMP47	SSYC8NTE	45	50	55	68
FMP48	SSYC8NTS	35	43	53	68
FMP49	SSYC8NTW	38	42	52	68

FMP		Silvicultural operations with final harvesting – No thinning Final cutting			
Index	Name of practice	Age (years)			% biomass removals
		Low	Mid-range	High	
FMP50	SSYC10NTE	44	50	54	68
FMP51	SSYC10NTS	36	44	51	68
FMP52	SSYC10NTW	37	45	53	68
FMP53	SSYC12NTE	42	49	54	68
FMP54	SSYC12NTS	34	42	49	68
FMP55	SSYC12NTW	38	45	51	68
FMP56	SSYC14NTE	37	45	52	68
FMP57	SSYC14NTS	33	39	48	68
FMP58	SSYC14NTW	37	44	51	68
FMP59	SSYC16NTE	30	39	48	68
FMP60	SSYC16NTS	32	39	47	68
FMP61	SSYC16NTW	34	42	50	68
FMP62	SSYC18NTE	25	35	44	68
FMP63	SSYC18NTS	31	37	44	68
FMP64	SSYC18NTW	36	43	47	68
FMP65	SSYC20NTE	25	30	34	68
FMP66	SSYC20NTS	31	36	43	68
FMP67	SSYC20NTW	34	39	47	68
FMP68	SSYC22NTE	23	29	45	68
FMP69	SSYC22NTS	30	38	45	68
FMP70	SSYC22NTW	32	39	41	68
FMP71	SSYC24NTE	39	48	54	68
FMP72	SSYC24NTS	32	35	39	68
FMP73	SSYC24NTW	32	40	45	68
FMP74	SSYC26NTE	39	48	54	72
FMP75	SSYC26NTS	30	30	30	72
FMP76	SSYC28NTS	33	40	48	72
FMP77	SSYC30NTS	33	40	48	72
FMP78	SPYC2NTE	45	48	57	67
FMP79	SPYC2NTS	41	45	52	67
FMP80	SPYC2NTW	46	51	55	67
FMP81	SPYC4NTE	45	48	57	67
FMP82	SPYC4NTS	37	50	76	67
FMP83	SPYC4NTW	46	51	55	67
FMP84	SPYC6NTE	45	48	57	67

FMP		Silvicultural operations with final harvesting – No thinning Final cutting			
Index	Name of practice	Age (years)			% biomass removals
		Low	Mid-range	High	
FMP85	SPYC6NTS	42	48	55	67
FMP86	SPYC6NTW	46	51	55	67
FMP87	SPYC8NTE	43	49	60	67
FMP88	SPYC8NTS	41	45	51	67
FMP89	SPYC8NTW	49	54	64	67
FMP90	SPYC10NTE	44	47	55	67
FMP91	SPYC10NTS	40	45	50	67
FMP92	SPYC10NTW	46	50	52	67
FMP93	SPYC12NTE	46	49	59	67
FMP94	SPYC12NTS	40	44	50	67
FMP95	SPYC12NTW	46	49	52	67
FMP96	SPYC14NTE	43	47	53	67
FMP97	SPYC14NTS	41	45	52	67
FMP98	SPYC14NTW	46	51	55	67
FMP99	SPYC16NTE	46	51	53	73
FMP100	SPYC16NTS	41	45	52	73
FMP101	CPYC2NTE	38	48	64	67
FMP102	CPYC2NTS	46	50	63	67
FMP103	CPYC2NTW	41	46	55	67
FMP104	CPYC4NTS	46	50	63	67
FMP105	CPYC4NTW	41	46	55	67
FMP106	CPYC6NTE	38	48	64	73
FMP107	CPYC6NTS	50	50	54	73
FMP108	CPYC6NTW	41	46	55	73
FMP109	CPYC8NTE	38	48	64	73
FMP110	CPYC8NTS	48	63	65	73
FMP111	CPYC8NTW	45	49	66	73
FMP112	CPYC10NTE	38	48	64	73
FMP113	CPYC10NTS	47	46	46	73
FMP114	CPYC10NTW	40	47	53	73
FMP115	CPYC12NTE	38	41	56	73
FMP116	CPYC12NTS	46	48	48	73
FMP117	CPYC12NTW	39	43	45	73
FMP118	CPYC14NTE	38	58	61	73
FMP119	CPYC14NTS	46	50	63	73

FMP		Silvicultural operations with final harvesting – No thinning Final cutting			
Index	Name of practice	Age (years)			% biomass removals
		Low	Mid-range	High	
FMP120	CPYC14NTW	43	43	44	73
FMP121	CPYC16NTE	41	49	60	73
FMP122	CPYC16NTW	41	46	55	73
FMP123	CPYC18NTE	38	48	64	73
FMP124	CPYC18NTW	41	46	55	73
FMP125	CPYC20NTW	41	46	55	73
FMP126	CPYC22NTW	41	46	55	72
FMP127	LPYC2NTE	46	48	49	67
FMP128	LPYC2NTS	28	32	42	67
FMP129	LPYC2NTW	36	41	46	67
FMP130	LPYC4NTE	41	47	50	67
FMP131	LPYC4NTS	23	41	47	67
FMP132	LPYC4NTW	38	44	49	67
FMP133	LPYC6NTE	39	44	48	67
FMP134	LPYC6NTS	36	42	47	67
FMP135	LPYC6NTW	41	45	48	67
FMP136	LPYC8NTE	38	40	46	67
FMP137	LPYC8NTS	34	39	44	67
FMP138	LPYC8NTW	38	42	45	67
FMP139	LPYC10NTE	36	40	47	67
FMP140	LPYC10NTS	32	37	42	67
FMP141	LPYC10NTW	37	39	43	67
FMP142	LPYC12NTE	39	45	48	67
FMP143	LPYC12NTS	32	35	40	67
FMP144	LPYC12NTW	33	35	40	67
FMP145	LPYC14NTE	39	45	48	67
FMP146	LPYC14NTS	30	31	34	67
FMP147	LPYC14NTW	33	33	34	67
FMP148	LPYC16NTS	33	39	45	73
FMP149	LPYC16NTW	36	41	46	73
FMP150	ELYC2NTS	45	52	75	80
FMP151	ELYC4NTE	73	76	77	80
FMP152	ELYC4NTS	44	53	71	80
FMP153	ELYC4NTW	50	52	66	80
FMP154	ELYC6NTE	45	70	74	80

FMP		Silvicultural operations with final harvesting – No thinning Final cutting			
Index	Name of practice	Age (years)			% biomass removals
		Low	Mid-range	High	
FMP155	ELYC6NTS	49	79	84	80
FMP156	ELYC6NTW	50	52	66	80
FMP157	ELYC8NTE	46	57	71	80
FMP158	ELYC8NTS	46	51	62	80
FMP159	ELYC8NTW	50	52	66	80
FMP160	ELYC10NTE	46	56	63	80
FMP161	ELYC10NTS	43	46	52	80
FMP162	ELYC10NTW	50	52	66	80
FMP163	ELYC12NTE	39	42	54	80
FMP164	ELYC12NTS	44	48	61	80
FMP165	ELYC12NTW	50	52	66	80
FMP166	ELYC14NTE	43	57	73	76
FMP167	ELYC14NTS	45	52	75	76
FMP168	ELYC16NTS	45	52	75	73
FMP169	JLYC2NTE	41	49	53	76
FMP170	JLYC2NTS	38	45	52	76
FMP171	JLYC2NTW	38	45	51	76
FMP172	JLYC4NTE	39	47	50	76
FMP173	JLYC4NTS	31	39	46	76
FMP174	JLYC4NTW	42	45	47	76
FMP175	JLYC6NTE	36	49	52	76
FMP176	JLYC6NTS	35	42	49	76
FMP177	JLYC6NTW	32	39	51	76
FMP178	JLYC8NTE	42	46	56	76
FMP179	JLYC8NTS	39	44	49	76
FMP180	JLYC8NTW	36	43	50	76
FMP181	JLYC10NTE	44	47	53	76
FMP182	JLYC10NTS	41	47	50	76
FMP183	JLYC10NTW	39	45	51	76
FMP184	JLYC12NTE	47	50	52	76
FMP185	JLYC12NTS	43	47	51	76
FMP186	JLYC12NTW	40	45	53	76
FMP187	JLYC14NTE	41	49	53	76
FMP188	JLYC14NTS	42	47	49	76
FMP189	JLYC14NTW	39	43	50	76

FMP		Silvicultural operations with final harvesting – No thinning Final cutting			
Index	Name of practice	Age (years)			% biomass removals
		Low	Mid-range	High	
FMP190	JLYC16NTE	41	49	53	73
FMP191	JLYC16NTS	39	45	50	73
FMP192	JLYC16NTW	38	45	51	73
FMP193	JLYC20NTS	39	45	50	73
FMP194	DFYC2NTE	37	43	51	67
FMP195	DFYC2NTS	38	46	51	67
FMP196	DFYC2NTW	42	47	51	67
FMP197	DFYC6NTS	38	46	51	67
FMP198	DFYC8NTE	37	43	51	71
FMP199	DFYC8NTS	38	43	53	71
FMP200	DFYC8NTW	42	47	51	71
FMP201	DFYC10NTE	43	48	54	71
FMP202	DFYC10NTS	40	49	52	71
FMP203	DFYC10NTW	42	47	51	71
FMP204	DFYC12NTE	39	46	51	71
FMP205	DFYC12NTS	40	47	50	71
FMP206	DFYC12NTW	42	47	51	71
FMP207	DFYC14NTE	35	42	50	71
FMP208	DFYC14NTS	42	45	50	71
FMP209	DFYC14NTW	42	47	52	71
FMP210	DFYC16NTE	36	41	47	71
FMP211	DFYC16NTS	31	37	49	71
FMP212	DFYC16NTW	44	47	57	71
FMP213	DFYC18NTE	35	41	49	71
FMP214	DFYC18NTS	38	46	51	71
FMP215	DFYC18NTW	42	45	48	71
FMP216	DFYC20NTE	35	39	57	71
FMP217	DFYC20NTS	38	46	51	71
FMP218	DFYC20NTW	45	47	49	71
FMP219	DFYC22NTE	34	41	45	71
FMP220	DFYC22NTS	38	46	51	71
FMP221	DFYC22NTW	42	47	51	71
FMP222	DFYC24NTE	39	45	49	71
FMP223	DFYC24NTS	38	46	51	71
FMP224	DFYC24NTW	42	47	51	71

FMP		Silvicultural operations with final harvesting – No thinning Final cutting			
Index	Name of practice	Age (years)			% biomass removals
		Low	Mid-range	High	
FMP225	DFYC26NTS	38	46	51	72
FMP226	GFYC2NTSW	35	42	47	67
FMP227	GFYC4NTSW	35	42	47	67
FMP228	GFYC8NTS	35	42	47	68
FMP229	GFYC10NTS	35	42	47	68
FMP230	GFYC12NTE	40	43	48	72
FMP231	GFYC12NTSW	35	42	47	72
FMP232	GFYC14NTE	31	38	47	72
FMP233	GFYC14NTSW	40	43	48	72
FMP234	GFYC16NTE	37	43	49	72
FMP235	GFYC16NTSW	31	38	47	72
FMP236	GFYC18NTE	38	44	47	72
FMP237	GFYC18NTSW	37	43	49	72
FMP238	GFYC20NTE	37	42	46	72
FMP239	GFYC20NTSW	38	44	47	72
FMP240	GFYC22NTE	35	41	43	72
FMP241	GFYC22NTSW	37	42	46	72
FMP242	GFYC24NTE	35	42	47	72
FMP243	GFYC24NTSW	35	41	43	72
FMP244	GFYC26NTE	33	35	36	72
FMP245	GFYC26NTSW	35	42	47	72
FMP246	GFYC28NTE	35	42	47	72
FMP247	GFYC28NTSW	33	35	36	72
FMP248	GFYC30NTSW	35	42	47	72
FMP249	NFYC2NTS	37	43	48	67
FMP250	NFYC4NTSW	37	43	48	67
FMP251	NFYC6NTSW	37	43	48	68
FMP252	NFYC8NTSW	37	43	48	68
FMP253	NFYC10NTESW	35	39	45	70
FMP254	NFYC12NTESW	35	40	45	70
FMP255	NFYC14NTESW	36	42	48	70
FMP256	NFYC16NTESW	39	44	49	70
FMP257	NFYC18NTSW	38	42	46	70
FMP258	NFYC20NTSW	37	45	48	70
FMP259	NFYC22NTESW	38	42	47	70

FMP		Silvicultural operations with final harvesting – No thinning Final cutting			
Index	Name of practice	Age (years)			% biomass removals
		Low	Mid-range	High	
FMP260	NFYC24NTSW	37	43	48	72
FMP261	NFYC26NTS	37	43	48	72
FMP262	NFYC28NTS	37	43	48	72
FMP263	WHYC2NTSW	38	43	49	67
FMP264	WHYC4NTS	38	43	49	67
FMP265	WHYC6NTSW	38	43	49	68
FMP266	WHYC8NTESW	38	43	49	68
FMP267	WHYC10NTESW	43	51	61	68
FMP268	WHYC12NTESW	41	46	52	76
FMP269	WHYC14NTESW	40	45	50	76
FMP270	WHYC16NTESW	39	43	49	76
FMP271	WHYC18NTESW	37	43	48	76
FMP272	WHYC20NTESW	36	40	45	76
FMP273	WHYC22NTESW	37	41	48	76
FMP274	WHYC24NTSW	36	41	49	76
FMP275	WHYC26NTS	38	43	49	72
FMP276	RCYC2NTSW	43	43	44	67
FMP277	RCYC4NTS	38	44	54	67
FMP278	RCYC6NTS	38	44	54	68
FMP279	RCYC8NTESW	38	44	54	68
FMP280	RCYC10NTESW	46	52	64	68
FMP281	RCYC12NTESW	44	52	58	67
FMP282	RCYC14NTESW	39	47	57	67
FMP283	RCYC16NTESW	38	40	44	67
FMP284	RCYC18NTESW	36	45	54	67
FMP285	RCYC20NTESW	35	38	45	67
FMP286	RCYC22NTESW	36	42	49	67
FMP287	RCYC24NTES	36	38	43	67
FMP288	RCYC24NTW	36	38	43	67

Public forest estate (England, Scotland and Wales): Forest Management Practices involving clearcutting with thinning during the rotation

Note that three rotations are assigned for each FMP. Equal proportions of forest area within a stratum are assigned to each of the 3 rotations.

Forest management practice		Silvicultural operations with final harvesting – Thinning									
Index	Name of practice	Initial thinning		Main thinnings			Late-rotation thinnings			Final cutting	
		Age (yrs)	% biomass removals	Age of first (yrs)	No. (5 yr cycle)	% biomass removals	Age of first (yrs)	No. (5 yr cycle)	% biomass removals	Age (years)	% biomass removals
ID	Name	IT Age	IT %BR	MT Age	MT cyc.	MT %BR	LRT Age	LRT Cyc.	LRT %BR	FC Age	FC %BR

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP289	NSYC2THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	42	50	60	67
FMP290	NSYC2THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	46	57	68	67
FMP291	NSYC2THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	42	53	64	67
FMP292	NSYC4THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	42	50	60	67
FMP293	NSYC4THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	51	61	75	67
FMP294	NSYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	44	51	60	67
FMP295	NSYC6THE	-	0	35	7	6.1	10	16	70	34	0.1	1.1	5.2	49	58	63	66
FMP296	NSYC6THS	-	0	35	7	6.1	10	16	70	34	0.1	1.1	5.2	50	58	70	66
FMP297	NSYC6THW	-	0	35	7	6.1	10	16	70	34	0.1	1.1	5.2	45	49	59	66
FMP298	NSYC8THE	-	0	31	8	5.9	10	17	71	45	0.4	1.4	4.5	43	52	63	66
FMP299	NSYC8THS	-	0	31	8	5.9	10	17	71	45	0.4	1.4	4.5	47	56	65	66

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP300	NSYC8THW	-	0	31	8	5.9	10	17	71	45	0.4	1.4	4.5	50	59	67	66
FMP301	NSYC10THE	-	0	28	8	6.3	11	20	68	46	0.3	1.4	5.1	44	50	57	66
FMP302	NSYC10THS	-	0	28	8	6.3	11	20	68	46	0.3	1.4	5.1	46	53	63	66
FMP303	NSYC10THW	-	0	28	8	6.3	11	20	68	46	0.3	1.4	5.1	48	58	66	66
FMP304	NSYC12THE	-	0	26	8	6.6	12	22	66	46	0.8	1.8	5.6	42	54	61	66
FMP305	NSYC12THS	-	0	26	8	6.6	12	22	66	46	0.8	1.8	5.6	45	51	58	66
FMP306	NSYC12THW	-	0	26	8	6.6	12	22	66	46	0.8	1.8	5.6	46	52	61	66
FMP307	NSYC14THE	-	0	24	9	6.5	12	24	69	45	0.5	1.6	5.0	40	51	57	66
FMP308	NSYC14THS	-	0	24	9	6.5	12	24	69	45	0.5	1.6	5.0	44	50	56	66
FMP309	NSYC14THW	-	0	24	9	6.5	12	24	69	45	0.5	1.6	5.0	48	53	59	66
FMP310	NSYC16THE	-	0	23	8	7.1	13	25	63	47	0.2	1.4	6.1	37	45	54	66
FMP311	NSYC16THS	-	0	23	8	7.1	13	25	63	47	0.2	1.4	6.1	42	49	56	66

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP312	NSYC16THW	-	0	23	8	7.1	13	25	63	47	0.2	1.4	6.1	41	50	55	66
FMP313	NSYC18THE	-	0	22	8	7.3	13	26	62	47	0.2	1.4	6.3	37	41	48	66
FMP314	NSYC18THS	-	0	22	8	7.3	13	26	62	47	0.2	1.4	6.3	40	49	54	66
FMP315	NSYC18THW	-	0	22	8	7.3	13	26	62	47	0.2	1.4	6.3	42	47	54	66
FMP316	NSYC20THE	-	0	21	8	7.5	14	28	61	47	0.1	1.3	6.6	36	39	45	66
FMP317	NSYC20THS	-	0	21	8	7.5	14	28	61	47	0.1	1.3	6.6	40	49	54	66
FMP318	NSYC20THW	-	0	21	8	7.5	14	28	61	47	0.1	1.3	6.6	37	43	47	66
FMP319	NSYC22THE	-	0	20	8	7.8	15	30	60	44	0.1	1.2	6.8	30	38	42	66
FMP320	NSYC22THS	-	0	20	8	7.8	15	30	60	44	0.1	1.2	6.8	46	53	55	66
FMP321	NSYC22THW	-	0	20	8	7.8	15	30	60	44	0.1	1.2	6.8	37	44	50	66
FMP322	NSYC24THE	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	42	50	60	72
FMP323	NSYC24THW	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	44	51	60	72

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP324	NSYC30THE	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	42	50	60	72
FMP325	SSYC2THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	51	56	73	67
FMP326	SSYC2THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	40	47	55	67
FMP327	SSYC2THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	35	43	55	67
FMP328	SSYC4THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	54	60	60	67
FMP329	SSYC4THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	41	50	53	67
FMP330	SSYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	31	35	46	67
FMP331	SSYC6THE	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	48	52	61	68
FMP332	SSYC6THS	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	39	51	59	68
FMP333	SSYC6THW	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	40	45	60	68
FMP334	SSYC8THE	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	41	50	56	68
FMP335	SSYC8THS	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	37	48	59	68

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP336	SSYC8THW	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	40	48	56	68
FMP337	SSYC10THE	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	43	50	58	68
FMP338	SSYC10THS	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	41	51	57	68
FMP339	SSYC10THW	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	39	47	55	68
FMP340	SSYC12THE	-	0	24	6	8.0	13	22	54	44	0.1	1.2	6.2	42	50	58	68
FMP341	SSYC12THS	-	0	24	6	8.0	13	22	54	44	0.1	1.2	6.2	37	48	55	68
FMP342	SSYC12THW	-	0	24	6	8.0	13	22	54	44	0.1	1.2	6.2	39	47	54	68
FMP343	SSYC14THE	-	0	22	6	8.5	15	25	52	38	0.1	1.3	6.7	37	49	55	68
FMP344	SSYC14THS	-	0	22	6	8.5	15	25	52	38	0.1	1.3	6.7	36	46	53	68
FMP345	SSYC14THW	-	0	22	6	8.5	15	25	52	38	0.1	1.3	6.7	38	44	52	68
FMP346	SSYC16THE	-	0	21	6	8.7	15	26	51	41	0.1	1.3	6.8	34	40	52	68
FMP347	SSYC16THS	-	0	21	6	8.7	15	26	51	41	0.1	1.3	6.8	35	43	51	68

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP348	SSYC16THW	-	0	21	6	8.7	15	26	51	41	0.1	1.3	6.8	38	45	53	68
FMP349	SSYC18THE	-	0	20	5	10	17	26	45	42	0.1	1.5	8.8	32	37	48	68
FMP350	SSYC18THS	-	0	20	5	10	17	26	45	42	0.1	1.5	8.8	32	38	47	68
FMP351	SSYC18THW	-	0	20	5	10	17	26	45	42	0.1	1.5	8.8	34	40	48	68
FMP352	SSYC20THE	-	0	19	6	9.2	16	27	49	40	0.1	1.3	7.1	30	33	41	68
FMP353	SSYC20THS	-	0	19	6	9.2	16	27	49	40	0.1	1.3	7.1	31	35	44	68
FMP354	SSYC20THW	-	0	19	6	9.2	16	27	49	40	0.1	1.3	7.1	33	39	45	68
FMP355	SSYC22THE	-	0	18	6	9.5	16	28	48	39	0.1	1.4	7.3	30	33	37	68
FMP356	SSYC22THS	-	0	18	6	9.5	16	28	48	39	0.1	1.4	7.3	30	35	42	68
FMP357	SSYC22THW	-	0	18	6	9.5	16	28	48	39	0.1	1.4	7.3	30	37	46	68
FMP358	SSYC24THE	-	0	18	5	10	17	26	43	44	0.1	1.4	8.6	32	37	42	68
FMP359	SSYC24THS	-	0	18	5	10	17	26	43	44	0.1	1.4	8.6	27	34	42	68

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP360	SSYC24THW	-	0	18	5	10	17	26	43	44	0.1	1.4	8.6	31	35	39	68
FMP361	SSYC26THE	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	36	47	56	72
FMP362	SSYC26THS	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	22	31	36	72
FMP363	SSYC26THW	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	37	44	52	72
FMP364	SSYC28THE	-	0	20	4	12	19	29	40	35	0.1	1.6	10.2	36	47	56	72
FMP365	SSYC28THS	-	0	20	4	12	19	29	40	35	0.1	1.6	10.2	34	43	52	72
FMP366	SSYC30THS	-	0	19	5	11	19	32	44	38	0.1	1.4	8.0	34	43	52	72
FMP367	SPYC2THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	52	52	53	67
FMP368	SPYC2THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	45	51	61	67
FMP369	SPYC2THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	47	52	63	67
FMP370	SPYC4THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	48	61	73	67
FMP371	SPYC4THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	48	60	73	67

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP372	SPYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	52	54	68	67
FMP373	SPYC6THE	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	57	68	75	67
FMP374	SPYC6THS	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	45	53	65	67
FMP375	SPYC6THW	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	59	63	66	67
FMP376	SPYC8THE	-	0	29	9	5.9	10	18	74	16	0.1	1.5	4.9	49	66	75	67
FMP377	SPYC8THS	-	0	29	9	5.9	10	18	74	16	0.1	1.5	4.9	44	52	63	67
FMP378	SPYC8THW	-	0	29	9	5.9	10	18	74	16	0.1	1.5	4.9	46	51	60	67
FMP379	SPYC10THE	-	0	25	8	6.9	12	21	65	20	0.1	1.8	6.1	52	65	74	67
FMP380	SPYC10THS	-	0	25	8	6.9	12	21	65	20	0.1	1.8	6.1	44	50	58	67
FMP381	SPYC10THW	-	0	25	8	6.9	12	21	65	20	0.1	1.8	6.1	46	51	61	67
FMP382	SPYC12THE	-	0	23	8	7.2	12	21	63	25	0.1	1.6	6.1	48	58	70	67
FMP383	SPYC12THS	-	0	23	8	7.2	12	21	63	25	0.1	1.6	6.1	47	50	54	67

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP384	SPYC12THW	-	0	23	8	7.2	12	21	63	25	0.1	1.6	6.1	44	51	55	67
FMP385	SPYC14THE	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	43	49	59	67
FMP386	SPYC14THS	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	47	49	52	67
FMP387	SPYC14THW	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	47	52	63	67
FMP388	SPYC16THE	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	44	53	58	73
FMP389	SPYC16THS	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	45	51	61	73
FMP390	SPYC16THW	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	47	52	63	73
FMP391	SPYC18THE	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	48	61	73	73
FMP392	SPYC18THS	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	45	51	61	73
FMP393	SPYC20THW	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	47	52	63	73
FMP394	CPYC2THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	52	55	57	67
FMP395	CPYC2THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	46	50	63	67

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP396	CPYC4THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	43	52	61	67
FMP397	CPYC4THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	46	50	63	67
FMP398	CPYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	41	46	55	67
FMP399	CPYC6THE	-	0	33	6	6.6	8.8	12	63	47	0.5	1.7	5.3	43	52	61	73
FMP400	CPYC6THS	-	0	33	6	6.6	8.8	12	63	47	0.5	1.7	5.3	50	50	54	73
FMP401	CPYC6THW	-	0	33	6	6.6	8.8	12	63	47	0.5	1.7	5.3	41	46	55	73
FMP402	CPYC8THE	-	0	28	6	7.6	10	15	58	48	0.7	1.8	6.1	45	55	61	73
FMP403	CPYC8THS	-	0	28	6	7.6	10	15	58	48	0.7	1.8	6.1	48	63	65	73
FMP404	CPYC8THW	-	0	28	6	7.6	10	15	58	48	0.7	1.8	6.1	41	46	55	73
FMP405	CPYC10THE	-	0	25	6	8.3	12	17	55	48	0.8	2.0	6.8	43	55	64	73
FMP406	CPYC10THS	-	0	25	6	8.3	12	17	55	48	0.8	2.0	6.8	47	46	46	73
FMP407	CPYC10THW	-	0	25	6	8.3	12	17	55	48	0.8	2.0	6.8	45	49	66	73

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP408	CPYC12THE	-	0	23	6	8.8	13	19	53	49	0.8	2.0	7.1	45	52	61	73
FMP409	CPYC12THS	-	0	23	6	8.8	13	19	53	49	0.8	2.0	7.1	46	48	48	73
FMP410	CPYC12THW	-	0	23	6	8.8	13	19	53	49	0.8	2.0	7.1	40	47	53	73
FMP411	CPYC14THE	-	0	21	6	9.5	14	22	51	49	1.8	2.5	7.8	44	52	63	73
FMP412	CPYC14THS	-	0	21	6	9.5	14	22	51	49	1.8	2.5	7.8	46	50	63	73
FMP413	CPYC14THW	-	0	21	6	9.5	14	22	51	49	1.8	2.5	7.8	39	43	45	73
FMP414	CPYC16THE	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	44	51	59	73
FMP415	CPYC16THW	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	43	43	44	73
FMP416	CPYC18THE	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	34	46	56	73
FMP417	CPYC18THW	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	41	46	55	73
FMP418	CPYC20THE	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	34	39	46	73
FMP419	CPYC20THW	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	41	46	55	73

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP420	CPYC22THE	-	0	21	5	10	17	28	46	28	0.1	1.5	7.4	43	52	61	72
FMP421	CPYC22THW	-	0	21	5	10	17	28	46	28	0.1	1.5	7.4	41	46	55	72
FMP422	LPYC2THE	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	33	33	36	67
FMP423	LPYC2THS	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	37	38	45	67
FMP424	LPYC2THW	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	36	43	49	67
FMP425	LPYC4THE	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	39	48	65	67
FMP426	LPYC4THS	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	42	48	57	67
FMP427	LPYC4THW	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	32	42	49	67
FMP428	LPYC6THE	-	0	31	7	6.0	7.9	11	66	46	1.6	2.3	4.8	38	40	47	67
FMP429	LPYC6THS	-	0	31	7	6.0	7.9	11	66	46	1.6	2.3	4.8	41	45	51	67
FMP430	LPYC6THW	-	0	31	7	6.0	7.9	11	66	46	1.6	2.3	4.8	42	45	49	67
FMP431	LPYC8THE	-	0	26	7	6.8	10	14	61	47	1.8	2.6	5.6	36	40	45	67

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP432	LPYC8THS	-	0	26	7	6.8	10	14	61	47	1.8	2.6	5.6	35	40	46	67
FMP433	LPYC8THW	-	0	26	7	6.8	10	14	61	47	1.8	2.6	5.6	39	45	50	67
FMP434	LPYC10THE	-	0	23	7	7.4	11	17	58	48	2.4	3.0	6.2	33	37	44	67
FMP435	LPYC10THS	-	0	23	7	7.4	11	17	58	48	2.4	3.0	6.2	34	36	44	67
FMP436	LPYC10THW	-	0	23	7	7.4	11	17	58	48	2.4	3.0	6.2	35	38	42	67
FMP437	LPYC12THE	-	0	21	7	7.9	12	19	56	48	2.2	2.9	6.6	31	40	49	67
FMP438	LPYC12THS	-	0	21	7	7.9	12	19	56	48	2.2	2.9	6.6	30	36	44	67
FMP439	LPYC12THW	-	0	21	7	7.9	12	19	56	48	2.2	2.9	6.6	34	35	38	67
FMP440	LPYC14THE	-	0	19	7	8.4	13	23	54	48	1.2	2.5	7.0	35	40	47	67
FMP441	LPYC14THS	-	0	19	7	8.4	13	23	54	48	1.2	2.5	7.0	35	41	48	67
FMP442	LPYC14THW	-	0	19	7	8.4	13	23	54	48	1.2	2.5	7.0	32	32	33	67
FMP443	LPYC16THE	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	35	40	47	73

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP444	LPYC16THS	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	35	41	48	73
FMP445	LPYC16THW	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	36	43	49	73
FMP446	LPYC18THE	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	35	40	47	73
FMP447	LPYC20THE	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	35	40	47	73
FMP448	LPYC20THS	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	35	41	48	73
FMP449	ELYC2THE	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	43	57	73	80
FMP450	ELYC2THS	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	43	52	63	80
FMP451	ELYC2THW	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	58	66	78	80
FMP452	ELYC4THE	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	73	76	77	80
FMP453	ELYC4THS	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	43	52	63	80
FMP454	ELYC4THW	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	58	66	78	80
FMP455	ELYC6THE	-	0	26	5	9.1	13	18	51	16	0.3	2.4	7.9	45	70	74	80

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP456	ELYC6THS	-	0	26	5	9.1	13	18	51	16	0.3	2.4	7.9	44	51	66	80
FMP457	ELYC6THW	-	0	26	5	9.1	13	18	51	16	0.3	2.4	7.9	75	77	77	80
FMP458	ELYC8THE	-	0	22	6	9.6	14	22	52	20	0.3	2.1	7.1	46	57	71	80
FMP459	ELYC8THS	-	0	22	6	9.6	14	22	52	20	0.3	2.1	7.1	42	53	65	80
FMP460	ELYC8THW	-	0	22	6	9.6	14	22	52	20	0.3	2.1	7.1	58	66	78	80
FMP461	ELYC10THE	-	0	20	5	11	16	24	45	27	0.2	2.3	9.2	46	56	63	80
FMP462	ELYC10THS	-	0	20	5	11	16	24	45	27	0.2	2.3	9.2	46	50	57	80
FMP463	ELYC10THW	-	0	20	5	11	16	24	45	27	0.2	2.3	9.2	58	66	78	80
FMP464	ELYC12THE	-	0	18	5	12	18	26	43	34	0.2	2.2	9.9	39	42	54	80
FMP465	ELYC12THS	-	0	18	5	12	18	26	43	34	0.2	2.2	9.9	43	52	63	80
FMP466	ELYC12THW	-	0	18	5	12	18	26	43	34	0.2	2.2	9.9	58	66	78	80
FMP467	ELYC14THE	-	0	14	6	12	20	34	44	46	4.7	10	76	43	57	73	76

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP468	ELYC14THS	-	0	14	6	12	20	34	44	46	4.7	10	76	43	52	63	76
FMP469	ELYC14THW	-	0	14	6	12	20	34	44	46	4.7	10	76	58	66	78	76
FMP470	ELYC16THE	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	43	57	73	73
FMP471	ELYC16THW	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	58	66	78	73
FMP472	ELYC18THE	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	43	57	73	73
FMP473	JLYC2THE	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	43	48	53	76
FMP474	JLYC2THS	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	39	47	52	76
FMP475	JLYC2THW	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	42	47	53	76
FMP476	JLYC4THE	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	42	45	46	76
FMP477	JLYC4THS	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	34	44	49	76
FMP478	JLYC4THW	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	42	47	53	76
FMP479	JLYC6THE	-	0	22	5	9.7	14	21	47	50	2.7	3.6	7.9	41	48	55	76

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP480	JLYC6THS	-	0	22	5	9.7	14	21	47	50	2.7	3.6	7.9	39	47	52	76
FMP481	JLYC6THW	-	0	22	5	9.7	14	21	47	50	2.7	3.6	7.9	35	43	53	76
FMP482	JLYC8THE	-	0	19	6	10	15	25	49	49	3.3	4.5	8.6	45	49	54	76
FMP483	JLYC8THS	-	0	19	6	10	15	25	49	49	3.3	4.5	8.6	42	48	52	76
FMP484	JLYC8THW	-	0	19	6	10	15	25	49	49	3.3	4.5	8.6	40	47	54	76
FMP485	JLYC10THE	-	0	17	5	12	18	28	42	45	4.2	10	76	45	49	55	76
FMP486	JLYC10THS	-	0	17	5	12	18	28	42	45	4.2	10	76	42	48	51	76
FMP487	JLYC10THW	-	0	17	5	12	18	28	42	45	4.2	10	76	46	50	56	76
FMP488	JLYC12THE	-	0	15	5	13	20	33	40	42	4.6	10	76	38	45	50	76
FMP489	JLYC12THS	-	0	15	5	13	20	33	40	42	4.6	10	76	44	48	52	76
FMP490	JLYC12THW	-	0	15	5	13	20	33	40	42	4.6	10	76	40	45	50	76
FMP491	JLYC14THE	-	0	14	6	12	20	34	44	46	4.7	10	76	42	48	53	76

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP492	JLYC14THS	-	0	14	6	12	20	34	44	46	4.7	10	76	40	48	51	76
FMP493	JLYC14THW	-	0	14	6	12	20	34	44	46	4.7	10	76	41	46	50	76
FMP494	JLYC16THE	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	43	48	53	73
FMP495	JLYC16THS	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	41	48	52	73
FMP496	JLYC16THW	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	43	44	49	73
FMP497	JLYC18THE	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	43	48	53	73
FMP498	JLYC20THE	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	43	48	53	73
FMP499	JLYC24THW	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	42	47	53	72
FMP500	DFYC2THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	37	43	51	67
FMP501	DFYC2THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	41	48	53	67
FMP502	DFYC2THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	40	47	53	67
FMP503	DFYC4THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	37	43	51	67

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP504	DFYC4THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	41	48	53	67
FMP505	DFYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	40	47	53	67
FMP506	DFYC6THS	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	41	48	53	67
FMP507	DFYC6THW	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	40	47	53	67
FMP508	DFYC8THE	-	0	28	7	6.8	11	18	63	47	0.4	1.5	5.3	37	43	51	71
FMP509	DFYC8THS	-	0	28	7	6.8	11	18	63	47	0.4	1.5	5.3	44	50	51	71
FMP510	DFYC8THW	-	0	28	7	6.8	11	18	63	47	0.4	1.5	5.3	40	47	53	71
FMP511	DFYC10THE	-	0	25	6	8.0	12	20	55	48	1.0	2.1	7.1	43	48	54	71
FMP512	DFYC10THS	-	0	25	6	8.0	12	20	55	48	1.0	2.1	7.1	42	49	54	71
FMP513	DFYC10THW	-	0	25	6	8.0	12	20	55	48	1.0	2.1	7.1	46	59	62	71
FMP514	DFYC12THE	-	0	23	7	7.9	12	21	58	48	0.4	1.6	6.0	39	46	51	71
FMP515	DFYC12THS	-	0	23	7	7.9	12	21	58	48	0.4	1.6	6.0	42	47	53	71

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP516	DFYC12THW	-	0	23	7	7.9	12	21	58	48	0.4	1.6	6.0	37	49	54	71
FMP517	DFYC14THE	-	0	21	6	9.1	15	24	51	49	0.6	1.9	8.0	35	42	50	71
FMP518	DFYC14THS	-	0	21	6	9.1	15	24	51	49	0.6	1.9	8.0	43	48	52	71
FMP519	DFYC14THW	-	0	21	6	9.1	15	24	51	49	0.6	1.9	8.0	44	48	51	71
FMP520	DFYC16THE	-	0	19	7	9.0	15	28	54	48	0.3	1.6	6.9	36	41	47	71
FMP521	DFYC16THS	-	0	19	7	9.0	15	28	54	48	0.3	1.6	6.9	38	45	51	71
FMP522	DFYC16THW	-	0	19	7	9.0	15	28	54	48	0.3	1.6	6.9	39	44	49	71
FMP523	DFYC18THE	-	0	18	7	9.3	16	30	53	49	0.4	1.7	7.0	35	41	49	71
FMP524	DFYC18THS	-	0	18	7	9.3	16	30	53	49	0.4	1.7	7.0	42	48	63	71
FMP525	DFYC18THW	-	0	18	7	9.3	16	30	53	49	0.4	1.7	7.0	36	42	50	71
FMP526	DFYC20THE	-	0	17	7	9.6	17	32	52	49	0.3	1.6	7.2	35	39	57	71
FMP527	DFYC20THS	-	0	17	7	9.6	17	32	52	49	0.3	1.6	7.2	41	48	53	71

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP528	DFYC20THW	-	0	17	7	9.6	17	32	52	49	0.3	1.6	7.2	37	51	53	71
FMP529	DFYC22THE	-	0	17	6	10	18	30	47	50	0.5	1.9	8.8	34	41	45	71
FMP530	DFYC22THS	-	0	17	6	10	18	30	47	50	0.5	1.9	8.8	41	48	53	71
FMP531	DFYC22THW	-	0	17	6	10	18	30	47	50	0.5	1.9	8.8	40	46	63	71
FMP532	DFYC24THE	-	0	16	6	11	19	34	46	50	1.0	2.3	9.2	39	45	49	71
FMP533	DFYC24THS	-	0	16	6	11	19	34	46	50	1.0	2.3	9.2	44	47	46	71
FMP534	DFYC24THW	-	0	16	6	11	19	34	46	50	1.0	2.3	9.2	40	47	53	71
FMP535	DFYC26THE	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	37	43	51	72
FMP536	GFYC2THESW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	35	42	47	67
FMP537	GFYC4THSW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	35	42	47	67
FMP538	GFYC6THE	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	35	42	47	68
FMP539	GFYC8THE	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	35	42	47	68

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP540	GFYC10THESW	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	35	42	47	68
FMP541	GFYC12THESW	-	0	27	5	8.2	12	19	52	18	0.1	1.6	6.0	35	42	47	72
FMP542	GFYC14THESW	-	0	25	4	10	15	21	45	21	0.1	1.9	8.5	40	43	48	72
FMP543	GFYC16THESW	-	0	24	5	9.0	14	22	49	21	0.1	1.6	6.6	31	38	47	72
FMP544	GFYC18THESW	-	0	23	5	9.3	15	23	48	23	0.1	1.6	6.8	37	43	49	72
FMP545	GFYC20THESW	-	0	22	5	9.7	16	25	47	25	0.1	1.5	7.1	38	44	47	72
FMP546	GFYC22THESW	-	0	21	5	10	17	28	46	28	0.1	1.5	7.4	37	42	46	72
FMP547	GFYC24THESW	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	35	41	43	72
FMP548	GFYC26THESW	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	35	42	47	72
FMP549	GFYC28THESW	-	0	20	4	12	19	29	40	35	0.1	1.6	10	33	35	36	72
FMP550	GFYC30THESW	-	0	19	5	11	19	32	44	38	0.1	1.4	8.0	35	42	47	72
FMP551	NFYC2THSW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	37	43	48	67

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP552	NFYC4THSW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	37	43	48	67
FMP553	NFYC6THSW	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	37	43	48	68
FMP554	NFYC8THESW	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	37	43	48	68
FMP555	NFYC10THESW	-	0	34	7	5.9	8.0	12	69	45	0.8	1.8	4.7	35	39	45	70
FMP556	NFYC12THESW	-	0	31	7	6.3	8.9	13	66	46	1.8	2.4	4.8	35	40	45	70
FMP557	NFYC14THESW	-	0	29	7	6.7	10	15	64	46	1.9	2.5	5.4	36	42	48	70
FMP558	NFYC16THESW	-	0	27	7	7.1	10	16	62	47	1.8	2.6	5.7	39	44	49	70
FMP559	NFYC18THESW	-	0	25	7	7.5	11	18	60	47	2.5	3.0	6.1	38	42	46	70
FMP560	NFYC20THESW	-	0	23	7	8.0	13	21	58	48	2.6	3.2	6.8	37	45	48	70
FMP561	NFYC22THESW	-	0	22	7	8.2	13	22	57	48	1.9	2.9	7.0	38	42	47	70
FMP562	NFYC24THSW	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	37	43	48	72
FMP563	WHYC2THESW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	38	43	49	67

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP564	WHYC4THESW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	38	43	49	67
FMP565	WHYC6THESW	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	38	43	49	68
FMP566	WHYC8THES	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	38	43	49	68
FMP567	WHYC10THESW	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	43	51	61	68
FMP568	WHYC12THESW	-	0	28	8	7.1	12	23	68	46	1.1	2.4	6.0	41	46	52	76
FMP569	WHYC14THESW	-	0	26	7	7.9	13	23	61	47	3.1	3.6	6.9	40	45	50	76
FMP570	WHYC16THESW	-	0	24	8	7.7	13	23	64	46	1.4	2.7	6.4	39	43	49	76
FMP571	WHYC18THESW	-	0	22	7	8.8	14	26	57	48	1.1	2.6	7.6	37	43	48	76
FMP572	WHYC20THESW	-	0	21	6	9.7	15	25	51	49	2.2	3.3	8.8	36	40	45	76
FMP573	WHYC22THESW	-	0	20	6	10	16	25	50	49	1.9	3.3	8.8	37	41	48	76
FMP574	WHYC24THESW	-	0	19	6	10	16	26	49	49	1.4	3.0	8.9	36	41	49	76
FMP575	WHYC26THSW	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	38	43	49	72

ID	Name	IT Age	IT %BR	MT Age	MT cyc	MT % BR			LRT Age	LRT cyc	LRT % BR			FC Age (years)			FC % BR
						min	mid	max			min	mid	max	low	mid	high	
FMP576	RCYC2THEW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	43	43	44	67
FMP577	RCYC4THEW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	38	44	54	67
FMP578	RCYC6THESW	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	38	44	54	68
FMP579	RCYC8THESW	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	38	44	54	68
FMP580	RCYC10THESW	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	46	52	64	68
FMP581	RCYC12THESW	-	0	30	7	6.4	9.5	15	65	46	1.1	1.9	4.8	44	52	58	67
FMP582	RCYC14THESW	-	0	28	7	6.7	10	16	63	47	0.4	1.5	5.4	39	47	57	67
FMP583	RCYC16THESW	-	0	26	7	7.1	11	18	61	47	0.6	1.8	5.9	38	40	44	67
FMP584	RCYC18THESW	-	0	24	7	7.6	12	20	59	47	0.7	2.0	6.1	36	45	54	67
FMP585	RCYC20THESW	-	0	23	7	7.8	12	21	58	48	0.7	2.0	6.2	35	38	45	67
FMP586	RCYC22THESW	-	0	22	6	8.7	13	22	52	49	1.1	2.3	7.5	36	42	49	67
FMP587	RCYC24THESW	-	0	21	6	9.0	14	23	51	49	1.0	2.3	7.6	36	38	43	67

Public forest estate (England, Scotland and Wales): Forest Management Practices involving “continuous cover”, i.e. continuous thinning and forest regeneration without clearcutting

Forest management practice		Silvicultural operations without final harvesting		
Index	Name of practice	% biomass removals		
		Min	Mean	Max
FMP588	NSYC2CCESW	3.2	9.6	62
FMP589	NSYC4CCESW	3.2	9.6	62
FMP590	NSYC6CCESW	4.5	8.9	27
FMP591	NSYC8CCESW	4.8	8.7	19
FMP592	NSYC10CCESW	5.2	9.2	18
FMP593	NSYC12CCESW	5.4	9.3	15
FMP594	NSYC14CCESW	5.7	9.9	17
FMP595	NSYC16CCESW	5.9	10	16
FMP596	NSYC18CCESW	6.2	10	15
FMP597	NSYC20CCESW	3.5	11	16
FMP598	NSYC22CCESW	3.7	11	16
FMP599	NSYC24CCESW	0.4	11	15
FMP600	NSYC26CCS	7.6	12	12
FMP601	NSYC30CCE	7.8	12	15
FMP602	SSYC2CCESW	4.3	9.8	55
FMP603	SSYC4CCESW	4.3	9.8	55
FMP604	SSYC6CCESW	5.3	9.4	18
FMP605	SSYC8CCESW	5.8	10	16
FMP606	SSYC10CCESW	6.3	10	15
FMP607	SSYC12CCESW	6.7	11	17
FMP608	SSYC14CCESW	7.1	11	15
FMP609	SSYC16CCESW	1.7	12	16
FMP610	SSYC18CCESW	5.4	12	14
FMP611	SSYC20CCESW	8.0	12	14
FMP612	SSYC22CCESW	5.7	12	15
FMP613	SSYC24CCESW	8.4	12	13
FMP614	SSYC26CCES	7.8	12	13
FMP615	SSYC28CCE	7.9	12	13
FMP616	SPYC2CCESW	3.2	9.8	63

Forest management practice		Silvicultural operations without final harvesting		
Index	Name of practice	% biomass removals		
		Min	Mean	Max
FMP617	SPYC4CCESW	3.2	9.8	63
FMP618	SPYC6CCESW	4.8	9.1	20
FMP619	SPYC8CCESW	5.3	9.3	15
FMP620	SPYC10CCESW	5.7	9.8	13
FMP621	SPYC12CCESW	0.5	10	17
FMP622	SPYC14CCESW	2.9	10	15
FMP623	SPYC16CCESW	7.4	11	12
FMP624	SPYC18CCES	4.0	11	15
FMP625	SPYC20CCW	7.9	12	13
FMP626	CPYC2CCESW	3.5	11	68
FMP627	CPYC4CCESW	3.5	11	68
FMP628	CPYC6CCESW	5.7	9.4	16
FMP629	CPYC8CCESW	6.4	9.8	13
FMP630	CPYC10CCESW	6.9	10	12
FMP631	CPYC12CCESW	7.4	11	14
FMP632	CPYC14CCESW	1.0	11	15
FMP633	CPYC16CCESW	8.1	12	13
FMP634	CPYC18CCESW	4.4	12	17
FMP635	CPYC20CCEW	8.6	13	14
FMP636	CPYC22CCEW	3.4	13	16
FMP637	CPYC24CCE	0.4	13	17
FMP638	LPYC2CCSW	4.2	7.5	22
FMP639	LPYC4CCESW	4.2	7.5	22
FMP640	LPYC6CCESW	1.4	8.1	15
FMP641	LPYC8CCESW	5.3	8.6	12
FMP642	LPYC10CCESW	6.2	9.1	12
FMP643	LPYC12CCESW	6.7	9.6	11
FMP644	LPYC14CCESW	5.7	10	14
FMP645	LPYC16CCEW	7.4	11	12
FMP646	LPYC18CCE	4.0	11	15
FMP647	LPYC20CCEW	7.9	12	13
FMP648	ELYC2CCESW	4.2	11	18
FMP649	ELYC4CCESW	4.2	11	18
FMP650	ELYC6CCESW	7.7	11	14
FMP651	ELYC8CCESW	4.3	12	16
FMP652	ELYC10CCESW	9.2	13	13

Forest management practice		Silvicultural operations without final harvesting		
Index	Name of practice	% biomass removals		
		Min	Mean	Max
FMP653	ELYC12CCESW	4.3	13	16
FMP654	ELYC14CCESW	11	16	16
FMP655	ELYC16CCESW	5.0	13	16
FMP656	ELYC18CCES	9.2	13	14
FMP657	JLYC2CCESW	7.3	11	13
FMP658	JLYC4CCESW	7.3	11	13
FMP659	JLYC6CCESW	4.3	12	14
FMP660	JLYC8CCESW	9.1	13	15
FMP661	JLYC10CCESW	2.0	13	15
FMP662	JLYC12CCESW	10	14	13
FMP663	JLYC14CCESW	11	15	15
FMP664	JLYC16CCESW	4.8	12	15
FMP665	JLYC18CCES	8.8	13	13
FMP666	JLYC20CCES	9.0	13	16
FMP667	JLYC24CCW	0.4	13	17
FMP668	DFYC2CCESW	4.5	10	57
FMP669	DFYC4CCESW	4.5	10	57
FMP670	DFYC6CCESW	5.3	10	25
FMP671	DFYC8CCESW	6.1	9.9	15
FMP672	DFYC10CCESW	6.6	10	14
FMP673	DFYC12CCESW	6.9	11	14
FMP674	DFYC14CCESW	1.0	11	15
FMP675	DFYC16CCESW	7.7	12	16
FMP676	DFYC18CCESW	2.1	12	17
FMP677	DFYC20CCESW	8.3	13	15
FMP678	DFYC22CCESW	3.2	13	16
FMP679	DFYC24CCESW	8.8	13	14
FMP680	DFYC26CCES	8.1	12	13
FMP681	GFYC2CCESW	4.6	10	58
FMP682	GFYC4CCEW	4.6	10	58
FMP683	GFYC6CCS	5.6	10	20
FMP684	GFYC8CCES	6.1	11	17
FMP685	GFYC10CCESW	6.6	11	16
FMP686	GFYC12CCESW	6.7	11	15
FMP687	GFYC14CCESW	2.9	11	16
FMP688	GFYC16CCESW	7.3	12	15

Forest management practice		Silvicultural operations without final harvesting		
Index	Name of practice	% biomass removals		
		Min	Mean	Max
FMP689	GFYC18CCESW	7.5	12	16
FMP690	GFYC20CCESW	6.5	12	16
FMP691	GFYC22CCESW	3.4	12	16
FMP692	GFYC24CCESW	0.4	12	16
FMP693	GFYC26CCESW	8.2	13	13
FMP694	GFYC28CCESW	8.3	13	13
FMP695	GFYC30CCEW	8.5	13	16
FMP696	NFYC2CCESW	3.4	10	66
FMP697	NFYC4CCESW	3.4	10	66
FMP698	NFYC6CCES	5.5	9.7	19
FMP699	NFYC8CCESW	6.0	10	17
FMP700	NFYC10CCES	5.0	8.2	16
FMP701	NFYC12CCESW	5.4	8.5	15
FMP702	NFYC14CCESW	5.6	8.8	14
FMP703	NFYC16CCESW	5.9	9.1	13
FMP704	NFYC18CCESW	4.4	9.6	14
FMP705	NFYC20CCESW	6.5	10	14
FMP706	NFYC22CCESW	6.6	10	14
FMP707	NFYC24CCSW	0.4	12	16
FMP708	WHYC2CCESW	3.7	11	71
FMP709	WHYC4CCES	3.7	11	71
FMP710	WHYC6CCESW	5.9	10	21
FMP711	WHYC8CCESW	6.5	11	18
FMP712	WHYC10CCESW	7.0	12	17
FMP713	WHYC12CCESW	5.6	9.7	20
FMP714	WHYC14CCESW	2.8	10	18
FMP715	WHYC16CCESW	6.4	10	18
FMP716	WHYC18CCESW	6.0	11	17
FMP717	WHYC20CCESW	7.3	11	14
FMP718	WHYC22CCEW	4.9	11	14
FMP719	WHYC24CCEW	3.4	12	17
FMP720	WHYC26CCW	8.7	13	14
FMP721	RCYC2CCESW	5.5	8.9	6.9
FMP722	RCYC4CCESW	5.5	8.9	6.9
FMP723	RCYC6CCESW	5.5	8.9	6.9
FMP724	RCYC8CCESW	5.5	8.9	16

Forest management practice		Silvicultural operations without final harvesting		
Index	Name of practice	% biomass removals		
		Min	Mean	Max
FMP725	RCYC10CCESW	5.5	8.9	16
FMP726	RCYC12CCESW	5.5	8.9	16
FMP727	RCYC14CCESW	5.8	9.1	14
FMP728	RCYC16CCESW	6.1	9.4	13
FMP729	RCYC18CCESW	0.8	10	18
FMP730	RCYC20CCEW	0.8	10	17
FMP731	RCYC22CCEW	0.2	11	16
FMP732	RCYC24CCEW	4.6	11	14
FMP733	OKYC2CCESW	4.6	8.1	21
FMP734	OKYC4CCESW	4.6	8.1	21
FMP735	OKYC6CCESW	5.4	8.5	14
FMP736	OKYC8CCESW	6.1	9.4	14
FMP737	OKYC10CCESW	6.2	11	15
FMP738	OKYC12CCESW	0.5	11	19
FMP739	OKYC14CCESW	3.1	11	16
FMP740	OKYC16CCESW	6.5	11	17
FMP741	OKYC20CCW	3.8	12	18
FMP742	AHYC2CCESW	7.6	11	17
FMP743	AHYC4CCESW	7.6	11	17
FMP744	AHYC6CCESW	8.2	12	12
FMP745	AHYC8CCESW	7.4	13	25
FMP746	AHYC10CCESW	8.9	13	24
FMP747	AHYC12CCESW	11	15	35
FMP748	AHYC14CCEW	3.1	11	16
FMP749	AHYC16CCES	6.3	11	17
FMP750	AHYC18CCW	6.6	11	16
FMP751	AHYC20CCSW	3.7	11	17
FMP752	BEYC2CCESW	4.0	8.2	33
FMP753	BEYC4CCESW	4.0	8.2	33
FMP754	BEYC6CCESW	4.5	8.1	20
FMP755	BEYC8CCESW	5.0	8.5	16
FMP756	BEYC10CCESW	5.4	8.8	18
FMP757	BEYC12CCESW	0.5	11	19
FMP758	BEYC14CCES	3.1	11	16
FMP759	BEYC16CCW	6.4	11	17
FMP760	BEYC18CCS	6.7	11	16

Forest management practice		Silvicultural operations without final harvesting		
Index	Name of practice	% biomass removals		
		Min	Mean	Max
FMP761	BIYC2CCESW	7.6	11	17
FMP762	BIYC4CCESW	7.6	11	17
FMP763	BIYC6CCESW	8.2	12	12
FMP764	BIYC8CCESW	7.4	13	25
FMP765	BIYC10CCESW	8.9	13	24
FMP766	BIYC12CCESW	11	15	35
FMP767	BIYC14CCESW	3.1	11	16
FMP768	BIYC16CCESW	6.3	11	17
FMP769	BIYC18CCESW	6.6	11	16
FMP770	BIYC20CCW	3.7	11	17
FMP771	BIYC22CCS	3.9	12	17
FMP772	SYYC2CCESW	7.3	11	17
FMP773	SYYC4CCESW	7.3	11	17
FMP774	SYYC6CCESW	7.9	12	12
FMP775	SYYC8CCESW	7.1	12	24
FMP776	SYYC10CCESW	8.6	12	23
FMP777	SYYC12CCESW	10	14	34
FMP778	SYYC14CCESW	2.9	11	15
FMP779	SYYC16CCESW	6.1	10	16
FMP780	SYYC18CCESW	6.4	11	15
FMP781	SYYC20CCESW	3.6	11	17
FMP782	SYYC22CCE	3.8	11	16
FMP783	SYYC24CCSW	0.4	12	16
FMP784	POYC2CCESW	7.1	10	16
FMP785	POYC4CCESW	7.1	10	16
FMP786	POYC6CCESW	7.7	12	11
FMP787	POYC8CCESW	6.9	12	23
FMP788	POYC10CCESW	8.4	12	23
FMP789	POYC12CCESW	9.9	14	33
FMP790	POYC14CCESW	7.1	11	16
FMP791	POYC16CCE	6.1	9.6	17
FMP792	POYC24CCE	0.4	11	15
FMP793	NOYC2CCES	7.5	11	17
FMP794	NOYC4CCESW	7.5	11	17
FMP795	NOYC6CCESW	8.1	12	12
FMP796	NOYC8CCESW	7.3	12	24

Forest management practice		Silvicultural operations without final harvesting		
Index	Name of practice	% biomass removals		
		Min	Mean	Max
FMP797	NOYC10CCESW	8.6	11	12
FMP798	NOYC12CCESW	9.5	12	11
FMP799	NOYC14CCESW	6.9	13	13
FMP800	NOYC16CCEW	9.0	14	12
FMP801	NOYC18CCESW	2.9	15	13

Private forest estate (England, Scotland and Wales): Forest Management Practices involving clearcutting with no thinning during the rotation

Note that up to four rotations are assigned for each FMP. Proportions of forest area within a stratum are assigned to each of the rotations.

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP802	NSYC4NTW	60	100%	-	-	-	-	-	-	67
FMP803	NSYC6NTE	64	100%	-	-	-	-	-	-	66
FMP804	NSYC6NTS	57	100%	-	-	-	-	-	-	66
FMP805	NSYC6NTW	60	100%	-	-	-	-	-	-	66
FMP806	NSYC8NTE	60	100%	-	-	-	-	-	-	66
FMP807	NSYC8NTS	53	100%	-	-	-	-	-	-	66
FMP808	NSYC8NTW	56	100%	-	-	-	-	-	-	66
FMP809	NSYC10NTE	63	100%	-	-	-	-	-	-	66
FMP810	NSYC10NTS	50	100%	-	-	-	-	-	-	66
FMP811	NSYC12NTE	58	100%	-	-	-	-	-	-	66
FMP812	NSYC12NTS	46	100%	-	-	-	-	-	-	66
FMP813	NSYC14NTE	49	100%	-	-	-	-	-	-	66
FMP814	NSYC14NTS	44	100%	-	-	-	-	-	-	66
FMP815	NSYC16NTE	47	100%	-	-	-	-	-	-	66

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP816	NSYC16NTS	41	100%	-	-	-	-	-	-	66
FMP817	NSYC18NTE	45	100%	-	-	-	-	-	-	66
FMP818	NSYC18NTS	40	100%	-	-	-	-	-	-	66
FMP819	NSYC20NTE	42	100%	-	-	-	-	-	-	66
FMP820	NSYC20NTS	39	100%	-	-	-	-	-	-	66
FMP821	NSYC22NTE	40	100%	-	-	-	-	-	-	66
FMP822	NSYC22NTS	39	100%	-	-	-	-	-	-	66
FMP823	SSYC6NTE	41	25%	46	50%	51	25%	-	-	68
FMP824	SSYC6NTS	50	25%	55	25%	60	25%	65	25%	68
FMP825	SSYC6NTW	47	25%	52	25%	57	25%	62	25%	68
FMP826	SSYC8NTE	41	25%	46	50%	51	25%	-	-	68
FMP827	SSYC8NTS	46	25%	51	25%	56	25%	61	25%	68
FMP828	SSYC8NTW	45	25%	50	25%	55	25%	60	25%	68
FMP829	SSYC10NTE	48	25%	53	50%	58	25%	-	-	68
FMP830	SSYC10NTSW	43	25%	48	25%	53	25%	58	25%	68
FMP831	SSYC12NTE	45	25%	50	50%	55	25%	-	-	68
FMP832	SSYC12NTS	40	25%	45	25%	50	25%	55	25%	68
FMP833	SSYC12NTW	41	25%	47	25%	51	25%	57	25%	68
FMP834	SSYC14NTE	40	25%	45	50%	50	25%	-	-	68
FMP835	SSYC14NTS	36	25%	41	25%	46	25%	51	25%	68

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP836	SSYC14NTW	39	25%	44	25%	49	25%	54	25%	68
FMP837	SSYC16NTE	39	25%	44	50%	49	25%	-	-	68
FMP838	SSYC16NTS	33	25%	38	25%	43	25%	48	25%	68
FMP839	SSYC16NTW	37	25%	42	25%	47	25%	52	25%	68
FMP840	SSYC18NTE	39	25%	44	50%	49	25%	-	-	68
FMP841	SSYC18NTS	30	25%	35	25%	40	25%	45	25%	68
FMP842	SSYC18NTW	34	25%	39	25%	44	25%	49	25%	68
FMP843	SSYC20NTE	40	25%	45	50%	50	25%	-	-	68
FMP844	SSYC20NTS	29	25%	34	25%	39	25%	44	25%	68
FMP845	SSYC20NTW	33	25%	38	25%	43	25%	48	25%	68
FMP846	SSYC22NTE	34	25%	39	50%	44	25%	-	-	68
FMP847	SSYC22NTS	28	25%	33	25%	38	25%	43	25%	68
FMP848	SSYC22NTW	32	25%	37	25%	42	25%	47	25%	68
FMP849	SSYC24NTE	40	25%	45	50%	50	25%	-	-	68
FMP850	SSYC24NTSW	29	25%	34	25%	39	25%	44	25%	68
FMP851	SSYC26NTE	40	25%	45	50%	50	25%	-	-	72
FMP852	SSYC26NTSW	29	25%	34	25%	39	25%	44	25%	72
FMP853	SSYC28NTE	40	25%	45	50%	50	25%	-	-	72
FMP854	SSYC28NTS	29	25%	34	25%	39	25%	44	25%	72
FMP855	SSYC30NTS	29	25%	34	25%	39	25%	44	25%	72

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP856	SPYC4NTE	78	50%	98	50%	-	-	-	-	67
FMP857	SPYC4NTS	82	25%	87	25%	92	25%	97	25%	67
FMP858	SPYC4NTW	80	100%	-	-	-	-	-	-	67
FMP859	SPYC6NTE	68	50%	88	50%	-	-	-	-	67
FMP860	SPYC6NTS	77	25%	82	25%	87	25%	92	25%	67
FMP861	SPYC6NTW	74	100%	-	-	-	-	-	-	67
FMP862	SPYC8NTE	58	50%	78	50%	-	-	-	-	67
FMP863	SPYC8NTS	67	25%	72	25%	77	25%	82	25%	67
FMP864	SPYC8NTW	70	100%	-	-	-	-	-	-	67
FMP865	SPYC10NTE	57	50%	77	50%	-	-	-	-	67
FMP866	SPYC10NTS	59	25%	64	25%	69	25%	74	25%	67
FMP867	SPYC10NTW	66	100%	-	-	-	-	-	-	67
FMP868	SPYC12NTE	51	50%	71	50%					67
FMP869	SPYC12NTS	59	25%	64	25%	69	25%	74	25%	67
FMP870	SPYC12NTW	64	100%	-	-	-	-	-	-	67
FMP871	SPYC14NTE	48	50%	68	50%	-	-	-	-	67
FMP872	SPYC14NTS	55	25%	60	25%	65	25%	70	25%	67
FMP873	SPYC14NTW	62	100%	-	-	-	-	-	-	67
FMP874	SPYC16NTW	62	100%	-	-	-	-	-	-	73
FMP875	SPYC20NTW	62	100%	-	-	-	-	-	-	73

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP876	CPYC4NTS	67	100%	-	-	-	-	-	-	67
FMP877	CPYC6NTS	67	100%	-	-	-	-	-	-	73
FMP878	CPYC8NTS	67	100%	-	-	-	-	-	-	73
FMP879	CPYC10NTS	67	100%	-	-	-	-	-	-	73
FMP880	CPYC12NTS	67	100%	-	-	-	-	-	-	73
FMP881	CPYC14NTS	67	100%	-	-	-	-	-	-	73
FMP882	LPYC4NTE	44	100%	-	-	-	-	-	-	67
FMP883	LPYC4NTS	56	100%	-	-	-	-	-	-	67
FMP884	LPYC4NTW	45	100%	-	-	-	-	-	-	67
FMP885	LPYC6NTE	35	100%	-	-	-	-	-	-	67
FMP886	LPYC6NTS	52	100%	-	-	-	-	-	-	67
FMP887	LPYC6NTW	45	100%	-	-	-	-	-	-	67
FMP888	LPYC8NTE	34	100%	-	-	-	-	-	-	67
FMP889	LPYC8NTS	51	100%	-	-	-	-	-	-	67
FMP890	LPYC8NTW	45	100%	-	-	-	-	-	-	67
FMP891	LPYC10NTE	34	100%	-	-	-	-	-	-	67
FMP892	LPYC10NTS	48	100%	-	-	-	-	-	-	67
FMP893	LPYC10NTW	45	100%	-	-	-	-	-	-	67
FMP894	LPYC12NTE	36	100%	-	-	-	-	-	-	67
FMP895	LPYC12NTS	47	100%	-	-	-	-	-	-	67

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP896	LPYC12NTW	45	100%	-	-	-	-	-	-	67
FMP897	LPYC14NTE	36	100%	-	-	-	-	-	-	67
FMP898	LPYC14NTSW	45	100%	-	-	-	-	-	-	67
FMP899	LPYC16NTE	29	100%	-	-	-	-	-	-	73
FMP900	LPYC16NTW	45	100%	-	-	-	-	-	-	73
FMP901	LPYC18NTE	29	100%	-	-	-	-	-	-	73
FMP902	LPYC20NTE	29	100%	-	-	-	-	-	-	73
FMP903	LPYC20NTSW	45	100%	-	-	-	-	-	-	73
FMP904	ELYC2NTE	40	100%	-	-	-	-	-	-	80
FMP905	ELYC2NTS	79	100%	-	-	-	-	-	-	80
FMP906	ELYC4NTE	55	100%	-	-	-	-	-	-	80
FMP907	ELYC4NTS	79	100%	-	-	-	-	-	-	80
FMP908	ELYC4NTW	52	100%	-	-	-	-	-	-	80
FMP909	ELYC6NTE	57	100%	-	-	-	-	-	-	80
FMP910	ELYC6NTS	71	100%	-	-	-	-	-	-	80
FMP911	ELYC6NTW	50	100%	-	-	-	-	-	-	80
FMP912	ELYC8NTE	56	100%	-	-	-	-	-	-	80
FMP913	ELYC8NTS	68	100%	-	-	-	-	-	-	80
FMP914	ELYC8NTW	47	100%	-	-	-	-	-	-	80
FMP915	ELYC10NTE	55	100%	-	-	-	-	-	-	80

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP916	ELYC10NTS	68	100%	-	-	-	-	-	-	80
FMP917	ELYC10NTW	42	100%	-	-	-	-	-	-	80
FMP918	ELYC12NTE	52	100%	-	-	-	-	-	-	80
FMP919	ELYC12NTS	64	100%	-	-	-	-	-	-	80
FMP920	ELYC12NTW	38	100%	-	-	-	-	-	-	80
FMP921	ELYC14NTE	61	100%	-	-	-	-	-	-	76
FMP922	ELYC14NTS	64	100%	-	-	-	-	-	-	76
FMP923	ELYC14NTW	38	100%	-	-	-	-	-	-	76
FMP924	JLYC2NTE	54	50%	59	25%	64	25%	-	-	76
FMP925	JLYC2NTS	64	75%	84	25%	-	-	-	-	76
FMP926	JLYC4NTE	54	50%	59	25%	64	25%	-	-	76
FMP927	JLYC4NTS	64	75%	84	25%	-	-	-	-	76
FMP928	JLYC4NTW	57	100%	-	-	-	-	-	-	76
FMP929	JLYC6NTE	48	50%	53	25%	58	25%	-	-	76
FMP930	JLYC6NTS	58	75%	78	25%	-	-	-	-	76
FMP931	JLYC6NTW	51	100%	-	-	-	-	-	-	76
FMP932	JLYC8NTE	42	50%	47	25%	52	25%	-	-	76
FMP933	JLYC8NTS	53	75%	73	25%	-	-	-	-	76
FMP934	JLYC8NTW	45	100%	-	-	-	-	-	-	76
FMP935	JLYC10NTE	53	50%	58	25%	63	25%	-	-	76

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP936	JLYC10NTS	50	75%	70	25%	-	-	-	-	76
FMP937	JLYC10NTW	41	100%	-	-	-	-	-	-	76
FMP938	JLYC12NTE	51	50%	56	25%	61	25%	-	-	76
FMP939	JLYC12NTS	46	75%	66	25%	-	-	-	-	76
FMP940	JLYC12NTW	39	100%	-	-	-	-	-	-	76
FMP941	JLYC14NTE	49	50%	54	25%	59	25%	-	-	76
FMP942	JLYC14NTS	41	75%	61	25%	-	-	-	-	76
FMP943	JLYC14NTW	39	100%	-	-	-	-	-	-	76
FMP944	DFYC4NTW	58	100%	-	-	-	-	-	-	67
FMP945	DFYC6NTS	69	100%	-	-	-	-	-	-	67
FMP946	DFYC6NTW	58	100%	-	-	-	-	-	-	67
FMP947	DFYC8NTE	76	25%	81	50%	86	25%	-	-	71
FMP948	DFYC8NTS	69	100%	-	-	-	-	-	-	71
FMP949	DFYC8NTW	58	100%	-	-	-	-	-	-	71
FMP950	DFYC10NTE	70	25%	75	50%	80	25%	-	-	71
FMP951	DFYC10NTS	64	100%	-	-	-	-	-	-	71
FMP952	DFYC10NTW	58	100%	-	-	-	-	-	-	71
FMP953	DFYC12NTE	67	25%	72	50%	77	25%	-	-	71
FMP954	DFYC12NTS	68	100%	-	-	-	-	-	-	71
FMP955	DFYC12NTW	56	100%	-	-	-	-	-	-	71

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP956	DFYC14NTE	66	25%	71	50%	76	25%	-	-	71
FMP957	DFYC14NTS	70	100%	-	-	-	-	-	-	71
FMP958	DFYC14NTW	55	100%	-	-	-	-	-	-	71
FMP959	DFYC16NTE	63	25%	68	50%	73	25%	-	-	71
FMP960	DFYC16NTS	58	100%	-	-	-	-	-	-	71
FMP961	DFYC16NTW	62	100%	-	-	-	-	-	-	71
FMP962	DFYC18NTE	62	25%	67	50%	72	25%	-	-	71
FMP963	DFYC18NTS	56	100%	-	-	-	-	-	-	71
FMP964	DFYC20NTE	60	25%	65	50%	70	25%	-	-	71
FMP965	DFYC20NTS	54	100%	-	-	-	-	-	-	71
FMP966	DFYC22NTE	57	25%	62	50%	67	25%	-	-	71
FMP967	DFYC22NTS	54	100%	-	-	-	-	-	-	71
FMP968	DFYC24NTE	56	25%	61	50%	66	25%	-	-	71
FMP969	DFYC24NTS	51	100%	-	-	-	-	-	-	71
FMP970	DFYC26NTE	56	25%	61	50%	66	25%	-	-	72
FMP971	DFYC26NTS	51	100%	-	-	-	-	-	-	72
FMP972	GFYC4NTW	66	100%	-	-	-	-	-	-	67
FMP973	GFYC6NTS	53	100%	-	-	-	-	-	-	67
FMP974	GFYC8NTE	51	100%	-	-	-	-	-	-	68
FMP975	GFYC8NTS	53	100%	-	-	-	-	-	-	68

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP976	GFYC10NTE	45	100%	-	-	-	-	-	-	68
FMP977	GFYC10NTS	53	100%	-	-	-	-	-	-	68
FMP978	GFYC10NTW	59	100%	-	-	-	-	-	-	68
FMP979	GFYC12NTE	42	100%	-	-	-	-	-	-	72
FMP980	GFYC12NTS	53	100%	-	-	-	-	-	-	72
FMP981	GFYC12NTW	57	100%	-	-	-	-	-	-	72
FMP982	GFYC14NTE	41	100%	-	-	-	-	-	-	72
FMP983	GFYC14NTSW	55	100%	-	-	-	-	-	-	72
FMP984	GFYC16NTE	41	100%	-	-	-	-	-	-	72
FMP985	GFYC16NTS	55	100%	-	-	-	-	-	-	72
FMP986	GFYC16NTW	53	100%	-	-	-	-	-	-	72
FMP987	GFYC18NTE	39	100%	-	-	-	-	-	-	72
FMP988	GFYC18NTS	55	100%	-	-	-	-	-	-	72
FMP989	GFYC18NTW	50	100%	-	-	-	-	-	-	72
FMP990	GFYC20NTE	35	100%	-	-	-	-	-	-	72
FMP991	GFYC20NTS	55	100%	-	-	-	-	-	-	72
FMP992	GFYC20NTW	48	100%	-	-	-	-	-	-	72
FMP993	GFYC22NTE	34	100%	-	-	-	-	-	-	72
FMP994	GFYC22NTS	55	100%	-	-	-	-	-	-	72
FMP995	GFYC22NTW	48	100%	-	-	-	-	-	-	72

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP996	GFYC24NTE	34	100%	-	-	-	-	-	-	72
FMP997	GFYC24NTS	55	100%	-	-	-	-	-	-	72
FMP998	GFYC24NTW	48	100%	-	-	-	-	-	-	72
FMP999	GFYC26NTE	34	100%	-	-	-	-	-	-	72
FMP1000	GFYC26NTS	55	100%	-	-	-	-	-	-	72
FMP1001	GFYC26NTW	48	100%	-	-	-	-	-	-	72
FMP1002	GFYC28NTE	34	100%	-	-	-	-	-	-	72
FMP1003	GFYC28NTS	55	100%	-	-	-	-	-	-	72
FMP1004	GFYC28NTW	48	100%	-	-	-	-	-	-	72
FMP1005	GFYC30NTE	34	100%	-	-	-	-	-	-	72
FMP1006	GFYC30NTS	55	100%	-	-	-	-	-	-	72
FMP1007	GFYC30NTW	48	100%	-	-	-	-	-	-	72
FMP1008	NFYC4NTW	66	100%	-	-	-	-	-	-	67
FMP1009	NFYC6NTS	53	100%	-	-	-	-	-	-	68
FMP1010	NFYC6NTW	66	100%	-	-	-	-	-	-	68
FMP1011	NFYC8NTE	51	100%	-	-	-	-	-	-	68
FMP1012	NFYC8NTS	53	100%	-	-	-	-	-	-	68
FMP1013	NFYC8NTW	62	100%	-	-	-	-	-	-	68
FMP1014	NFYC10NTE	45	100%	-	-	-	-	-	-	70
FMP1015	NFYC10NTS	53	100%	-	-	-	-	-	-	70

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP1016	NFYC10NTW	59	100%	-	-	-	-	-	-	70
FMP1017	NFYC12NTE	42	100%	-	-	-	-	-	-	70
FMP1018	NFYC12NTS	53	100%	-	-	-	-	-	-	70
FMP1019	NFYC12NTW	57	100%	-	-	-	-	-	-	70
FMP1020	NFYC14NTE	41	100%	-	-	-	-	-	-	70
FMP1021	NFYC14NTSW	55	100%	-	-	-	-	-	-	70
FMP1022	NFYC16NTE	41	100%	-	-	-	-	-	-	70
FMP1023	NFYC16NTS	55	100%	-	-	-	-	-	-	70
FMP1024	NFYC16NTW	53	100%	-	-	-	-	-	-	70
FMP1025	NFYC18NTE	39	100%	-	-	-	-	-	-	70
FMP1026	NFYC18NTS	55	100%	-	-	-	-	-	-	70
FMP1027	NFYC18NTW	50	100%	-	-	-	-	-	-	70
FMP1028	NFYC20NTE	35	100%	-	-	-	-	-	-	70
FMP1029	NFYC20NTS	55	100%	-	-	-	-	-	-	70
FMP1030	NFYC20NTW	48	100%	-	-	-	-	-	-	70
FMP1031	NFYC22NTE	34	100%	-	-	-	-	-	-	70
FMP1032	NFYC22NTS	55	100%	-	-	-	-	-	-	70
FMP1033	NFYC22NTW	48	100%	-	-	-	-	-	-	70
FMP1034	NFYC24NTS	55	100%	-	-	-	-	-	-	72
FMP1035	NFYC24NTW	48	100%	-	-	-	-	-	-	72

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP1036	NFYC26NTS	55	100%	-	-	-	-	-	-	72
FMP1037	NFYC28NTS	55	100%	-	-	-	-	-	-	72
FMP1038	WHYC4NTE	55	100%	-	-	-	-	-	-	67
FMP1039	WHYC4NTW	66	100%	-	-	-	-	-	-	67
FMP1040	WHYC6NTE	57	100%	-	-	-	-	-	-	68
FMP1041	WHYC6NTS	53	100%	-	-	-	-	-	-	68
FMP1042	WHYC6NTW	66	100%	-	-	-	-	-	-	68
FMP1043	WHYC8NTE	51	100%	-	-	-	-	-	-	68
FMP1044	WHYC8NTS	53	100%	-	-	-	-	-	-	68
FMP1045	WHYC8NTW	62	100%	-	-	-	-	-	-	68
FMP1046	WHYC10NTE	45	100%	-	-	-	-	-	-	68
FMP1047	WHYC10NTS	53	100%	-	-	-	-	-	-	68
FMP1048	WHYC10NTW	59	100%	-	-	-	-	-	-	68
FMP1049	WHYC12NTE	42	100%	-	-	-	-	-	-	76
FMP1050	WHYC12NTS	53	100%	-	-	-	-	-	-	76
FMP1051	WHYC12NTW	57	100%	-	-	-	-	-	-	76
FMP1052	WHYC14NTE	41	100%	-	-	-	-	-	-	76
FMP1053	WHYC14NTSW	55	100%	-	-	-	-	-	-	76
FMP1054	WHYC16NTE	41	100%	-	-	-	-	-	-	76
FMP1055	WHYC16NTS	55	100%	-	-	-	-	-	-	76

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP1056	WHYC16NTW	53	100%	-	-	-	-	-	-	76
FMP1057	WHYC18NTE	39	100%	-	-	-	-	-	-	76
FMP1058	WHYC18NTS	55	100%	-	-	-	-	-	-	76
FMP1059	WHYC18NTW	50	100%	-	-	-	-	-	-	76
FMP1060	WHYC20NTE	35	100%	-	-	-	-	-	-	76
FMP1061	WHYC20NTS	55	100%	-	-	-	-	-	-	76
FMP1062	WHYC20NTW	48	100%	-	-	-	-	-	-	76
FMP1063	WHYC22NTE	34	100%	-	-	-	-	-	-	76
FMP1064	WHYC22NTS	55	100%	-	-	-	-	-	-	76
FMP1065	WHYC22NTW	48	100%	-	-	-	-	-	-	76
FMP1066	WHYC24NTE	34	100%	-	-	-	-	-	-	76
FMP1067	WHYC24NTS	55	100%	-	-	-	-	-	-	76
FMP1068	WHYC24NTW	48	100%	-	-	-	-	-	-	76
FMP1069	WHYC26NTS	55	100%	-	-	-	-	-	-	72
FMP1070	WHYC26NTW	48	100%	-	-	-	-	-	-	72
FMP1071	RCYC4NTE	55	100%	-	-	-	-	-	-	67
FMP1072	RCYC4NTW	66	100%	-	-	-	-	-	-	67
FMP1073	RCYC6NTE	57	100%	-	-	-	-	-	-	68
FMP1074	RCYC6NTS	53	100%	-	-	-	-	-	-	68
FMP1075	RCYC6NTW	66	100%	-	-	-	-	-	-	68

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP1076	RCYC8NTE	51	100%	-	-	-	-	-	-	68
FMP1077	RCYC8NTS	53	100%	-	-	-	-	-	-	68
FMP1078	RCYC8NTW	62	100%	-	-	-	-	-	-	68
FMP1079	RCYC10NTE	45	100%	-	-	-	-	-	-	68
FMP1080	RCYC10NTS	53	100%	-	-	-	-	-	-	68
FMP1081	RCYC10NTW	59	100%	-	-	-	-	-	-	68
FMP1082	RCYC12NTE	42	100%	-	-	-	-	-	-	67
FMP1083	RCYC12NTS	53	100%	-	-	-	-	-	-	67
FMP1084	RCYC12NTW	57	100%	-	-	-	-	-	-	67
FMP1085	RCYC14NTE	41	100%	-	-	-	-	-	-	67
FMP1086	RCYC14NTSW	55	100%	-	-	-	-	-	-	67
FMP1087	RCYC16NTE	41	100%	-	-	-	-	-	-	67
FMP1088	RCYC16NTS	55	100%	-	-	-	-	-	-	67
FMP1089	RCYC16NTW	53	100%	-	-	-	-	-	-	67
FMP1090	RCYC18NTE	39	100%	-	-	-	-	-	-	67
FMP1091	RCYC18NTS	55	100%	-	-	-	-	-	-	67
FMP1092	RCYC18NTW	50	100%	-	-	-	-	-	-	67
FMP1093	RCYC20NTE	35	100%	-	-	-	-	-	-	67
FMP1094	RCYC20NTS	55	100%	-	-	-	-	-	-	67
FMP1095	RCYC20NTW	48	100%	-	-	-	-	-	-	67

Forest management practice		Silvicultural operations with final harvesting – No thinning								
Index	Name of practice	Final cutting								
		Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
		Age (years)	%	Age (years)	%	Age (years)	%	Age (years)	%	
FMP1096	RCYC22NTE	34	100%	-	-	-	-	-	-	67
FMP1097	RCYC22NTS	55	100%	-	-	-	-	-	-	67
FMP1098	RCYC22NTW	48	100%	-	-	-	-	-	-	67
FMP1099	RCYC24NTE	34	100%	-	-	-	-	-	-	67
FMP1100	RCYC24NTS	55	100%	-	-	-	-	-	-	67
FMP1101	RCYC24NTW	48	100%	-	-	-	-	-	-	67

Private forest estate (England, Scotland and Wales): Forest Management Practices involving clearcutting with thinning during the rotation

Note that up to four rotations are assigned for each FMP. Proportions of forest area within a stratum are assigned to each of the rotations.

FMP	**Silvicultural operations with final harvesting - Thinning**																					
Index	Name of practice	Initial thinning		Main thinnings					Late-rotation thinnings					Final cutting								
		Age (yrs)	% biomass removals	Age of first (yrs)	No. (5 yr cycle)	% biomass removals			Age of first (yrs)	No. (5 yr cycle)	% biomass removals			Rotation 1		Rotation 2		Rotation 3		Rotation 4		% biomass removals
						Min.	Mean	Max.			Min.	Mean	Max.	Age (yrs)	Percentage	Age (yrs)	Percentage	Age (yrs)	Percentage	Age (yrs)	Percentage	
ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1102	NSYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	69	100%	-	-	-	-	-	-	67
FMP1103	NSYC6THE	-	0	35	7	6.1	10	16	70	34	0.1	1.1	5.2	66	100%	-	-	-	-	-	-	66
FMP1104	NSYC6THS	-	0	35	7	6.1	10	16	70	34	0.1	1.1	5.2	60	100%	-	-	-	-	-	-	66
FMP1105	NSYC6THW	-	0	35	7	6.1	10	16	70	34	0.1	1.1	5.2	69	100%	-	-	-	-	-	-	66
FMP1106	NSYC8THE	-	0	31	8	5.9	10	17	71	45	0.4	1.4	4.5	42	100%	-	-	-	-	-	-	66
FMP1107	NSYC8THS	-	0	31	8	5.9	10	17	71	45	0.4	1.4	4.5	57	100%	-	-	-	-	-	-	66
FMP1108	NSYC8THW	-	0	31	8	5.9	10	17	71	45	0.4	1.4	4.5	65	100%	-	-	-	-	-	-	66
FMP1109	NSYC10THE	-	0	28	8	6.3	11	20	68	46	0.3	1.4	5.1	46	100%	-	-	-	-	-	-	66
FMP1110	NSYC10THS	-	0	28	8	6.3	11	20	68	46	0.3	1.4	5.1	57	100%	-	-	-	-	-	-	66
FMP1111	NSYC10THW	-	0	28	8	6.3	11	20	68	46	0.3	1.4	5.1	60	100%	-	-	-	-	-	-	66
FMP1112	NSYC12THE	-	0	26	8	6.6	12	22	66	46	0.8	1.8	5.6	41	100%	-	-	-	-	-	-	66
FMP1113	NSYC12THS	-	0	26	8	6.6	12	22	66	46	0.8	1.8	5.6	52	100%	-	-	-	-	-	-	66
FMP1114	NSYC12THW	-	0	26	8	6.6	12	22	66	46	0.8	1.8	5.6	55	100%	-	-	-	-	-	-	66
FMP1115	NSYC14THE	-	0	24	9	6.5	12	24	69	45	0.5	1.6	5.0	44	100%	-	-	-	-	-	-	66
FMP1116	NSYC14THS	-	0	24	9	6.5	12	24	69	45	0.5	1.6	5.0	47	100%	-	-	-	-	-	-	66
FMP1117	NSYC14THW	-	0	24	9	6.5	12	24	69	45	0.5	1.6	5.0	50	100%	-	-	-	-	-	-	66
FMP1118	NSYC16THE	-	0	23	8	7.1	13	25	63	47	0.2	1.4	6.1	40	100%	-	-	-	-	-	-	66
FMP1119	NSYC16THS	-	0	23	8	7.1	13	25	63	47	0.2	1.4	6.1	45	100%	-	-	-	-	-	-	66
FMP1120	NSYC16THW	-	0	23	8	7.1	13	25	63	47	0.2	1.4	6.1	47	100%	-	-	-	-	-	-	66
FMP1121	NSYC18THE	-	0	22	8	7.3	13	26	62	47	0.2	1.4	6.3	40	100%	-	-	-	-	-	-	66
FMP1122	NSYC18THS	-	0	22	8	7.3	13	26	62	47	0.2	1.4	6.3	44	100%	-	-	-	-	-	-	66
FMP1123	NSYC18THW	-	0	22	8	7.3	13	26	62	47	0.2	1.4	6.3	45	100%	-	-	-	-	-	-	66
FMP1124	NSYC20THE	-	0	21	8	7.5	14	28	61	47	0.1	1.3	6.6	32	100%	-	-	-	-	-	-	66

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1125	NSYC20THSW	-	0	21	8	7.5	14	28	61	47	0.1	1.3	6.6	43	100%	-	-	-	-	-	-	66
FMP1126	NSYC22THESW	-	0	20	8	7.8	15	30	60	44	0.1	1.2	6.8	43	100%	-	-	-	-	-	-	66
FMP1127	NSYC24THW	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	43	100%	-	-	-	-	-	-	72
FMP1128	SSYC6THE	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	56	25%	61	50%	66	25%	-	-	68
FMP1129	SSYC6THS	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	53	25%	58	25%	63	25%	68	25%	68
FMP1130	SSYC8THE	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	54	25%	59	50%	64	25%	-	-	68
FMP1131	SSYC8THS	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	49	25%	54	25%	59	25%	64	25%	68
FMP1132	SSYC10THE	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	50	25%	55	50%	60	25%	-	-	68
FMP1133	SSYC10THS	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	49	25%	54	25%	59	25%	64	25%	68
FMP1134	SSYC12THE	-	0	24	6	8.0	13	22	54	44	0.1	1.2	6.2	49	25%	54	50%	59	25%	-	-	68
FMP1135	SSYC12THS	-	0	24	6	8.0	13	22	54	44	0.1	1.2	6.2	45	25%	50	25%	55	25%	60	25%	68
FMP1136	SSYC12THW	-	0	24	6	8.0	13	22	54	44	0.1	1.2	6.2	46	25%	51	25%	56	25%	61	25%	68
FMP1137	SSYC14THE	-	0	22	6	8.5	15	25	52	38	0.1	1.3	6.7	45	25%	50	50%	55	25%	-	-	68
FMP1138	SSYC14THS	-	0	22	6	8.5	15	25	52	38	0.1	1.3	6.7	40	25%	45	25%	50	25%	55	25%	68
FMP1139	SSYC14THW	-	0	22	6	8.5	15	25	52	38	0.1	1.3	6.7	43	25%	48	25%	53	25%	58	25%	68
FMP1140	SSYC16THE	-	0	21	6	8.7	15	26	51	41	0.1	1.3	6.8	43	25%	48	50%	53	25%	-	-	68
FMP1141	SSYC16THS	-	0	21	6	8.7	15	26	51	41	0.1	1.3	6.8	37	25%	42	25%	47	25%	52	25%	68
FMP1142	SSYC16THW	-	0	21	6	8.7	15	26	51	41	0.1	1.3	6.8	41	25%	46	25%	51	25%	56	25%	68
FMP1143	SSYC18THE	-	0	20	5	10	17	26	45	42	0.1	1.5	8.8	42	25%	47	50%	52	25%	-	-	68
FMP1144	SSYC18THS	-	0	20	5	10	17	26	45	42	0.1	1.5	8.8	34	25%	39	25%	44	25%	49	25%	68
FMP1145	SSYC18THW	-	0	20	5	10	17	26	45	42	0.1	1.5	8.8	39	25%	44	25%	49	25%	54	25%	68
FMP1146	SSYC20THE	-	0	19	6	9.2	16	27	49	40	0.1	1.3	7.1	41	25%	46	50%	51	25%			68
FMP1147	SSYC20THS	-	0	19	6	9.2	16	27	49	40	0.1	1.3	7.1	33	25%	38	25%	43	25%	48	25%	68

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1148	SSYC20THW	-	0	19	6	9.2	16	27	49	40	0.1	1.3	7.1	37	25%	42	25%	47	25%	52	25%	68
FMP1149	SSYC22THE	-	0	18	6	9.5	16	28	48	39	0.1	1.4	7.3	38	25%	43	50%	48	25%	-	-	68
FMP1150	SSYC22THS	-	0	18	6	9.5	16	28	48	39	0.1	1.4	7.3	33	25%	38	25%	43	25%	48	25%	68
FMP1151	SSYC22THW	-	0	18	6	9.5	16	28	48	39	0.1	1.4	7.3	35	25%	40	25%	45	25%	50	25%	68
FMP1152	SSYC24THE	-	0	18	5	10	17	26	43	44	0.1	1.4	8.6	40	25%	45	50%	50	25%	-	-	68
FMP1153	SSYC24THS	-	0	18	5	10	17	26	43	44	0.1	1.4	8.6	33	25%	38	25%	43	25%	48	25%	68
FMP1154	SSYC24THW	-	0	18	5	10	17	26	43	44	0.1	1.4	8.6	34	25%	39	25%	44	25%	49	25%	68
FMP1155	SSYC26THE	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	40	25%	45	50%	50	25%	-	-	72
FMP1156	SSYC26THS	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	33	25%	38	25%	43	25%	48	25%	72
FMP1157	SSYC26THW	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	34	25%	39	25%	44	25%	49	25%	72
FMP1158	SSYC28THE	-	0	20	4	12	19	29	40	35	0.1	1.6	10.2	40	25%	45	50%	50	25%	-	-	72
FMP1159	SSYC28THS	-	0	20	4	12	19	29	40	35	0.1	1.6	10.2	33	25%	38	25%	43	25%	48	25%	72
FMP1160	SSYC30THS	-	0	19	5	11	19	32	44	38	0.1	1.4	8.0	33	25%	38	25%	43	25%	48	25%	72
FMP1161	SPYC4THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	74	50%	94	50%	-	-	-	-	67
FMP1162	SPYC4THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	83	25%	88	25%	93	25%	98	25%	67
FMP1163	SPYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	83	100%	-	-	-	-	-	-	67
FMP1164	SPYC6THE	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	70	50%	90	50%	-	-	-	-	67
FMP1165	SPYC6THS	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	80	25%	85	25%	90	25%	95	25%	67
FMP1166	SPYC6THW	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	80	100%	-	-	-	-	-	-	67
FMP1167	SPYC8THE	-	0	29	9	5.9	10	18	74	16	0.1	1.5	4.9	65	50%	86	50%	-	-	-	-	67
FMP1168	SPYC8THS	-	0	29	9	5.9	10	18	74	16	0.1	1.5	4.9	75	25%	80	25%	85	25%	90	25%	67
FMP1169	SPYC8THW	-	0	29	9	5.9	10	18	74	16	0.1	1.5	4.9	75	100%	-	-	-	-	-	-	67
FMP1170	SPYC10THE	-	0	25	8	6.9	12	21	65	20	0.1	1.8	6.1	60	50%	80	50%	-	-	-	-	67

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\overline{m}$	MT %M	LR Ag	LR c.	LR m	LR $\overline{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1171	SPYC10THS	-	0	25	8	6.9	12	21	65	20	0.1	1.8	6.1	69	25%	74	25%	79	25%	84	25%	67
FMP1172	SPYC10THW	-	0	25	8	6.9	12	21	65	20	0.1	1.8	6.1	69	100%	-	-	-	-	-	-	67
FMP1173	SPYC12THE	-	0	23	8	7.2	12	21	63	25	0.1	1.6	6.1	55	50%	75	50%	-	-	-	-	67
FMP1174	SPYC12THS	-	0	23	8	7.2	12	21	63	25	0.1	1.6	6.1	64	25%	69	25%	74	25%	79	25%	67
FMP1175	SPYC12THW	-	0	23	8	7.2	12	21	63	25	0.1	1.6	6.1	64	100%	-	-	-	-	-	-	67
FMP1176	SPYC14THE	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	50	50%	70	50%	-	-	-	-	67
FMP1177	SPYC14THS	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	58	25%	63	25%	68	25%	73	25%	67
FMP1178	SPYC14THW	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	59	100%	-	-	-	-	-	-	67
FMP1179	SPYC16THW	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	59	100%	-	-	-	-	-	-	73
FMP1180	SPYC20THW	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	59	100%	-	-	-	-	-	-	73
FMP1181	CPYC4THS	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	62	100%	-	-	-	-	-	-	67
FMP1182	CPYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	69	100%	-	-	-	-	-	-	67
FMP1183	CPYC6THE	-	0	33	6	6.6	8.8	12	63	47	0.5	1.7	5.3	70	100%	-	-	-	-	-	-	73
FMP1184	CPYC6THS	-	0	33	6	6.6	8.8	12	63	47	0.5	1.7	5.3	62	100%	-	-	-	-	-	-	73
FMP1185	CPYC6THW	-	0	33	6	6.6	8.8	12	63	47	0.5	1.7	5.3	69	100%	-	-	-	-	-	-	73
FMP1186	CPYC8THE	-	0	28	6	7.6	10	15	58	48	0.7	1.8	6.1	69	100%	-	-	-	-	-	-	73
FMP1187	CPYC8THS	-	0	28	6	7.6	10	15	58	48	0.7	1.8	6.1	62	100%	-	-	-	-	-	-	73
FMP1188	CPYC8THW	-	0	28	6	7.6	10	15	58	48	0.7	1.8	6.1	68	100%	-	-	-	-	-	-	73
FMP1189	CPYC10THE	-	0	25	6	8.3	12	17	55	48	0.8	2.0	6.8	66	100%	-	-	-	-	-	-	73
FMP1190	CPYC10THS	-	0	25	6	8.3	12	17	55	48	0.8	2.0	6.8	62	100%	-	-	-	-	-	-	73
FMP1191	CPYC10THW	-	0	25	6	8.3	12	17	55	48	0.8	2.0	6.8	65	100%	-	-	-	-	-	-	73
FMP1192	CPYC12THE	-	0	23	6	8.8	13	19	53	49	0.8	2.0	7.1	63	100%	-	-	-	-	-	-	73
FMP1193	CPYC12THS	-	0	23	6	8.8	13	19	53	49	0.8	2.0	7.1	62	100%	-	-	-	-	-	-	73

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1194	CPYC12THW	-	0	23	6	8.8	13	19	53	49	0.8	2.0	7.1	61	100%	-	-	-	-	-	-	73
FMP1195	CPYC14THE	-	0	21	6	9.5	14	22	51	49	1.8	2.5	7.8	60	100%	-	-	-	-	-	-	73
FMP1196	CPYC14THS	-	0	21	6	9.5	14	22	51	49	1.8	2.5	7.8	62	100%	-	-	-	-	-	-	73
FMP1197	CPYC14THW	-	0	21	6	9.5	14	22	51	49	1.8	2.5	7.8	58	100%	-	-	-	-	-	-	73
FMP1198	CPYC16THE	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	56	100%	-	-	-	-	-	-	73
FMP1199	CPYC16THW	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	54	100%	-	-	-	-	-	-	73
FMP1200	CPYC18THE	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	53	100%	-	-	-	-	-	-	73
FMP1201	CPYC18THW	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	51	100%	-	-	-	-	-	-	73
FMP1202	CPYC20THE	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	52	100%	-	-	-	-	-	-	73
FMP1203	CPYC20THW	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	50	100%	-	-	-	-	-	-	73
FMP1204	CPYC22THW	-	0	21	5	10	17	28	46	28	0.1	1.5	7.4	50	100%	-	-	-	-	-	-	72
FMP1205	LPYC4THE	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	56	100%	-	-	-	-	-	-	67
FMP1206	LPYC4THS	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	61	100%	-	-	-	-	-	-	67
FMP1207	LPYC4THW	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	45	100%	-	-	-	-	-	-	67
FMP1208	LPYC6THE	-	0	31	7	6.0	7.9	11	66	46	1.6	2.3	4.8	55	100%	-	-	-	-	-	-	67
FMP1209	LPYC6THS	-	0	31	7	6.0	7.9	11	66	46	1.6	2.3	4.8	57	100%	-	-	-	-	-	-	67
FMP1210	LPYC6THW	-	0	31	7	6.0	7.9	11	66	46	1.6	2.3	4.8	45	100%	-	-	-	-	-	-	67
FMP1211	LPYC8THE	-	0	26	7	6.8	10	14	61	47	1.8	2.6	5.6	52	100%	-	-	-	-	-	-	67
FMP1212	LPYC8THS	-	0	26	7	6.8	10	14	61	47	1.8	2.6	5.6	57	100%	-	-	-	-	-	-	67
FMP1213	LPYC8THW	-	0	26	7	6.8	10	14	61	47	1.8	2.6	5.6	45	100%	-	-	-	-	-	-	67
FMP1214	LPYC10THE	-	0	23	7	7.4	11	17	58	48	2.4	3.0	6.2	47	100%	-	-	-	-	-	-	67
FMP1215	LPYC10THS	-	0	23	7	7.4	11	17	58	48	2.4	3.0	6.2	54	100%	-	-	-	-	-	-	67
FMP1216	LPYC10THW	-	0	23	7	7.4	11	17	58	48	2.4	3.0	6.2	45	100%	-	-	-	-	-	-	67

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1217	LPYC12THE	-	0	21	7	7.9	12	19	56	48	2.2	2.9	6.6	39	100%	-	-	-	-	-	-	67
FMP1218	LPYC12THS	-	0	21	7	7.9	12	19	56	48	2.2	2.9	6.6	49	100%	-	-	-	-	-	-	67
FMP1219	LPYC12THW	-	0	21	7	7.9	12	19	56	48	2.2	2.9	6.6	45	100%	-	-	-	-	-	-	67
FMP1220	LPYC14THE	-	0	19	7	8.4	13	23	54	48	1.2	2.5	7.0	29	100%	-	-	-	-	-	-	67
FMP1221	LPYC14THSW	-	0	19	7	8.4	13	23	54	48	1.2	2.5	7.0	45	100%	-	-	-	-	-	-	67
FMP1222	LPYC16THE	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	29	100%	-	-	-	-	-	-	73
FMP1223	LPYC16THW	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	45	100%	-	-	-	-	-	-	73
FMP1224	LPYC18THE	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	29	100%	-	-	-	-	-	-	73
FMP1225	LPYC20THE	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	29	100%	-	-	-	-	-	-	73
FMP1226	LPYC20THSW	-	0	18	6	11	17	27	48	50	1.1	2.2	8.2	45	100%	-	-	-	-	-	-	73
FMP1227	ELYC2THE	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	60	100%	-	-	-	-	-	-	80
FMP1228	ELYC2THS	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	84	100%	-	-	-	-	-	-	80
FMP1229	ELYC4THE	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	68	100%	-	-	-	-	-	-	80
FMP1230	ELYC4THS	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	84	100%	-	-	-	-	-	-	80
FMP1231	ELYC4THW	-	0	32	5	7.5	10	14	57	11	0.4	2.2	5.9	57	100%	-	-	-	-	-	-	80
FMP1232	ELYC6THE	-	0	26	5	9.1	13	18	51	16	0.3	2.4	7.9	69	100%	-	-	-	-	-	-	80
FMP1233	ELYC6THS	-	0	26	5	9.1	13	18	51	16	0.3	2.4	7.9	78	100%	-	-	-	-	-	-	80
FMP1234	ELYC6THW	-	0	26	5	9.1	13	18	51	16	0.3	2.4	7.9	55	100%	-	-	-	-	-	-	80
FMP1235	ELYC8THE	-	0	22	6	9.6	14	22	52	20	0.3	2.1	7.1	67	100%	-	-	-	-	-	-	80
FMP1236	ELYC8THS	-	0	22	6	9.6	14	22	52	20	0.3	2.1	7.1	78	100%	-	-	-	-	-	-	80
FMP1237	ELYC8THW	-	0	22	6	9.6	14	22	52	20	0.3	2.1	7.1	52	100%	-	-	-	-	-	-	80
FMP1238	ELYC10THE	-	0	20	5	11	16	24	45	27	0.2	2.3	9.2	64	100%	-	-	-	-	-	-	80
FMP1239	ELYC10THS	-	0	20	5	11	16	24	45	27	0.2	2.3	9.2	73	100%	-	-	-	-	-	-	80

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FMP1240	ELYC10THW	-	0	20	5	11	16	24	45	27	0.2	2.3	9.2	47	100%	-	-	-	-	-	-	80
FMP1241	ELYC12THE	-	0	18	5	12	18	26	43	34	0.2	2.2	9.9	61	100%	-	-	-	-	-	-	80
FMP1242	ELYC12THS	-	0	18	5	12	18	26	43	34	0.2	2.2	9.9	69	100%	-	-	-	-	-	-	80
FMP1243	ELYC12THW	-	0	18	5	12	18	26	43	34	0.2	2.2	9.9	43	100%	-	-	-	-	-	-	80
FMP1244	ELYC14THE	-	0	14	6	12	20	34	44	46	4.7	10	76	66	100%	-	-	-	-	-	-	76
FMP1245	ELYC14THS	-	0	14	6	12	20	34	44	46	4.7	10	76	69	100%	-	-	-	-	-	-	76
FMP1246	ELYC14THW	-	0	14	6	12	20	34	44	46	4.7	10	76	43	100%	-	-	-	-	-	-	76
FMP1247	JLYC2THE	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	59	25%	64	50%	69	25%	-	-	76
FMP1248	JLYC2THS	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	68	75%	88	25%	-	-	-	-	76
FMP1249	JLYC4THE	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	59	25%	64	50%	69	25%	-	-	76
FMP1250	JLYC4THS	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	68	75%	88	25%	-	-	-	-	76
FMP1251	JLYC4THW	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	57	100%	-	-	-	-	-	-	76
FMP1252	JLYC6THE	-	0	22	5	9.7	14	21	47	50	2.7	3.6	7.9	58	25%	63	50%	68	25%	-	-	76
FMP1253	JLYC6THS	-	0	22	5	9.7	14	21	47	50	2.7	3.6	7.9	63	75%	83	25%	-	-	-	-	76
FMP1254	JLYC6THW	-	0	22	5	9.7	14	21	47	50	2.7	3.6	7.9	56	100%	-	-	-	-	-	-	76
FMP1255	JLYC8THE	-	0	19	6	10	15	25	49	49	3.3	4.5	8.6	56	25%	61	50%	66	25%	-	-	76
FMP1256	JLYC8THS	-	0	19	6	10	15	25	49	49	3.3	4.5	8.6	61	75%	81	25%	-	-	-	-	76
FMP1257	JLYC8THW	-	0	19	6	10	15	25	49	49	3.3	4.5	8.6	54	100%	-	-	-	-	-	-	76
FMP1258	JLYC10THE	-	0	17	5	12	18	28	42	45	4.2	10	76	59	25%	64	50%	69	25%	-	-	76
FMP1259	JLYC10THS	-	0	17	5	12	18	28	42	45	4.2	10	76	58	75%	78	25%	-	-	-	-	76
FMP1260	JLYC10THW	-	0	17	5	12	18	28	42	45	4.2	10	76	50	100%	-	-	-	-	-	-	76
FMP1261	JLYC12THE	-	0	15	5	13	20	33	40	42	4.6	10	76	53	25%	58	50%	63	25%	-	-	76
FMP1262	JLYC12THS	-	0	15	5	13	20	33	40	42	4.6	10	76	52	75%	72	25%	-	-	-	-	76

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FMP1263	JLYC12THW	-	0	15	5	13	20	33	40	42	4.6	10	76	46	100%	-	-	-	-	-	-	76
FMP1264	JLYC14THE	-	0	14	6	12	20	34	44	46	4.7	10	76	48	25%	53	50%	58	25%	-	-	76
FMP1265	JLYC14THS	-	0	14	6	12	20	34	44	46	4.7	10	76	43	75%	63	25%	-	-	-	-	76
FMP1266	JLYC14THW	-	0	14	6	12	20	34	44	46	4.7	10	76	43	100%	-	-	-	-	-	-	76
FMP1267	DFYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	64	100%	-	-	-	-	-	-	67
FMP1268	DFYC6THS	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	74	100%	-	-	-	-	-	-	67
FMP1269	DFYC6THW	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	64	100%	-	-	-	-	-	-	67
FMP1270	DFYC8THE	-	0	28	7	6.8	11	18	63	47	0.4	1.5	5.3	81	25%	86	50%	91	25%	-	-	71
FMP1271	DFYC8THS	-	0	28	7	6.8	11	18	63	47	0.4	1.5	5.3	74	100%	-	-	-	-	-	-	71
FMP1272	DFYC8THW	-	0	28	7	6.8	11	18	63	47	0.4	1.5	5.3	64	100%	-	-	-	-	-	-	71
FMP1273	DFYC10THE	-	0	25	6	8.0	12	20	55	48	1.0	2.1	7.1	76	25%	81	50%	86	25%	-	-	71
FMP1274	DFYC10THS	-	0	25	6	8.0	12	20	55	48	1.0	2.1	7.1	70	100%	-	-	-	-	-	-	71
FMP1275	DFYC10THW	-	0	25	6	8.0	12	20	55	48	1.0	2.1	7.1	64	100%	-	-	-	-	-	-	71
FMP1276	DFYC12THE	-	0	23	7	7.9	12	21	58	48	0.4	1.6	6.0	71	25%	76	50%	81	25%	-	-	71
FMP1277	DFYC12THS	-	0	23	7	7.9	12	21	58	48	0.4	1.6	6.0	69	100%	-	-	-	-	-	-	71
FMP1278	DFYC12THW	-	0	23	7	7.9	12	21	58	48	0.4	1.6	6.0	60	100%	-	-	-	-	-	-	71
FMP1279	DFYC14THE	-	0	21	6	9.1	15	24	51	49	0.6	1.9	8.0	66	25%	71	50%	76	25%	-	-	71
FMP1280	DFYC14THS	-	0	21	6	9.1	15	24	51	49	0.6	1.9	8.0	67	100%	-	-	-	-	-	-	71
FMP1281	DFYC14THW	-	0	21	6	9.1	15	24	51	49	0.6	1.9	8.0	55	100%	-	-	-	-	-	-	71
FMP1282	DFYC16THE	-	0	19	7	9.0	15	28	54	48	0.3	1.6	6.9	64	25%	69	50%	74	25%	-	-	71
FMP1283	DFYC16THS	-	0	19	7	9.0	15	28	54	48	0.3	1.6	6.9	59	100%	-	-	-	-	-	-	71
FMP1284	DFYC16THW	-	0	19	7	9.0	15	28	54	48	0.3	1.6	6.9	63	100%	-	-	-	-	-	-	71
FMP1285	DFYC18THE	-	0	18	7	9.3	16	30	53	49	0.4	1.7	7.0	63	25%	68	50%	73	25%	-	-	71

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FMP1286	DFYC18THS	-	0	18	7	9.3	16	30	53	49	0.4	1.7	7.0	57	100%	-	-	-	-	-	-	71
FMP1287	DFYC18THW	-	0	18	7	9.3	16	30	53	49	0.4	1.7	7.0	62	100%	-	-	-	-	-	-	71
FMP1288	DFYC20THE	-	0	17	7	9.6	17	32	52	49	0.3	1.6	7.2	62	25%	67	50%	72	25%	-	-	71
FMP1289	DFYC20THS	-	0	17	7	9.6	17	32	52	49	0.3	1.6	7.2	56	100%	-	-	-	-	-	-	71
FMP1290	DFYC20THW	-	0	17	7	9.6	17	32	52	49	0.3	1.6	7.2	61	100%	-	-	-	-	-	-	71
FMP1291	DFYC22THE	-	0	17	6	10	18	30	47	50	0.5	1.9	8.8	61	25%	66	50%	71	25%	-	-	71
FMP1292	DFYC22THS	-	0	17	6	10	18	30	47	50	0.5	1.9	8.8	56	100%	-	-	-	-	-	-	71
FMP1293	DFYC22THW	-	0	17	6	10	18	30	47	50	0.5	1.9	8.8	61	100%	-	-	-	-	-	-	71
FMP1294	DFYC24THE	-	0	16	6	11	19	34	46	50	1.0	2.3	9.2	61	25%	66	50%	71	25%	-	-	71
FMP1295	DFYC24THS	-	0	16	6	11	19	34	46	50	1.0	2.3	9.2	56	100%	-	-	-	-	-	-	71
FMP1296	DFYC24THW	-	0	16	6	11	19	34	46	50	1.0	2.3	9.2	61	100%	-	-	-	-	-	-	71
FMP1297	DFYC26THE	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	61	25%	66	50%	71	25%	-	-	72
FMP1298	DFYC26THS	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	56	100%	-	-	-	-	-	-	72
FMP1299	GFYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	75	100%	-	-	-	-	-	-	67
FMP1300	GFYC6THS	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	60	100%	-	-	-	-	-	-	68
FMP1301	GFYC8THE	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	59	100%	-	-	-	-	-	-	68
FMP1302	GFYC8THS	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	60	100%	-	-	-	-	-	-	68
FMP1303	GFYC10THE	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	54	100%	-	-	-	-	-	-	68
FMP1304	GFYC10THS	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	60	100%	-	-	-	-	-	-	68
FMP1305	GFYC10THW	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	66	100%	-	-	-	-	-	-	68
FMP1306	GFYC12THE	-	0	27	5	8.2	12	19	52	18	0.1	1.6	6.0	49	100%	-	-	-	-	-	-	72
FMP1307	GFYC12THS	-	0	27	5	8.2	12	19	52	18	0.1	1.6	6.0	60	100%	-	-	-	-	-	-	72
FMP1308	GFYC12THW	-	0	27	5	8.2	12	19	52	18	0.1	1.6	6.0	61	100%	-	-	-	-	-	-	72

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FMP1309	GFYC14THE	-	0	25	4	10	15	21	45	21	0.1	1.9	8.5	45	100%	-	-	-	-	-	-	72
FMP1310	GFYC14THS	-	0	25	4	10	15	21	45	21	0.1	1.9	8.5	60	100%	-	-	-	-	-	-	72
FMP1311	GFYC14THW	-	0	25	4	10	15	21	45	21	0.1	1.9	8.5	56	100%	-	-	-	-	-	-	72
FMP1312	GFYC16THE	-	0	24	5	9.0	14	22	49	21	0.1	1.6	6.6	42	100%	-	-	-	-	-	-	72
FMP1313	GFYC16THS	-	0	24	5	9.0	14	22	49	21	0.1	1.6	6.6	60	100%	-	-	-	-	-	-	72
FMP1314	GFYC16THW	-	0	24	5	9.0	14	22	49	21	0.1	1.6	6.6	53	100%	-	-	-	-	-	-	72
FMP1315	GFYC18THE	-	0	23	5	9.3	15	23	48	23	0.1	1.6	6.8	40	100%	-	-	-	-	-	-	72
FMP1316	GFYC18THS	-	0	23	5	9.3	15	23	48	23	0.1	1.6	6.8	60	100%	-	-	-	-	-	-	72
FMP1317	GFYC18THW	-	0	23	5	9.3	15	23	48	23	0.1	1.6	6.8	51	100%	-	-	-	-	-	-	72
FMP1318	GFYC20THE	-	0	22	5	9.7	16	25	47	25	0.1	1.5	7.1	37	100%	-	-	-	-	-	-	72
FMP1319	GFYC20THS	-	0	22	5	9.7	16	25	47	25	0.1	1.5	7.1	60	100%	-	-	-	-	-	-	72
FMP1320	GFYC20THW	-	0	22	5	9.7	16	25	47	25	0.1	1.5	7.1	49	100%	-	-	-	-	-	-	72
FMP1321	GFYC22THE	-	0	21	5	10	17	28	46	28	0.1	1.5	7.4	37	100%	-	-	-	-	-	-	72
FMP1322	GFYC22THS	-	0	21	5	10	17	28	46	28	0.1	1.5	7.4	60	100%	-	-	-	-	-	-	72
FMP1323	GFYC22THW	-	0	21	5	10	17	28	46	28	0.1	1.5	7.4	49	100%	-	-	-	-	-	-	72
FMP1324	GFYC24THE	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	37	100%	-	-	-	-	-	-	72
FMP1325	GFYC24THS	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	60	100%	-	-	-	-	-	-	72
FMP1326	GFYC24THW	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	49	100%	-	-	-	-	-	-	72
FMP1327	GFYC26THE	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	37	100%	-	-	-	-	-	-	72
FMP1328	GFYC26THS	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	60	100%	-	-	-	-	-	-	72
FMP1329	GFYC26THW	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	49	100%	-	-	-	-	-	-	72
FMP1330	GFYC28THE	-	0	20	4	12	19	29	40	35	0.1	1.6	10	37	100%	-	-	-	-	-	-	72
FMP1331	GFYC28THS	-	0	20	4	12	19	29	40	35	0.1	1.6	10	60	100%	-	-	-	-	-	-	72

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1332	GFYC28THW	-	0	20	4	12	19	29	40	35	0.1	1.6	10	49	100%	-	-	-	-	-	-	72
FMP1333	GFYC30THE	-	0	19	5	11	19	32	44	38	0.1	1.4	8.0	37	100%	-	-	-	-	-	-	72
FMP1334	GFYC30THS	-	0	19	5	11	19	32	44	38	0.1	1.4	8.0	60	100%	-	-	-	-	-	-	72
FMP1335	GFYC30THW	-	0	19	5	11	19	32	44	38	0.1	1.4	8.0	49	100%	-	-	-	-	-	-	72
FMP1336	NFYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	75	100%	-	-	-	-	-	-	67
FMP1337	NFYC6THS	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	60	100%	-	-	-	-	-	-	68
FMP1338	NFYC6THW	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	75	100%	-	-	-	-	-	-	68
FMP1339	NFYC8THE	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	59	100%	-	-	-	-	-	-	68
FMP1340	NFYC8THS	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	60	100%	-	-	-	-	-	-	68
FMP1341	NFYC8THW	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	71	100%	-	-	-	-	-	-	68
FMP1342	NFYC10THE	-	0	34	7	5.9	8.0	12	69	45	0.8	1.8	4.7	54	100%	-	-	-	-	-	-	70
FMP1343	NFYC10THS	-	0	34	7	5.9	8.0	12	69	45	0.8	1.8	4.7	60	100%	-	-	-	-	-	-	70
FMP1344	NFYC10THW	-	0	34	7	5.9	8.0	12	69	45	0.8	1.8	4.7	66	100%	-	-	-	-	-	-	70
FMP1345	NFYC12THE	-	0	31	7	6.3	8.9	13	66	46	1.8	2.4	4.8	49	100%	-	-	-	-	-	-	70
FMP1346	NFYC12THS	-	0	31	7	6.3	8.9	13	66	46	1.8	2.4	4.8	60	100%	-	-	-	-	-	-	70
FMP1347	NFYC12THW	-	0	31	7	6.3	8.9	13	66	46	1.8	2.4	4.8	61	100%	-	-	-	-	-	-	70
FMP1348	NFYC14THE	-	0	29	7	6.7	10	15	64	46	1.9	2.5	5.4	45	100%	-	-	-	-	-	-	70
FMP1349	NFYC14THS	-	0	29	7	6.7	10	15	64	46	1.9	2.5	5.4	60	100%	-	-	-	-	-	-	70
FMP1350	NFYC14THW	-	0	29	7	6.7	10	15	64	46	1.9	2.5	5.4	56	100%	-	-	-	-	-	-	70
FMP1351	NFYC16THE	-	0	27	7	7.1	10	16	62	47	1.8	2.6	5.7	42	100%	-	-	-	-	-	-	70
FMP1352	NFYC16THS	-	0	27	7	7.1	10	16	62	47	1.8	2.6	5.7	60	100%	-	-	-	-	-	-	70
FMP1353	NFYC16THW	-	0	27	7	7.1	10	16	62	47	1.8	2.6	5.7	53	100%	-	-	-	-	-	-	70
FMP1354	NFYC18THE	-	0	25	7	7.5	11	18	60	47	2.5	3.0	6.1	40	100%	-	-	-	-	-	-	70

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1355	NFYC18THS	-	0	25	7	7.5	11	18	60	47	2.5	3.0	6.1	60	100%	-	-	-	-	-	-	70
FMP1356	NFYC18THW	-	0	25	7	7.5	11	18	60	47	2.5	3.0	6.1	51	100%	-	-	-	-	-	-	70
FMP1357	NFYC20THE	-	0	23	7	8.0	13	21	58	48	2.6	3.2	6.8	37	100%	-	-	-	-	-	-	70
FMP1358	NFYC20THS	-	0	23	7	8.0	13	21	58	48	2.6	3.2	6.8	60	100%	-	-	-	-	-	-	70
FMP1359	NFYC20THW	-	0	23	7	8.0	13	21	58	48	2.6	3.2	6.8	49	100%	-	-	-	-	-	-	70
FMP1360	NFYC22THE	-	0	22	7	8.2	13	22	57	48	1.9	2.9	7.0	37	100%	-	-	-	-	-	-	70
FMP1361	NFYC22THS	-	0	22	7	8.2	13	22	57	48	1.9	2.9	7.0	60	100%	-	-	-	-	-	-	70
FMP1362	NFYC22THW	-	0	22	7	8.2	13	22	57	48	1.9	2.9	7.0	49	100%	-	-	-	-	-	-	70
FMP1363	NFYC24THS	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	60	100%	-	-	-	-	-	-	72
FMP1364	NFYC24THW	-	0	21	5	10	16	27	46	28	0.1	1.5	7.2	49	100%	-	-	-	-	-	-	72
FMP1365	NFYC26THS	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	60	100%	-	-	-	-	-	-	72
FMP1366	NFYC28THS	-	0	20	4	12	19	29	40	35	0.1	1.6	10	60	100%	-	-	-	-	-	-	72
FMP1367	WHYC4THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	59	100%	-	-	-	-	-	-	67
FMP1368	WHYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	75	100%	-	-	-	-	-	-	67
FMP1369	WHYC6THE	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	61	100%	-	-	-	-	-	-	68
FMP1370	WHYC6THS	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	60	100%	-	-	-	-	-	-	68
FMP1371	WHYC6THW	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	75	100%	-	-	-	-	-	-	68
FMP1372	WHYC8THE	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	59	100%	-	-	-	-	-	-	68
FMP1373	WHYC8THS	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	60	100%	-	-	-	-	-	-	68
FMP1374	WHYC8THW	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	71	100%	-	-	-	-	-	-	68
FMP1375	WHYC10THE	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	54	100%	-	-	-	-	-	-	68
FMP1376	WHYC10THS	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	60	100%	-	-	-	-	-	-	68
FMP1377	WHYC10THW	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	66	100%	-	-	-	-	-	-	68

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FMP1378	WHYC12THE	-	0	28	8	7.1	12	23	68	46	1.1	2.4	6.0	49	100%	-	-	-	-	-	-	76
FMP1379	WHYC12THS	-	0	28	8	7.1	12	23	68	46	1.1	2.4	6.0	60	100%	-	-	-	-	-	-	76
FMP1380	WHYC12THW	-	0	28	8	7.1	12	23	68	46	1.1	2.4	6.0	61	100%	-	-	-	-	-	-	76
FMP1381	WHYC14THE	-	0	26	7	7.9	13	23	61	47	3.1	3.6	6.9	45	100%	-	-	-	-	-	-	76
FMP1382	WHYC14THS	-	0	26	7	7.9	13	23	61	47	3.1	3.6	6.9	60	100%	-	-	-	-	-	-	76
FMP1383	WHYC14THW	-	0	26	7	7.9	13	23	61	47	3.1	3.6	6.9	56	100%	-	-	-	-	-	-	76
FMP1384	WHYC16THE	-	0	24	8	7.7	13	23	64	46	1.4	2.7	6.4	42	100%	-	-	-	-	-	-	76
FMP1385	WHYC16THS	-	0	24	8	7.7	13	23	64	46	1.4	2.7	6.4	60	100%	-	-	-	-	-	-	76
FMP1386	WHYC16THW	-	0	24	8	7.7	13	23	64	46	1.4	2.7	6.4	53	100%	-	-	-	-	-	-	76
FMP1387	WHYC18THE	-	0	22	7	8.8	14	26	57	48	1.1	2.6	7.6	40	100%	-	-	-	-	-	-	76
FMP1388	WHYC18THS	-	0	22	7	8.8	14	26	57	48	1.1	2.6	7.6	60	100%	-	-	-	-	-	-	76
FMP1389	WHYC18THW	-	0	22	7	8.8	14	26	57	48	1.1	2.6	7.6	51	100%	-	-	-	-	-	-	76
FMP1390	WHYC20THE	-	0	21	6	9.7	15	25	51	49	2.2	3.3	8.8	37	100%	-	-	-	-	-	-	76
FMP1391	WHYC20THS	-	0	21	6	9.7	15	25	51	49	2.2	3.3	-	60	100%	-	-	-	-	-	-	76
FMP1392	WHYC20THW	-	0	21	6	9.7	15	25	51	49	2.2	3.3	-	49	100%	-	-	-	-	-	-	76
FMP1393	WHYC22THE	-	0	20	6	10	16	25	50	49	1.9	3.3	-	37	100%	-	-	-	-	-	-	76
FMP1394	WHYC22THS	-	0	20	6	10	16	25	50	49	1.9	3.3	-	60	100%	-	-	-	-	-	-	76
FMP1395	WHYC22THW	-	0	20	6	10	16	25	50	49	1.9	3.3	-	49	100%	-	-	-	-	-	-	76
FMP1396	WHYC24THE	-	0	19	6	10	16	26	49	49	1.4	3.0	-	37	100%	-	-	-	-	-	-	76
FMP1397	WHYC24THS	-	0	19	6	10	16	26	49	49	1.4	3.0	-	60	100%	-	-	-	-	-	-	76
FMP1398	WHYC24THW	-	0	19	6	10	16	26	49	49	1.4	3.0	-	49	100%	-	-	-	-	-	-	76
FMP1399	WHYC26THS	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	60	100%	-	-	-	-	-	-	72
FMP1400	WHYC26THW	-	0	20	5	10	18	30	45	32	0.1	1.4	7.6	49	100%	-	-	-	-	-	-	72

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FMP1401	RCYC4THE	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	59	100%	-	-	-	-	-	-	67
FMP1402	RCYC4THW	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	75	100%	-	-	-	-	-	-	67
FMP1403	RCYC6THE	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	61	100%	-	-	-	-	-	-	68
FMP1404	RCYC6THS	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	60	100%	-	-	-	-	-	-	68
FMP1405	RCYC6THW	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	75	100%	-	-	-	-	-	-	68
FMP1406	RCYC8THE	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	59	100%	-	-	-	-	-	-	68
FMP1407	RCYC8THS	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	60	100%	-	-	-	-	-	-	68
FMP1408	RCYC8THW	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	71	100%	-	-	-	-	-	-	68
FMP1409	RCYC10THE	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	54	100%	-	-	-	-	-	-	68
FMP1410	RCYC10THS	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	60	100%	-	-	-	-	-	-	68
FMP1411	RCYC10THW	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	66	100%	-	-	-	-	-	-	68
FMP1412	RCYC12THE	-	0	30	7	6.4	9.5	15	65	46	1.1	1.9	4.8	49	100%	-	-	-	-	-	-	67
FMP1413	RCYC12THS	-	0	30	7	6.4	9.5	15	65	46	1.1	1.9	4.8	60	100%	-	-	-	-	-	-	67
FMP1414	RCYC12THW	-	0	30	7	6.4	9.5	15	65	46	1.1	1.9	4.8	61	100%	-	-	-	-	-	-	67
FMP1415	RCYC14THE	-	0	28	7	6.7	10	16	63	47	0.4	1.5	5.4	45	100%	-	-	-	-	-	-	67
FMP1416	RCYC14THS	-	0	28	7	6.7	10	16	63	47	0.4	1.5	5.4	60	100%	-	-	-	-	-	-	67
FMP1417	RCYC14THW	-	0	28	7	6.7	10	16	63	47	0.4	1.5	5.4	56	100%	-	-	-	-	-	-	67
FMP1418	RCYC16THE	-	0	28	7	6.7	10	16	63	47	0.4	1.5	5.4	42	100%	-	-	-	-	-	-	67
FMP1419	RCYC16THS	-	0	28	7	6.7	10	16	63	47	0.4	1.5	5.4	60	100%	-	-	-	-	-	-	67
FMP1420	RCYC16THW	-	0	28	7	6.7	10	16	63	47	0.4	1.5	5.4	53	100%	-	-	-	-	-	-	67
FMP1421	RCYC18THE	-	0	24	7	7.6	12	20	59	47	0.7	2.0	6.1	40	100%	-	-	-	-	-	-	67
FMP1422	RCYC18THS	-	0	24	7	7.6	12	20	59	47	0.7	2.0	6.1	60	100%	-	-	-	-	-	-	67
FMP1423	RCYC18THW	-	0	24	7	7.6	12	20	59	47	0.7	2.0	6.1	51	100%	-	-	-	-	-	-	67

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FMP1424	RCYC20THE	-	0	23	7	7.8	12	21	58	48	0.7	2.0	6.2	37	100%	-	-	-	-	-	-	67
FMP1425	RCYC20THS	-	0	23	7	7.8	12	21	58	48	0.7	2.0	6.2	60	100%	-	-	-	-	-	-	67
FMP1426	RCYC20THW	-	0	23	7	7.8	12	21	58	48	0.7	2.0	6.2	49	100%	-	-	-	-	-	-	67
FMP1427	RCYC22THE	-	0	22	6	8.7	13	22	52	49	1.1	2.3	7.5	37	100%	-	-	-	-	-	-	67
FMP1428	RCYC22THS	-	0	22	6	8.7	13	22	52	49	1.1	2.3	7.5	60	100%	-	-	-	-	-	-	67
FMP1429	RCYC22THW	-	0	22	6	8.7	13	22	52	49	1.1	2.3	7.5	49	100%	-	-	-	-	-	-	67
FMP1430	RCYC24THE	-	0	21	6	9.0	14	23	51	49	1.0	2.3	7.6	37	100%	-	-	-	-	-	-	67
FMP1431	RCYC24THS	-	0	21	6	9.0	14	23	51	49	1.0	2.3	7.6	60	100%	-	-	-	-	-	-	67
FMP1432	RCYC24THW	-	0	21	6	9.0	14	23	51	49	1.0	2.3	7.6	49	100%	-	-	-	-	-	-	67
FMP1433	OKYC2THESW	35	12	40	14	4.7	6.5	11	110	22	0.3	1.9	4.4	140	50%	160	50%	-	-	-	-	73
FMP1434	OKYC4THESW	35	12	40	14	4.7	6.5	11	110	22	0.3	1.9	4.4	120	33%	140	34%	160	33%	-	-	73
FMP1435	OKYC6THESW	25	9	30	14	5.5	8.2	16	100	39	0.4	2.1	5.3	100	33%	120	34%	140	33%	-	-	73
FMP1436	OKYC8THESW	20	6	25	14	6.2	10	20	95	40	2.4	3.6	6.1	100	50%	120	50%	-	-	-	-	73
FMP1437	AHYC2THESW	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	65	50%	80	50%	-	-	-	-	68
FMP1438	AHYC4THESW	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	65	50%	80	50%	-	-	-	-	68
FMP1439	AHYC6THESW	-	0	20	5	9.4	15	25	45	19	0.3	2.0	7.6	50	33%	65	34%	80	33%	-	-	68
FMP1440	AHYC8THESW	15	28	20	5	10	15	24	45	28	0.2	1.6	7.3	50	33%	65	34%	80	33%	-	-	68
FMP1441	AHYC10THESW	15	33	20	5	10	15	23	45	37	0.2	1.4	6.8	50	33%	65	34%	71	33%	-	-	68
FMP1442	AHYC12THESW	10	24	15	5	12	20	34	40	48	0.2	1.5	10	50	50%	65	50%	-	-	-	-	68
FMP1443	BEYC2THW	35	13	40	14	4.4	7.4	15	110	37	2.7	3.1	4.0	120	50%	140	50%	-	-	-	-	71
FMP1444	BEYC4THESW	35	13	40	14	4.4	7.4	15	110	37	2.7	3.1	4.0	120	50%	140	50%	-	-	-	-	71
FMP1445	BEYC6THESW	30	11	35	12	5.1	8.4	15	95	40	2.7	3.1	4.7	95	33%	120	34%	140	33%	-	-	71
FMP1446	BEYC8THESW	25	6.6	30	11	5.7	9.5	17	85	42	2.8	3.3	5.4	95	33%	120	34%	140	33%	-	-	71

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1447	BEYC10THESW	25	17	30	10	6.2	10	17	80	43	3.1	3.7	5.8	95	50%	115	50%	-	-	-	-	71
FMP1448	BEYC12THW	-	0	23	8	7.2	12	21	63	25	0.1	1.6	6.1	95	50%	115	50%	-	-	-	-	67
FMP1449	BIYC2THESW	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	65	50%	75	50%	-	-	-	-	68
FMP1450	BIYC4THESW	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	65	50%	75	50%	-	-	-	-	68
FMP1451	BIYC6THESW	-	0	20	5	9.4	15	25	45	19	0.3	2.0	7.6	60	50%	75	50%	-	-	-	-	68
FMP1452	BIYC8THESW	15	28	20	5	10	15	24	45	28	0.2	1.6	7.3	60	50%	70	50%	-	-	-	-	68
FMP1453	BIYC10THESW	15	33	20	5	10	15	23	45	37	0.2	1.4	6.8	50	50%	65	50%	-	-	-	-	68
FMP1454	BIYC12THESW	10	24	15	5	12	20	34	40	48	0.2	1.5	10	50	50%	65	50%	-	-	-	-	68
FMP1455	SYYC2THESW	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	65	50%	75	50%	-	-	-	-	68
FMP1456	SYYC4THESW	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	65	50%	75	50%	-	-	-	-	68
FMP1457	SYYC6THESW	-	0	20	5	9.4	15	25	45	19	0.3	2.0	7.6	60	50%	75	50%	-	-	-	-	68
FMP1458	SYYC8THESW	15	28	20	5	10	15	24	45	28	0.2	1.6	7.3	60	50%	70	50%	-	-	-	-	68
FMP1459	SYYC10THESW	15	33	20	5	10	15	23	45	37	0.2	1.4	6.8	50	50%	65	50%	-	-	-	-	68
FMP1460	SYYC12THESW	10	24	15	5	12	20	34	40	48	0.2	1.5	10	50	50%	65	50%	-	-	-	-	68
FMP1461	POYC2THESW	20	12	25	5	7.8	11	17	50	11	0.5	2.2	5.9	50	50%	60	50%	-	-	-	-	67
FMP1462	POYC4THESW	20	12	25	5	7.8	11	17	50	11	0.5	2.2	5.9	40	50%	50	50%	-	-	-	-	67
FMP1463	POYC6THESW	-	0	20	5	9.2	15	25	45	19	0.3	1.9	7.4	40	50%	50	50%	-	-	-	-	67
FMP1464	POYC8THESW	15	27	20	5	9.7	15	23	45	28	0.2	1.6	7.1	35	50%	45	50%	-	-	-	-	67
FMP1465	POYC10THESW	15	33	20	5	10	15	23	45	37	0.2	1.4	6.7	35	50%	45	50%	-	-	-	-	67
FMP1466	POYC12THESW	10	24	15	5	12	20	33	40	48	0.2	1.5	10	35	50%	45	50%	-	-	-	-	67
FMP1467	POYC14THE	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	35	50%	45	50%	-	-	-	-	67
FMP1468	NOYC2THES	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	50	50%	60	50%	-	-	-	-	68
FMP1469	NOYC4THES	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	50	50%	60	50%	-	-	-	-	68

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR m	LR $\bar{m}$	LR M	Rot1 Ag	Rot1 %	Rot2 Ag	Rot2 %	Rot3 Ag	Rot3 %	Rot4 Ag	Rot4 %	FC %BR
FMP1470	NOYC6THES	-	0	20	5	9.4	15	25	45	19	0.3	2.0	7.6	40	50%	50	50%	-	-	-	-	68
FMP1471	NOYC8THES	15	28	20	5	10	15	24	45	28	0.2	1.6	7.3	40	50%	50	50%	-	-	-	-	68
FMP1472	NOYC10THES	-	0	18	4	11	16	23	38	29	0.1	2.1	9.9	40	50%	50	50%	-	-	-	-	70
FMP1473	NOYC12THES	-	0	16	4	12	17	24	36	31	0.1	2.1	10	30	50%	40	50%	-	-	-	-	70
FMP1474	NOYC14THE	-	0	14	4	13	18	26	34	34	0.1	2.1	11	30	50%	40	50%	-	-	-	-	70
FMP1475	NOYC18THE	-	0	12	3	17	22	29	27	44	0.1	2.4	14	25	50%	30	50%	-	-	-	-	70

Public and private forest estate (Northern Ireland): Forest Management Practices involving clearcutting with no thinning during the rotation

Note that five rotations are assigned for each FMP. Equal proportions of forest area within a stratum are assigned to each of the 5 rotations.

Forest management practice		Silvicultural operations with final harvesting – No thinning					
Index	Name of practice	Final cutting – equal proportion each rotation					
		Age (years)					% BR
		Rot. 1	Rot. 2	Rot. 3	Rot. 4	Rot. 5	
FMP1476	NSYC6NTNI	81	57	58	59	60	66
FMP1477	NSYC8NTNI	70	57	58	59	60	66
FMP1478	NSYC10NTNI	66	57	58	59	60	66
FMP1479	NSYC12NTNI	59	57	58	59	60	66
FMP1480	NSYC14NTNI	56	57	58	59	60	66
FMP1481	NSYC16NTNI	50	57	58	59	60	66
FMP1482	NSYC18NTNI	48	57	58	59	60	66
FMP1483	NSYC20NTNI	47	57	58	59	60	66
FMP1484	NSYC22NTNI	51	57	58	59	60	66
FMP1485	SSYC6NTNI	37	57	58	59	60	68
FMP1486	SSYC8NTNI	34	57	58	59	60	68
FMP1487	SSYC10NTNI	32	57	58	59	60	68
FMP1488	SSYC12NTNI	31	57	58	59	60	68
FMP1489	SSYC14NTNI	29	57	58	59	60	68
FMP1490	SSYC16NTNI	29	57	58	59	60	68
FMP1491	SSYC18NTNI	28	57	58	59	60	68
FMP1492	SSYC20NTNI	28	57	58	59	60	68
FMP1493	SSYC22NTNI	27	57	58	59	60	68
FMP1494	SPYC4NTNI	80	57	58	59	60	67
FMP1495	SPYC6NTNI	70	57	58	59	60	67
FMP1496	SPYC8NTNI	61	57	58	59	60	67
FMP1497	SPYC10NTNI	57	57	58	59	60	67
FMP1498	SPYC12NTNI	59	57	58	59	60	67
FMP1499	SPYC14NTNI	57	57	58	59	60	67
FMP1500	CPYC6NTNI	56	57	58	59	60	73

Forest management practice		Silvicultural operations with final harvesting – No thinning					
Index	Name of practice	Final cutting – equal proportion each rotation					
		Age (years)					% BR
		Rot. 1	Rot. 2	Rot. 3	Rot. 4	Rot. 5	
FMP1501	CPYC8NTNI	50	57	58	59	60	73
FMP1502	CPYC10NTNI	47	57	58	59	60	73
FMP1503	CPYC12NTNI	44	57	58	59	60	73
FMP1504	CPYC14NTNI	37	57	58	59	60	73
FMP1505	CPYC16NTNI	36	57	58	59	60	73
FMP1506	CPYC18NTNI	35	57	58	59	60	73
FMP1507	LPYC4NTNI	79	57	58	59	60	67
FMP1508	LPYC6NTNI	59	57	58	59	60	67
FMP1509	LPYC8NTNI	48	57	58	59	60	67
FMP1510	LPYC10NTNI	40	57	58	59	60	67
FMP1511	LPYC12NTNI	37	57	58	59	60	67
FMP1512	LPYC14NTNI	35	57	58	59	60	67
FMP1513	ELYC6NTNI	46	57	58	59	60	80
FMP1514	ELYC8NTNI	42	57	58	59	60	80
FMP1515	ELYC10NTNI	40	57	58	59	60	80
FMP1516	ELYC12NTNI	38	57	58	59	60	80
FMP1517	JLYC4NTNI	41	57	58	59	60	76
FMP1518	JLYC6NTNI	32	57	58	59	60	76
FMP1519	JLYC8NTNI	29	57	58	59	60	76
FMP1520	JLYC10NTNI	27	57	58	59	60	76
FMP1521	JLYC12NTNI	25	57	58	59	60	76
FMP1522	JLYC14NTNI	24	57	58	59	60	76
FMP1523	DFYC12NTNI	43	57	58	59	60	71
FMP1524	DFYC14NTNI	41	57	58	59	60	71
FMP1525	DFYC16NTNI	34	57	58	59	60	71
FMP1526	DFYC18NTNI	33	57	58	59	60	71
FMP1527	DFYC20NTNI	32	57	58	59	60	71
FMP1528	DFYC22NTNI	32	57	58	59	60	71
FMP1529	GFYC14NTNI	45	57	58	59	60	72
FMP1530	NFYC10NTNI	64	57	58	59	60	70
FMP1531	NFYC12NTNI	66	57	58	59	60	70
FMP1532	NFYC14NTNI	59	57	58	59	60	70
FMP1533	NFYC16NTNI	57	57	58	59	60	70

Forest management practice		Silvicultural operations with final harvesting – No thinning					
Index	Name of practice	Final cutting – equal proportion each rotation					
		Age (years)					% BR
		Rot. 1	Rot. 2	Rot. 3	Rot. 4	Rot. 5	
FMP1534	NFYC18NTNI	60	57	58	59	60	70
FMP1535	NFYC20NTNI	58	57	58	59	60	70
FMP1536	WHYC12NTNI	73	57	58	59	60	76
FMP1537	WHYC14NTNI	61	57	58	59	60	76
FMP1538	WHYC16NTNI	54	57	58	59	60	76
FMP1539	WHYC18NTNI	52	57	58	59	60	76
FMP1540	RCYC12NTNI	60	57	58	59	60	67
FMP1541	RCYC14NTNI	58	57	58	59	60	67
FMP1542	RCYC16NTNI	56	57	58	59	60	67
FMP1543	RCYC18NTNI	54	57	58	59	60	67
FMP1544	OKYC4NTNI	90	-	-	-	-	73
FMP1545	OKYC6NTNI	80	-	-	-	-	73
FMP1546	OKYC8NTNI	70	-	-	-	-	73
FMP1547	AHYC4NTNI	50	-	-	-	-	68
FMP1548	AHYC6NTNI	45	-	-	-	-	68
FMP1549	AHYC8NTNI	45	-	-	-	-	68
FMP1550	AHYC10NTNI	40	-	-	-	-	68
FMP1551	AHYC12NTNI	40	-	-	-	-	68
FMP1552	BEYC4NTNI	105	-	-	-	-	71
FMP1553	BEYC6NTNI	95	-	-	-	-	71
FMP1554	BEYC8NTNI	85	-	-	-	-	71
FMP1555	BEYC10NTNI	80	-	-	-	-	71
FMP1556	BIYC4NTNI	50	-	-	-	-	68
FMP1557	BIYC6NTNI	45	-	-	-	-	68
FMP1558	BIYC8NTNI	45	-	-	-	-	68
FMP1559	BIYC10NTNI	40	-	-	-	-	68
FMP1560	SYYC4NTNI	50	-	-	-	-	68
FMP1561	SYYC6NTNI	45	-	-	-	-	68
FMP1562	SYYC8NTNI	45	-	-	-	-	68
FMP1563	SYYC10NTNI	40	-	-	-	-	68
FMP1564	SYYC12NTNI	40	-	-	-	-	68
FMP1565	POYC4NTNI	39	-	-	-	-	67
FMP1566	POYC6NTNI	36	-	-	-	-	67

Forest management practice		Silvicultural operations with final harvesting – No thinning					
Index	Name of practice	Final cutting – equal proportion each rotation					
		Age (years)					% BR
		Rot. 1	Rot. 2	Rot. 3	Rot. 4	Rot. 5	
FMP1567	POYC8NTNI	39	-	-	-	-	67
FMP1568	POYC10NTNI	37	-	-	-	-	67
FMP1569	POYC14NTNI	39	-	-	-	-	67
FMP1570	NOYC10NTNI	43	-	-	-	-	70

Public and private forest estate (Northern Ireland): Forest Management Practices involving clearcutting with thinning during the rotation

Note that up to five rotations are assigned for each FMP. Equal proportions of forest area within a stratum are assigned to each of the (up to 5) rotations.

Forest management practice		**Silvicultural operations with final harvesting – Thinning**																	
Index	Name of practice	Initial thinning		Main thinnings					Late-rotation thinnings					Final cutting - Equal proportion each rotation					
		Age (years)	% biomass removals	Age of first (years)	Number of (5 year cycles)	% biomass removals			Age of first (years)	Number of (5 year cycles)	% biomass removals			Age (years)					% biomass removals
						Min.	Mean	Max.			Min.	Mean	Max.	Rotation 1	Rotation 2	Rotation 3	Rotation 4	Rotation 5	
ID	Name	IT Ag	IT %	MT Ag	MT c.	MT% m	MT %$\overline{m}$	MT %M	LR Ag	LR c.	LR m	LR $\overline{m}$	LR M	FC Rot1	FC Rot2	FC Rot3	FC Rot4	FC Rot5	FC %

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT $\%\overline{m}$	MT %M	LR Ag	LR c.	LR %m	LR $\%\overline{m}$	LR %M	FC Rot1	FC Rot2	FC Rot3	FC Rot4	FC Rot5	FC %
FMP1571	NSYC6THNI	-	0	35	7	6.1	10	16	70	34	0.1	1.1	5.2	86	57	58	59	60	66
FMP1572	NSYC8THNI	-	0	31	8	5.9	10	17	71	45	0.4	1.4	4.5	75	57	58	59	60	66
FMP1573	NSYC10THNI	-	0	28	8	6.3	11	20	68	46	0.3	1.4	5.1	71	57	58	59	60	66
FMP1574	NSYC12THNI	-	0	26	8	6.6	12	22	66	46	0.8	1.8	5.6	69	57	58	59	60	66
FMP1575	NSYC14THNI	-	0	24	9	6.5	12	24	69	45	0.5	1.6	5.0	61	57	58	59	60	66
FMP1576	NSYC16THNI	-	0	23	8	7.1	13	25	63	47	0.2	1.4	6.1	60	57	58	59	60	66
FMP1577	NSYC18THNI	-	0	22	8	7.3	13	26	62	47	0.2	1.4	6.3	58	57	58	59	60	66
FMP1578	NSYC20THNI	-	0	21	8	7.5	14	28	61	47	0.1	1.3	6.6	57	57	58	59	60	66
FMP1579	NSYC22THNI	-	0	20	8	7.8	15	30	60	44	0.1	1.2	6.8	56	57	58	59	60	66
FMP1580	SSYC6THNI	-	0	33	5	6.7	10	14	58	46	0.3	1.4	5.6	60	57	58	59	60	68
FMP1581	SSYC8THNI	-	0	29	6	6.9	11	17	59	47	0.5	1.5	5.1	55	57	58	59	60	68
FMP1582	SSYC10THNI	-	0	26	6	7.5	12	20	56	47	0.2	1.2	5.7	52	57	58	59	60	68
FMP1583	SSYC12THNI	-	0	24	6	8.0	13	22	54	44	0.1	1.2	6.2	50	57	58	59	60	68
FMP1584	SSYC14THNI	-	0	22	6	8.5	15	25	52	38	0.1	1.3	6.7	48	57	58	59	60	68
FMP1585	SSYC16THNI	-	0	21	6	8.7	15	26	51	41	0.1	1.3	6.8	47	57	58	59	60	68
FMP1586	SSYC18THNI	-	0	20	5	10	17	26	45	42	0.1	1.5	8.8	46	57	58	59	60	68
FMP1587	SSYC20THNI	-	0	19	6	9.2	16	27	49	40	0.1	1.3	7.1	40	57	58	59	60	68
FMP1588	SSYC22THNI	-	0	18	6	9.5	16	28	48	39	0.1	1.4	7.3	39	57	58	59	60	68
FMP1589	SPYC4THNI	-	0	40	9	4.7	8.0	14	85	8	0.3	1.8	4.2	85	57	58	59	60	67
FMP1590	SPYC6THNI	-	0	33	10	5.1	8.7	16	83	12	0.2	1.4	3.9	75	57	58	59	60	67
FMP1591	SPYC8THNI	-	0	29	9	5.9	10	18	74	16	0.1	1.5	4.9	66	57	58	59	60	67
FMP1592	SPYC10THNI	-	0	25	8	6.9	12	21	65	20	0.1	1.8	6.1	62	57	58	59	60	67
FMP1593	SPYC12THNI	-	0	23	8	7.2	12	21	63	25	0.1	1.6	6.1	59	57	58	59	60	67

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR %m	LR %$\bar{m}$	LR %M	FC Rot1	FC Rot2	FC Rot3	FC Rot4	FC Rot5	FC %
FMP1594	SPYC14THNI	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	57	57	58	59	60	67
FMP1595	CPYC6THNI	-	0	33	6	6.6	8.8	12	63	47	0.5	1.7	5.3	61	57	58	59	60	73
FMP1596	CPYC8THNI	-	0	28	6	7.6	10	15	58	48	0.7	1.8	6.1	55	57	58	59	60	73
FMP1597	CPYC10THNI	-	0	25	6	8.3	12	17	55	48	0.8	2.0	6.8	52	57	58	59	60	73
FMP1598	CPYC12THNI	-	0	23	6	8.8	13	19	53	49	0.8	2.0	7.1	49	57	58	59	60	73
FMP1599	CPYC14THNI	-	0	21	6	9.5	14	22	51	49	1.8	2.5	7.8	47	57	58	59	60	73
FMP1600	CPYC16THNI	-	0	20	5	11	16	23	45	50	1.2	2.3	9.5	46	57	58	59	60	73
FMP1601	CPYC18THNI	-	0	19	6	10	16	25	49	49	1.4	2.3	8.1	45	57	58	59	60	73
FMP1602	LPYC4THNI	-	0	40	5	5.4	6.5	7.9	65	46	1.1	1.8	4.9	84	57	58	59	60	67
FMP1603	LPYC6THNI	-	0	31	7	6.0	7.9	11	66	46	1.6	2.3	4.8	64	57	58	59	60	67
FMP1604	LPYC8THNI	-	0	26	7	6.8	10	14	61	47	1.8	2.6	5.6	58	57	58	59	60	67
FMP1605	LPYC10THNI	-	0	23	7	7.4	11	17	58	48	2.4	3.0	6.2	50	57	58	59	60	67
FMP1606	LPYC12THNI	-	0	21	7	7.9	12	19	56	48	2.2	2.9	6.6	47	57	58	59	60	67
FMP1607	LPYC14THNI	-	0	19	7	8.4	13	23	54	48	1.2	2.5	7.0	45	57	58	59	60	67
FMP1608	ELYC6THNI	-	0	26	5	9.1	13	18	51	16	0.3	2.4	7.9	46	57	58	59	60	80
FMP1609	ELYC8THNI	-	0	22	6	9.6	14	22	52	20	0.3	2.1	7.1	42	57	58	59	60	80
FMP1610	ELYC10THNI	-	0	20	5	11	16	24	45	27	0.2	2.3	9.2	40	57	58	59	60	80
FMP1611	ELYC12THNI	-	0	18	5	12	18	26	43	34	0.2	2.2	9.9	38	57	58	59	60	80
FMP1612	JLYC4THNI	-	0	26	5	8.5	12	18	51	49	1.6	1.9	6.2	46	57	58	59	60	76
FMP1613	JLYC6THNI	-	0	22	5	9.7	14	21	47	50	2.7	3.6	7.9	42	57	58	59	60	76
FMP1614	JLYC8THNI	-	0	19	6	10	15	25	49	49	3.3	4.5	8.6	34	57	58	59	60	76
FMP1615	JLYC10THNI	-	0	17	5	12	18	28	42	45	4.2	10	76	32	57	58	59	60	76
FMP1616	JLYC12THNI	-	0	15	5	13	20	33	40	42	4.6	10	76	30	57	58	59	60	76

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT $\%\overline{m}$	MT %M	LR Ag	LR c.	LR %m	LR $\%\overline{m}$	LR %M	FC Rot1	FC Rot2	FC Rot3	FC Rot4	FC Rot5	FC %
FMP1617	JLYC14THNI	-	0	14	6	12	20	34	44	46	4.7	10	76	29	57	58	59	60	76
FMP1618	DFYC12THNI	-	0	23	7	7.9	12	21	58	48	0.4	1.6	6.0	48	57	58	59	60	71
FMP1619	DFYC14THNI	-	0	21	6	9.1	15	24	51	49	0.6	1.9	8.0	46	57	58	59	60	71
FMP1620	DFYC16THNI	-	0	19	7	9.0	15	28	54	48	0.3	1.6	6.9	44	57	58	59	60	71
FMP1621	DFYC18THNI	-	0	18	7	9.3	16	30	53	49	0.4	1.7	7.0	43	57	58	59	60	71
FMP1622	DFYC20THNI	-	0	17	7	9.6	17	32	52	49	0.3	1.6	7.2	42	57	58	59	60	71
FMP1623	DFYC22THNI	-	0	17	6	10	18	30	47	50	0.5	1.9	8.8	42	57	58	59	60	71
FMP1624	GFYC14THNI	-	0	25	4	10	15	21	45	21	0.1	1.9	8.5	45	57	58	59	60	72
FMP1625	NFYC10THNI	-	0	34	7	5.9	8.0	12	69	45	0.8	1.8	4.7	64	57	58	59	60	70
FMP1626	NFYC12THNI	-	0	31	7	6.3	8.9	13	66	46	1.8	2.4	4.8	66	57	58	59	60	70
FMP1627	NFYC14THNI	-	0	29	7	6.7	10	15	64	46	1.9	2.5	5.4	59	57	58	59	60	70
FMP1628	NFYC16THNI	-	0	27	7	7.1	10	16	62	47	1.8	2.6	5.7	57	57	58	59	60	70
FMP1629	NFYC18THNI	-	0	25	7	7.5	11	18	60	47	2.5	3.0	6.1	60	57	58	59	60	70
FMP1630	NFYC20THNI	-	0	23	7	8.0	13	21	58	48	2.6	3.2	6.8	58	57	58	59	60	70
FMP1631	WHYC12THNI	-	0	28	8	7.1	12	23	68	46	1.1	2.4	6.0	73	57	58	59	60	76
FMP1632	WHYC14THNI	-	0	26	7	7.9	13	23	61	47	3.1	3.6	6.9	61	57	58	59	60	76
FMP1633	WHYC16THNI	-	0	24	8	7.7	13	23	64	46	1.4	2.7	6.4	54	57	58	59	60	76
FMP1634	WHYC18THNI	-	0	22	7	8.8	14	26	57	48	1.1	2.6	7.6	52	57	58	59	60	76
FMP1635	RCYC12THNI	-	0	30	7	6.4	9.5	15	65	46	1.1	1.9	4.8	60	57	58	59	60	67
FMP1636	RCYC14THNI	-	0	28	7	6.7	10	16	63	47	0.4	1.5	5.4	58	57	58	59	60	67
FMP1637	RCYC16THNI	-	0	26	7	7.1	11	18	61	47	0.6	1.8	5.9	56	57	58	59	60	67
FMP1638	RCYC18THNI	-	0	24	7	7.6	12	20	59	47	0.7	2.0	6.1	54	57	58	59	60	67
FMP1639	OKYC4THNI	35	12	40	14	4.7	6.5	11	110	22	0.3	1.9	4.4	50	-	-	-	-	73

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT $\%\overline{m}$	MT %M	LR Ag	LR c.	LR %m	LR $\%\overline{m}$	LR %M	FC Rot1	FC Rot2	FC Rot3	FC Rot4	FC Rot5	FC %
FMP1640	OKYC6THNI	25	9	30	14	5.5	8.2	16	100	39	0.4	2.1	5.3	80	-	-	-	-	73
FMP1641	OKYC8THNI	20	6	25	14	6.2	10	20	95	40	2.4	3.6	6.1	70	-	-	-	-	73
FMP1642	AHYC4THNI	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	50	-	-	-	-	68
FMP1643	AHYC6THNI	-	0	20	5	9.4	15	25	45	19	0.3	2.0	7.6	45	-	-	-	-	68
FMP1644	AHYC8THNI	15	28	20	5	10	15	24	45	28	0.2	1.6	7.3	45	-	-	-	-	68
FMP1645	AHYC10THNI	15	33	20	5	10	15	23	45	37	0.2	1.4	6.8	40	-	-	-	-	68
FMP1646	AHYC12THNI	10	24	15	5	12	20	34	40	48	0.2	1.5	10	40	-	-	-	-	68
FMP1647	BEYC4THNI	35	13	40	14	4.4	7.4	15	110	37	2.7	3.1	4.0	105	-	-	-	-	71
FMP1648	BEYC6THNI	30	11	35	12	5.1	8.4	15	95	40	2.7	3.1	4.7	95	-	-	-	-	71
FMP1649	BEYC8THNI	25	6.6	30	11	5.7	9.5	17	85	42	2.8	3.3	5.4	85	-	-	-	-	71
FMP1650	BEYC10THNI	25	17	30	10	6.2	10	17	80	43	3.1	3.7	5.8	80	-	-	-	-	71
FMP1651	BIYC4THNI	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	50	-	-	-	-	68
FMP1652	BIYC6THNI	-	0	20	5	9.4	15	25	45	19	0.3	2.0	7.6	45	-	-	-	-	68
FMP1653	BIYC8THNI	15	28	20	5	10	15	24	45	28	0.2	1.6	7.3	45	-	-	-	-	68
FMP1654	BIYC10THNI	15	33	20	5	10	15	23	45	37	0.2	1.4	6.8	40	-	-	-	-	68
FMP1655	SYYC4THNI	20	12	25	5	8.0	11	18	50	11	0.5	2.3	6.0	50	-	-	-	-	68
FMP1656	SYYC6THNI	-	0	20	5	9.4	15	25	45	19	0.3	2.0	7.6	45	-	-	-	-	68
FMP1657	SYYC8THNI	15	28	20	5	10	15	24	45	28	0.2	1.6	7.3	45	-	-	-	-	68
FMP1658	SYYC10THNI	15	33	20	5	10	15	23	45	37	0.2	1.4	6.8	40	-	-	-	-	68
FMP1659	SYYC14THNI	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	40	-	-	-	-	67
FMP1660	POYC4THNI	20	12	25	5	7.8	11	17	50	11	0.5	2.2	5.9	94	-	-	-	-	67
FMP1661	POYC6THNI	-	0	20	5	9.2	15	25	45	19	0.3	1.9	7.4	74	-	-	-	-	67
FMP1662	POYC8THNI	15	27	20	5	9.7	15	23	45	28	0.2	1.6	7.1	68	-	-	-	-	67

ID	Name	IT Ag	IT %	MT Ag	MT c.	MT %m	MT %$\bar{m}$	MT %M	LR Ag	LR c.	LR %m	LR %$\bar{m}$	LR %M	FC Rot1	FC Rot2	FC Rot3	FC Rot4	FC Rot5	FC %
FMP1663	POYC10THNI	15	33	20	5	10	15	23	45	37	0.2	1.4	6.7	60	-	-	-	-	67
FMP1664	POYC14THNI	-	0	21	7	8.4	14	23	56	28	0.1	1.8	7.3	55	-	-	-	-	67
FMP1665	NOYC10THES	-	0	18	4	11	16	23	38	29	0.1	2.1	9.9	43	-	-	-	-	70

Annex 6 Detailed assignment of FMPs to the forest strata

England, Public forest estate

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	2	80.52	-	FMP2	FMP289	FMP588	29.23	5.42	21.95	43.40
NS	4	71.15	-	FMP5	FMP292	FMP589	30.79	25.73	11.15	32.32
NS	6	291.89	-	FMP8	FMP295	FMP590	28.80	35.09	11.03	25.08
NS	8	722.66	-	FMP11	FMP298	FMP591	26.11	27.53	10.21	36.15
NS	10	2 297.20	-	FMP14	FMP301	FMP592	25.52	21.66	15.71	37.11
NS	12	1 429.63	-	FMP17	FMP304	FMP593	24.90	9.56	19.05	46.48
NS	14	897.00	-	FMP20	FMP307	FMP594	24.75	3.62	29.69	41.93
NS	16	626.72	-	FMP23	FMP310	FMP595	24.71	2.02	31.68	41.60
NS	18	482.64	-	FMP26	FMP313	FMP596	24.48	2.77	41.93	30.82
NS	20	335.14	-	FMP29	FMP316	FMP597	24.40	1.42	54.34	19.84
NS	22	280.49	-	FMP32	FMP319	FMP598	24.39	0.48	58.47	16.67
NS	24	3.89	-	FMP35	FMP322	FMP599	24.38	0.69	18.33	56.60
NS	30	1.70	-	-	FMP324	FMP601	24.37	0.00	74.87	0.76
SS	2	92.82	-	FMP38	FMP325	FMP602	25.50	35.97	24.73	13.80
SS	4	155.03	-	FMP41	FMP328	FMP603	25.04	39.43	28.19	7.34
SS	6	673.23	-	FMP44	FMP331	FMP604	25.83	57.52	12.47	4.18
SS	8	1 835.53	-	FMP47	FMP334	FMP605	26.84	58.43	12.25	2.47

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SS	10	3 466.40	-	FMP50	FMP337	FMP606	25.23	55.57	14.11	5.09
SS	12	17 017.67	-	FMP53	FMP340	FMP607	25.04	47.03	18.23	9.70
SS	14	9 918.67	-	FMP56	FMP343	FMP608	25.10	40.78	25.65	8.47
SS	16	5 188.56	-	FMP59	FMP346	FMP609	25.41	36.08	30.96	7.55
SS	18	3 208.05	-	FMP62	FMP349	FMP610	24.96	32.01	31.12	11.92
SS	20	1 789.87	-	FMP65	FMP352	FMP611	25.40	27.98	36.52	10.09
SS	22	1 008.98	-	FMP68	FMP355	FMP612	25.19	28.16	35.75	10.89
SS	24	912.87	-	FMP71	FMP358	FMP613	24.62	14.51	49.04	11.83
SS	26	22.41	-	FMP74	FMP361	FMP614	24.58	4.99	64.71	5.72
SS	28	0.29	-	-	FMP364	FMP615	24.37	0.00	0.76	74.87
SP	2	182.36	-	FMP78	FMP367	FMP616	31.59	2.84	17.66	47.91
SP	4	275.06	-	FMP81	FMP370	FMP617	27.85	10.44	30.97	30.74
SP	6	923.61	-	FMP84	FMP373	FMP618	26.67	14.21	36.03	23.09
SP	8	2 822.78	-	FMP87	FMP376	FMP619	25.47	7.62	39.51	27.40
SP	10	5 084.38	-	FMP90	FMP379	FMP620	24.74	3.60	34.54	37.11
SP	12	4 372.19	-	FMP93	FMP382	FMP621	24.62	1.93	35.73	37.72
SP	14	2 119.67	-	FMP96	FMP385	FMP622	24.52	1.40	41.08	33.00
SP	16	54.27	-	FMP99	FMP388	FMP623	25.04	3.80	51.65	19.51
SP	18	6.57	-	-	FMP391	FMP624	24.37	0.00	42.08	33.55
CP	2	18.95	-	FMP101	FMP394	FMP626	24.38	0.19	61.79	13.64
CP	4	22.41	-	-	FMP396	FMP627	24.37	0.00	61.39	14.24

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
CP	6	64.52	-	FMP106	FMP399	FMP628	25.94	11.71	39.69	22.66
CP	8	225.20	-	FMP109	FMP402	FMP629	24.52	2.63	43.75	29.10
CP	10	818.19	-	FMP112	FMP405	FMP630	25.00	1.06	51.85	22.09
CP	12	3 476.31	-	FMP115	FMP408	FMP631	24.42	0.60	51.17	23.81
CP	14	10 619.02	-	FMP118	FMP411	FMP632	24.38	0.19	59.59	15.84
CP	16	5 210.28	-	FMP121	FMP414	FMP633	24.38	0.20	59.64	15.78
CP	18	1 210.78	-	FMP123	FMP416	FMP634	24.39	0.25	54.77	20.58
CP	20	787.51	-	-	FMP418	FMP635	24.37	0.00	58.65	16.98
CP	22	0.40	-	-	FMP420	FMP636	24.37	0.00	73.38	2.25
CP	24	0.20	-	-	-	FMP637	24.37	0.00	0.00	75.63
LP	2	57.80	-	FMP127	FMP422	-	26.13	45.00	28.86	0.00
LP	4	702.23	-	FMP130	FMP425	FMP639	27.19	54.63	13.99	4.19
LP	6	1 035.10	-	FMP133	FMP428	FMP640	25.58	47.30	24.19	2.93
LP	8	1 063.88	-	FMP136	FMP431	FMP641	25.44	35.61	33.17	5.78
LP	10	366.11	-	FMP139	FMP434	FMP642	26.37	24.22	38.62	10.79
LP	12	168.10	-	FMP142	FMP437	FMP643	24.71	14.62	44.68	15.99
LP	14	61.16	-	FMP145	FMP440	FMP644	31.04	14.51	39.73	14.72
LP	16	5.40	-	-	FMP443	FMP645	24.37	0.00	55.41	20.22
LP	18	1.93	-	-	FMP446	FMP646	24.37	0.00	73.03	2.60
LP	20	70.93	-	-	FMP447	FMP647	24.37	0.00	48.36	27.27
EL	2	9.77	-	-	FMP449	FMP648	24.37	0.00	0.03	75.60

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
EL	4	32.28	-	FMP151	FMP452	FMP649	27.62	12.03	33.09	27.25
EL	6	190.35	-	FMP154	FMP455	FMP650	26.38	1.41	28.67	43.54
EL	8	361.58	-	FMP157	FMP458	FMP651	26.35	2.54	30.03	41.07
EL	10	295.35	-	FMP160	FMP461	FMP652	24.51	1.46	26.69	47.34
EL	12	323.90	-	FMP163	FMP464	FMP653	24.39	3.15	39.30	33.16
EL	14	5.17	-	FMP166	FMP467	FMP654	25.43	1.07	49.07	24.44
EL	16	0.35	-	-	FMP470	FMP655	24.37	0.00	17.10	58.52
EL	18	0.53	-	-	FMP472	FMP656	24.37	0.00	74.87	0.76
JL	2	16.80	-	FMP169	FMP473	FMP657	27.93	6.49	60.60	4.98
JL	4	111.45	-	FMP172	FMP476	FMP658	27.04	34.58	21.63	16.75
JL	6	489.15	-	FMP175	FMP479	FMP659	26.48	14.41	44.40	14.70
JL	8	1 302.89	-	FMP178	FMP482	FMP660	24.71	7.47	38.59	29.22
JL	10	1 930.57	-	FMP181	FMP485	FMP661	24.84	6.46	35.44	33.25
JL	12	1 768.49	-	FMP184	FMP488	FMP662	24.64	6.91	37.30	31.15
JL	14	1 648.32	-	FMP187	FMP491	FMP663	24.64	4.70	47.12	23.54
JL	16	50.81	-	FMP190	FMP494	FMP664	24.41	7.68	52.76	15.15
JL	18	0.98	-	-	FMP497	FMP665	24.37	0.00	31.36	44.27
JL	20	1.78	-	-	FMP498	FMP666	24.37	0.00	73.62	2.01
DF	2	6.05	-	FMP194	FMP500	FMP668	26.82	6.39	10.91	55.89
DF	4	4.67	-	-	FMP503	FMP669	24.37	0.00	3.68	71.94
DF	6	11.69	-	-	-	FMP670	24.37	0.00	0.00	75.63
DF	8	170.74	-	FMP198	FMP508	FMP671	24.79	5.39	14.20	55.61

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
DF	10	373.13	-	FMP201	FMP511	FMP672	24.47	0.86	23.67	51.01
DF	12	1 222.73	-	FMP204	FMP514	FMP673	24.41	0.55	26.01	49.02
DF	14	1 515.31	-	FMP207	FMP517	FMP674	24.46	1.10	25.94	48.49
DF	16	1 731.95	-	FMP210	FMP520	FMP675	24.41	0.86	33.23	41.50
DF	18	1 367.82	-	FMP213	FMP523	FMP676	24.44	1.16	42.59	31.81
DF	20	1 091.27	-	FMP216	FMP526	FMP677	24.40	0.71	40.88	34.01
DF	22	786.92	-	FMP219	FMP529	FMP678	24.44	1.21	51.96	22.38
DF	24	979.15	-	FMP222	FMP532	FMP679	24.67	0.91	54.71	19.70
DF	26	3.95	-	-	FMP535	FMP680	24.37	0.00	28.91	46.72
GF	2	5.37	-	-	FMP536	FMP681	24.37	0.00	2.12	73.51
GF	4	0.59	-	-	-	FMP682	24.37	0.00	0.00	75.63
GF	6	3.97	-	-	FMP538	-	92.44	0.00	7.56	0.00
GF	8	5.01	-	-	FMP539	FMP684	24.37	0.00	0.56	75.06
GF	10	23.80	-	-	FMP540	FMP685	24.37	0.00	34.72	40.91
GF	12	64.91	-	FMP230	FMP541	FMP686	24.41	6.32	22.85	46.42
GF	14	70.04	-	FMP232	FMP542	FMP687	24.38	3.18	27.67	44.77
GF	16	74.22	-	FMP234	FMP543	FMP688	24.55	0.40	23.79	51.26
GF	18	47.51	-	FMP236	FMP544	FMP689	25.72	1.56	31.06	41.65
GF	20	40.02	-	FMP238	FMP545	FMP690	24.49	4.35	22.57	48.59
GF	22	24.18	-	FMP240	FMP546	FMP691	24.37	0.98	43.49	31.15
GF	24	18.41	-	FMP242	FMP547	FMP692	24.37	10.23	35.57	29.83
GF	26	22.14	-	FMP244	FMP548	FMP693	24.37	2.48	37.62	35.53

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
GF	28	11.01	-	FMP246	FMP549	FMP694	24.37	3.04	51.05	21.53
GF	30	21.48	-	-	FMP550	FMP695	24.37	0.00	44.24	31.38
NF	2	1.94	-	-	-	FMP696	24.37	0.00	0.00	75.63
NF	4	0.28	-	-	-	FMP697	24.37	0.00	0.00	75.63
NF	6	0.77	-	-	-	FMP698	24.37	0.00	0.00	75.63
NF	8	4.16	-	-	FMP554	FMP699	24.37	0.00	75.57	0.06
NF	10	6.91	-	FMP253	FMP555	FMP700	24.55	0.81	23.77	50.87
NF	12	20.46	-	FMP254	FMP556	FMP701	26.89	11.52	17.31	44.29
NF	14	22.18	-	FMP255	FMP557	FMP702	24.75	4.46	32.83	37.96
NF	16	17.81	-	FMP256	FMP558	FMP703	24.37	1.12	55.95	18.55
NF	18	8.70	-	-	FMP559	FMP704	24.37	0.00	21.01	54.62
NF	20	7.61	-	-	FMP560	FMP705	24.37	0.00	30.59	45.04
NF	22	13.15	-	FMP259	FMP561	FMP706	24.37	3.92	49.39	22.32
WH	2	6.51	-	-	FMP563	FMP708	24.37	0.00	19.32	56.31
WH	4	0.51	-	-	FMP564	FMP709	24.37	0.00	36.85	38.77
WH	6	2.31	-	-	FMP565	FMP710	24.38	0.00	26.16	49.46
WH	8	10.52	-	FMP266	FMP566	FMP711	28.14	4.96	7.47	59.42
WH	10	26.70	-	FMP267	FMP567	FMP712	24.53	10.55	13.86	51.07
WH	12	156.58	-	FMP268	FMP568	FMP713	25.58	5.44	33.24	35.74
WH	14	244.65	-	FMP269	FMP569	FMP714	25.02	1.94	40.73	32.31
WH	16	265.48	-	FMP270	FMP570	FMP715	24.59	2.52	33.62	39.28
WH	18	267.37	-	FMP271	FMP571	FMP716	24.45	2.39	45.49	27.68

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
WH	20	232.70	-	FMP272	FMP572	FMP717	24.72	2.71	42.11	30.46
WH	22	113.22	-	FMP273	FMP573	FMP718	24.46	1.17	43.02	31.36
WH	24	89.26	-	-	FMP574	FMP719	24.37	0.00	53.12	22.51
RC	2	4.69	-	-	FMP576	FMP721	24.38	0.00	1.37	74.26
RC	4	11.53	-	-	FMP577	FMP722	24.37	0.00	32.94	42.69
RC	6	8.75	-	-	FMP578	FMP723	24.37	0.00	6.84	68.79
RC	8	20.34	-	FMP279	FMP579	FMP724	25.27	0.01	18.61	56.11
RC	10	96.85	-	FMP280	FMP580	FMP725	24.68	0.14	16.49	58.69
RC	12	235.02	-	FMP281	FMP581	FMP726	27.97	2.61	19.91	49.50
RC	14	171.38	-	FMP282	FMP582	FMP727	24.41	1.12	20.20	54.26
RC	16	175.52	-	FMP283	FMP583	FMP728	24.69	2.24	22.26	50.81
RC	18	130.65	-	FMP284	FMP584	FMP729	24.37	1.59	21.73	52.30
RC	20	68.83	-	FMP285	FMP585	FMP730	24.37	2.61	42.85	30.17
RC	22	42.67	-	FMP286	FMP586	FMP731	24.37	4.73	51.24	19.66
RC	24	42.94	-	FMP287	FMP587	FMP732	24.37	0.11	69.04	6.48
OK	2	1 594.20	FMP1	-	-	FMP733	33.79	0.00	0.00	66.21
OK	4	6 720.47	FMP1	-	-	FMP734	34.14	0.00	0.00	65.86
OK	6	4 464.65	FMP1	-	-	FMP735	33.57	0.00	0.00	66.43
OK	8	648.40	FMP1	-	-	FMP736	33.65	0.00	0.00	66.35
OK	10	50.99	FMP1	-	-	FMP737	33.26	0.00	0.00	66.74
OK	12	2.64	FMP1	-	-	FMP738	33.26	0.00	0.00	66.74
OK	14	0.60	FMP1	-	-	FMP739	54.03	0.00	0.00	45.97

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
OK	16	1.64	FMP1	-	-	FMP740	33.26	0.00	0.00	66.74
AH	2	147.90	FMP1	-	-	FMP742	35.37	0.00	0.00	64.63
AH	4	1 107.68	FMP1	-	-	FMP743	35.28	0.00	0.00	64.72
AH	6	848.40	FMP1	-	-	FMP744	34.63	0.00	0.00	65.37
AH	8	530.96	FMP1	-	-	FMP745	37.02	0.00	0.00	62.98
AH	10	283.06	FMP1	-	-	FMP746	38.94	0.00	0.00	61.06
AH	12	176.95	FMP1	-	-	FMP747	38.89	0.00	0.00	61.11
AH	14	2.53	FMP1	-	-	FMP748	42.91	0.00	0.00	57.09
AH	16	0.78	FMP1	-	-	FMP749	34.47	0.00	0.00	65.53
BE	2	890.77	FMP1	-	-	FMP752	34.19	0.00	0.00	65.81
BE	4	1 893.77	FMP1	-	-	FMP753	34.00	0.00	0.00	66.00
BE	6	4 201.67	FMP1	-	-	FMP754	33.65	0.00	0.00	66.35
BE	8	3 371.16	FMP1	-	-	FMP755	33.56	0.00	0.00	66.44
BE	10	1 021.60	FMP1	-	-	FMP756	33.31	0.00	0.00	66.69
BE	12	10.67	FMP1	-	-	FMP757	33.26	0.00	0.00	66.74
BE	14	1.25	FMP1	-	-	FMP758	61.39	0.00	0.00	38.61
BI	2	1 249.47	FMP1	-	-	FMP761	35.37	0.00	0.00	64.63
BI	4	4 189.35	FMP1	-	-	FMP762	35.28	0.00	0.00	64.72
BI	6	1 268.72	FMP1	-	-	FMP763	34.63	0.00	0.00	65.37
BI	8	468.80	FMP1	-	-	FMP764	37.02	0.00	0.00	62.98
BI	10	198.25	FMP1	-	-	FMP765	38.94	0.00	0.00	61.06
BI	12	249.49	FMP1	-	-	FMP766	38.89	0.00	0.00	61.11

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
BI	14	15.32	FMP1	-	-	FMP767	42.91	0.00	0.00	57.09
BI	16	1.48	FMP1	-	-	FMP768	34.47	0.00	0.00	65.53
BI	18	0.45	FMP1	-	-	FMP769	71.82	0.00	0.00	28.18
SY	2	2 905.16	FMP1	-	-	FMP772	35.37	0.00	0.00	64.63
SY	4	5 561.41	FMP1	-	-	FMP773	35.28	0.00	0.00	64.72
SY	6	1 545.12	FMP1	-	-	FMP774	34.63	0.00	0.00	65.37
SY	8	535.72	FMP1	-	-	FMP775	37.02	0.00	0.00	62.98
SY	10	230.56	FMP1	-	-	FMP776	38.94	0.00	0.00	61.06
SY	12	1 272.50	FMP1	-	-	FMP777	38.89	0.00	0.00	61.11
SY	14	49.68	FMP1	-	-	FMP778	42.91	0.00	0.00	57.09
SY	16	3.45	FMP1	-	-	FMP779	34.47	0.00	0.00	65.53
SY	18	1.34	FMP1	-	-	FMP780	71.82	0.00	0.00	28.18
SY	20	2.77	FMP1	-	-	FMP781	47.72	0.00	0.00	52.28
SY	22	0.50	FMP1	-	-	FMP782	33.26	0.00	0.00	66.74
PO	2	37.82	FMP1	-	-	FMP784	35.37	0.00	0.00	64.63
PO	4	139.70	FMP1	-	-	FMP785	35.28	0.00	0.00	64.72
PO	6	127.22	FMP1	-	-	FMP786	34.63	0.00	0.00	65.37
PO	8	67.42	FMP1	-	-	FMP787	37.02	0.00	0.00	62.98
PO	10	54.84	FMP1	-	-	FMP788	38.94	0.00	0.00	61.06
PO	12	5.51	FMP1	-	-	FMP789	38.89	0.00	0.00	61.11
PO	14	44.23	FMP1	-	-	FMP790	42.91	0.00	0.00	57.09
PO	16	7.39	FMP1	-	-	FMP791	34.47	0.00	0.00	65.53

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
PO	24	3.06	FMP1	-	-	FMP792	35.97	0.00	0.00	64.03
NO	2	1.32	FMP1	-	-	FMP793	35.37	0.00	0.00	64.63
NO	4	0.72	FMP1	-	-	FMP794	35.28	0.00	0.00	64.72
NO	6	6.92	FMP1	-	-	FMP795	34.63	0.00	0.00	65.37
NO	8	3.48	FMP1	-	-	FMP796	37.02	0.00	0.00	62.98
NO	10	18.62	FMP1	-	-	FMP797	38.94	0.00	0.00	61.06
NO	12	7.24	FMP1	-	-	FMP798	38.89	0.00	0.00	61.11
NO	14	5.09	FMP1	-	-	FMP799	42.91	0.00	0.00	57.09
NO	16	0.11	FMP1	-	-	FMP800	34.47	0.00	0.00	65.53
NO	18	0.28	FMP1	-	-	FMP801	71.82	0.00	0.00	28.18

England, Private sector

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	6	1 219.43	FMP1	FMP803	FMP1103	-	66.62	13.74	19.64	0.00
NS	8	1 668.29	FMP1	FMP806	FMP1106	-	65.76	9.05	25.19	0.00
NS	10	2 120.27	FMP1	FMP809	FMP1109	-	65.76	3.33	30.91	0.00
NS	12	2 344.20	FMP1	FMP811	FMP1112	-	65.75	3.01	31.24	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	14	1 936.25	FMP1	FMP813	FMP1115	-	65.76	3.23	31.01	0.00
NS	16	2 572.57	FMP1	FMP815	FMP1118	-	65.76	3.01	31.23	0.00
NS	18	1 589.90	FMP1	FMP817	FMP1121	-	65.76	3.11	31.13	0.00
NS	20	1 389.41	FMP1	FMP819	FMP1124	-	65.76	2.63	31.61	0.00
NS	22	1 954.33	FMP1	FMP821	FMP1126	-	65.76	3.42	30.82	0.00
SS	6	1 632.77	FMP1	FMP823	FMP1128	-	67.03	23.26	9.71	0.00
SS	8	1 646.60	FMP1	FMP826	FMP1130	-	67.50	23.03	9.47	0.00
SS	10	1 628.28	FMP1	FMP829	FMP1132	-	65.75	24.92	9.34	0.00
SS	12	4 089.11	FMP1	FMP831	FMP1134	-	65.75	24.48	9.77	0.00
SS	14	5 720.74	FMP1	FMP834	FMP1137	-	65.76	17.95	16.29	0.00
SS	16	3 810.55	FMP1	FMP837	FMP1140	-	66.03	8.00	25.96	0.00
SS	18	2 624.40	FMP1	FMP840	FMP1143	-	65.75	8.30	25.96	0.00
SS	20	3 905.59	FMP1	FMP843	FMP1146	-	66.00	7.32	26.68	0.00
SS	22	966.52	FMP1	FMP846	FMP1149	-	65.75	8.93	25.32	0.00
SS	24	1 387.09	FMP1	FMP849	FMP1152	-	65.75	6.85	27.40	0.00
SS	26	25.31	FMP1	FMP851	FMP1155	-	65.75	6.85	27.40	0.00
SS	28	0.45	FMP1	FMP853	FMP1158	-	65.75	6.85	27.40	0.00
SP	4	53 723.48	FMP1	FMP856	FMP1161	-	98.94	0.72	0.34	0.00
SP	6	5 052.93	FMP1	FMP859	FMP1164	-	66.15	19.99	13.86	0.00
SP	8	5 955.73	FMP1	FMP862	FMP1167	-	66.12	11.02	22.86	0.00
SP	10	7 598.39	FMP1	FMP865	FMP1170	-	65.76	11.91	22.33	0.00
SP	12	6 447.39	FMP1	FMP868	FMP1173	-	65.96	12.49	21.56	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SP	14	11 211.09	FMP1	FMP871	FMP1176	-	65.76	29.34	4.90	0.00
CP	6	643.09	FMP1	-	FMP1183	-	65.74	0.00	34.26	0.00
CP	8	1 111.16	FMP1	-	FMP1186	-	70.28	0.00	29.72	0.00
CP	10	2 549.02	FMP1	-	FMP1189	-	67.30	0.00	32.70	0.00
CP	12	1 906.35	FMP1	-	FMP1192	-	65.74	0.00	34.26	0.00
CP	14	2 149.54	FMP1	-	FMP1195	-	65.75	0.00	34.25	0.00
CP	16	1 605.08	FMP1	-	FMP1198	-	65.89	0.00	34.11	0.00
CP	18	751.74	FMP1	-	FMP1200	-	65.75	0.00	34.25	0.00
CP	20	595.06	FMP1	-	FMP1202	-	65.76	0.00	34.24	0.00
LP	4	458.01	FMP1	FMP882	FMP1205	-	75.01	12.64	12.35	0.00
LP	6	4 095.11	FMP1	FMP885	FMP1208	-	73.66	13.44	12.90	0.00
LP	8	2 248.89	FMP1	FMP888	FMP1211	-	69.56	15.77	14.67	0.00
LP	10	1 272.21	FMP1	FMP891	FMP1214	-	71.17	15.34	13.49	0.00
LP	12	1 398.52	FMP1	FMP894	FMP1217	-	67.99	19.72	12.28	0.00
LP	14	172.87	FMP1	FMP897	FMP1220	-	66.36	23.36	10.28	0.00
LP	16	17.58	FMP1	FMP899	FMP1222	-	66.40	16.80	16.80	0.00
LP	18	7.09	FMP1	FMP901	FMP1224	-	66.54	16.73	16.73	0.00
LP	20	94.18	FMP1	FMP902	FMP1225	-	74.37	12.81	12.81	0.00
EL	2	95.63	FMP1	FMP904	FMP1227	-	65.74	13.70	20.55	0.00
EL	4	378.18	FMP1	FMP906	FMP1229	-	65.74	13.70	20.55	0.00
EL	6	968.92	FMP1	FMP909	FMP1232	-	65.74	13.70	20.55	0.00
EL	8	1 080.41	FMP1	FMP912	FMP1235	-	65.75	13.70	20.55	0.00

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			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
EL	10	675.73	FMP1	FMP915	FMP1238	-	65.74	13.70	20.55	0.00
EL	12	829.63	FMP1	FMP918	FMP1241	-	65.75	13.70	20.55	0.00
EL	14	17.98	FMP1	FMP921	FMP1244	-	65.76	13.70	20.55	0.00
JL	2	131.81	FMP1	FMP924	FMP1247	-	65.74	6.85	27.40	0.00
JL	4	1 298.48	FMP1	FMP926	FMP1249	-	65.78	6.78	27.44	0.00
JL	6	2 500.55	FMP1	FMP929	FMP1252	-	65.85	6.62	27.53	0.00
JL	8	3 578.99	FMP1	FMP932	FMP1255	-	65.76	5.59	28.64	0.00
JL	10	4 262.56	FMP1	FMP935	FMP1258	-	65.76	1.47	32.78	0.00
JL	12	4 290.30	FMP1	FMP938	FMP1261	-	65.76	1.00	33.24	0.00
JL	14	5 469.80	FMP1	FMP941	FMP1264	-	65.76	0.51	33.74	0.00
DF	8	2 988.10	FMP1	FMP947	FMP1270	-	66.33	3.37	30.31	0.00
DF	10	2 625.63	FMP1	FMP950	FMP1273	-	65.77	3.42	30.80	0.00
DF	12	1 953.35	FMP1	FMP953	FMP1276	-	65.77	3.42	30.81	0.00
DF	14	1 923.64	FMP1	FMP956	FMP1279	-	65.77	3.42	30.81	0.00
DF	16	1 379.39	FMP1	FMP959	FMP1282	-	65.77	3.42	30.80	0.00
DF	18	908.43	FMP1	FMP962	FMP1285	-	65.77	3.42	30.81	0.00
DF	20	765.43	FMP1	FMP964	FMP1288	-	65.76	3.42	30.81	0.00
DF	22	309.10	FMP1	FMP966	FMP1291	-	65.76	3.42	30.81	0.00
DF	24	495.39	FMP1	FMP968	FMP1294	-	65.76	3.42	30.82	0.00
DF	26	2.00	FMP1	FMP970	FMP1297	-	65.77	3.42	30.80	0.00
GF	8	101.90	FMP1	FMP974	FMP1301	-	66.68	13.33	19.99	0.00
GF	10	137.11	FMP1	FMP976	FMP1303	-	65.77	13.69	20.54	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
GF	12	110.57	FMP1	FMP979	FMP1306	-	69.68	12.13	18.19	0.00
GF	14	89.47	FMP1	FMP982	FMP1309	-	65.78	13.69	20.53	0.00
GF	16	59.12	FMP1	FMP984	FMP1312	-	65.78	13.69	20.53	0.00
GF	18	29.66	FMP1	FMP987	FMP1315	-	65.77	13.69	20.54	0.00
GF	20	28.29	FMP1	FMP990	FMP1318	-	65.76	13.69	20.54	0.00
GF	22	9.40	FMP1	FMP993	FMP1321	-	65.77	13.69	20.54	0.00
GF	24	9.34	FMP1	FMP996	FMP1324	-	65.76	13.70	20.54	0.00
GF	26	11.24	FMP1	FMP999	FMP1327	-	65.78	13.69	20.53	0.00
GF	28	5.59	FMP1	FMP1002	FMP1330	-	65.77	13.69	20.54	0.00
GF	30	10.90	FMP1	FMP1005	FMP1333	-	65.77	13.69	20.54	0.00
NF	8	56.88	FMP1	FMP1011	FMP1339	-	67.05	13.18	19.77	0.00
NF	10	32.55	FMP1	FMP1014	FMP1342	-	66.27	13.49	20.24	0.00
NF	12	26.68	FMP1	FMP1017	FMP1345	-	65.76	13.69	20.54	0.00
NF	14	24.93	FMP1	FMP1020	FMP1348	-	65.77	13.69	20.54	0.00
NF	16	11.86	FMP1	FMP1022	FMP1351	-	65.89	13.64	20.47	0.00
NF	18	4.51	FMP1	FMP1025	FMP1354	-	65.77	13.69	20.54	0.00
NF	20	4.78	FMP1	FMP1028	FMP1357	-	70.93	11.63	17.44	0.00
NF	22	5.07	FMP1	FMP1031	FMP1360	-	65.77	13.69	20.54	0.00
WH	4	0.34	FMP1	FMP1038	FMP1367	-	75.17	9.93	14.90	0.00
WH	6	9.17	FMP1	FMP1040	FMP1369	-	73.32	10.67	16.01	0.00
WH	8	17.69	FMP1	FMP1043	FMP1372	-	66.75	13.30	19.95	0.00
WH	10	78.14	FMP1	FMP1046	FMP1375	-	70.37	11.85	17.78	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
WH	12	1 292.16	FMP1	FMP1049	FMP1378	-	66.87	13.25	19.88	0.00
WH	14	696.98	FMP1	FMP1052	FMP1381	-	66.24	13.50	20.25	0.00
WH	16	1 021.25	FMP1	FMP1054	FMP1384	-	66.63	13.35	20.02	0.00
WH	18	950.53	FMP1	FMP1047	FMP1387	-	66.07	13.57	20.36	0.00
WH	20	302.12	FMP1	FMP1060	FMP1390	-	72.35	11.06	16.59	0.00
WH	22	221.02	FMP1	FMP1063	FMP1393	-	66.26	13.50	20.24	0.00
WH	24	137.96	FMP1	FMP1066	FMP1396	-	66.26	13.49	20.24	0.00
RC	4	6.14	FMP1	FMP1071	FMP1401	-	69.82	12.07	18.11	0.00
RC	6	32.52	FMP1	FMP1073	FMP1403	-	72.07	11.17	16.76	0.00
RC	8	37.80	FMP1	FMP1076	FMP1406	-	68.84	12.46	18.70	0.00
RC	10	295.76	FMP1	FMP1079	FMP1409	-	70.18	11.93	17.89	0.00
RC	12	1 827.91	FMP1	FMP1082	FMP1412	-	66.78	13.29	19.93	0.00
RC	14	437.35	FMP1	FMP1085	FMP1415	-	66.10	13.56	20.34	0.00
RC	16	615.09	FMP1	FMP1087	FMP1418	-	66.36	13.46	20.18	0.00
RC	18	418.05	FMP1	FMP1090	FMP1421	-	65.89	13.64	20.46	0.00
RC	20	84.98	FMP1	FMP1093	FMP1424	-	65.80	13.68	20.52	0.00
RC	22	80.98	FMP1	FMP1096	FMP1427	-	65.89	13.64	20.46	0.00
RC	24	64.54	FMP1	FMP1099	FMP1430	-	66.00	13.60	20.40	0.00
OK	2	24 926.92	FMP1	-	FMP1433	-	89.35	0.00	10.65	0.00
OK	4	51 437.52	FMP1	-	FMP1434	-	89.35	0.00	10.65	0.00
OK	6	39 803.06	FMP1	-	FMP1435	-	89.35	0.00	10.65	0.00
OK	8	25 203.64	FMP1	-	FMP1436	-	89.35	0.00	10.65	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
AH	2	13 258.66	FMP1	-	FMP1437	-	89.35	0.00	10.65	0.00
AH	4	19 206.27	FMP1	-	FMP1438	-	89.35	0.00	10.65	0.00
AH	6	18 725.89	FMP1	-	FMP1439	-	89.35	0.00	10.65	0.00
AH	8	16 968.30	FMP1	-	FMP1440	-	89.35	0.00	10.65	0.00
AH	10	12 058.90	FMP1	-	FMP1441	-	89.35	0.00	10.65	0.00
AH	12	23 249.37	FMP1	-	FMP1442	-	89.35	0.00	10.65	0.00
BE	4	22 832.56	FMP1	-	FMP1444	-	89.35	0.00	10.65	0.00
BE	6	29 695.75	FMP1	-	FMP1445	-	89.35	0.00	10.65	0.00
BE	8	21 671.82	FMP1	-	FMP1446	-	89.35	0.00	10.65	0.00
BE	10	15 367.07	FMP1	-	FMP1447	-	89.35	0.00	10.65	0.00
BI	2	25 826.94	FMP1	-	FMP1449	-	89.35	0.00	10.65	0.00
BI	4	26 028.27	FMP1	-	FMP1450	-	89.35	0.00	10.65	0.00
BI	6	21 885.44	FMP1	-	FMP1451	-	89.35	0.00	10.65	0.00
BI	8	12 392.88	FMP1	-	FMP1452	-	89.35	0.00	10.65	0.00
BI	10	6 888.82	FMP1	-	FMP1453	-	89.35	0.00	10.65	0.00
BI	12	9 215.21	FMP1	-	FMP1454	-	89.35	0.00	10.65	0.00
SY	2	373 383.95	FMP1	-	FMP1455	-	99.70	0.00	0.30	0.00
SY	4	14 576.79	FMP1	-	FMP1456	-	89.35	0.00	10.65	0.00
SY	6	13 901.14	FMP1	-	FMP1457	-	89.35	0.00	10.65	0.00
SY	8	9 565.10	FMP1	-	FMP1458	-	89.35	0.00	10.65	0.00
SY	10	6 443.98	FMP1	-	FMP1459	-	89.35	0.00	10.65	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SY	12	9 594.88	FMP1	-	FMP1460	-	89.35	0.00	10.65	0.00
PO	2	118 591.60	FMP1	-	FMP1461	-	89.35	0.00	10.65	0.00
PO	4	54 213.21	FMP1	-	FMP1462	-	89.35	0.00	10.65	0.00
PO	6	24 261.08	FMP1	-	FMP1463	-	89.35	0.00	10.65	0.00
PO	8	24 499.13	FMP1	-	FMP1464	-	89.35	0.00	10.65	0.00
PO	10	3 092.12	FMP1	-	FMP1465	-	89.35	0.00	10.65	0.00
PO	12	1 049.03	FMP1	-	FMP1466	-	89.35	0.00	10.65	0.00
PO	14	1 057.24	FMP1	-	FMP1467	-	89.35	0.00	10.65	0.00
NO	2	5 883.95	FMP1	-	FMP1468	-	89.35	0.00	10.65	0.00
NO	4	401.98	FMP1	-	FMP1469	-	89.35	0.00	10.65	0.00
NO	6	1 900.39	FMP1	-	FMP1470	-	89.35	0.00	10.65	0.00
NO	8	1 822.52	FMP1	-	FMP1471	-	89.35	0.00	10.65	0.00
NO	10	1 499.72	FMP1	-	FMP1472	-	89.35	0.00	10.65	0.00
NO	12	1 960.09	FMP1	-	FMP1473	-	89.35	0.00	10.65	0.00
NO	14	175.65	FMP1	-	FMP1474	-	89.35	0.00	10.65	0.00
NO	18	68.65	FMP1	-	FMP1475	-	89.35	0.00	10.65	0.00

Scotland, Public forest estate

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	2	244.35	FMP1	FMP3	FMP290	FMP588	54.66	18.31	21.60	5.43
NS	4	251.23	FMP1	FMP6	FMP293	FMP589	51.10	23.75	18.75	6.40
NS	6	555.15	FMP1	FMP9	FMP296	FMP590	48.60	24.28	14.27	12.84
NS	8	1 050.93	FMP1	FMP12	FMP299	FMP591	46.94	23.77	16.85	12.44
NS	10	1 681.33	FMP1	FMP15	FMP302	FMP592	46.53	21.63	18.26	13.57
NS	12	2 795.70	FMP1	FMP18	FMP305	FMP593	46.37	21.47	15.91	16.26
NS	14	2 680.04	FMP1	FMP21	FMP308	FMP594	45.14	18.73	14.55	21.57
NS	16	1 560.68	FMP1	FMP24	FMP311	FMP595	45.47	18.19	13.88	22.46
NS	18	697.91	FMP1	FMP27	FMP314	FMP596	45.52	14.73	12.22	27.53
NS	20	279.12	FMP1	FMP30	FMP317	FMP597	45.79	20.73	12.91	20.58
NS	22	107.43	FMP1	FMP33	FMP320	FMP598	47.31	21.73	12.13	18.83
NS	24	6.74	FMP1	FMP36	-	FMP599	44.14	24.90	0.00	30.96
NS	26	0.62	FMP1	FMP37	-	FMP600	44.63	24.42	0.00	30.96
SS	2	2 169.99	FMP1	FMP39	FMP326	FMP602	48.21	36.51	14.20	1.08
SS	4	2 797.68	FMP1	FMP42	FMP329	FMP603	46.19	45.46	5.11	3.24
SS	6	4 604.14	FMP1	FMP45	FMP332	FMP604	45.71	43.82	8.70	1.77
SS	8	8 908.19	FMP1	FMP48	FMP335	FMP605	45.67	43.32	9.51	1.50
SS	10	15 335.47	FMP1	FMP51	FMP338	FMP606	45.26	42.74	10.10	1.91
SS	12	33 638.20	FMP1	FMP54	FMP341	FMP607	45.40	40.40	11.86	2.33
SS	14	41 891.11	FMP1	FMP57	FMP344	FMP608	44.68	37.65	13.82	3.84

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SS	16	46 786.60	FMP1	FMP60	FMP347	FMP609	44.66	35.39	15.82	4.13
SS	18	21 701.57	FMP1	FMP63	FMP350	FMP610	44.63	32.36	16.82	6.19
SS	20	11 153.74	FMP1	FMP66	FMP353	FMP611	44.44	30.22	18.13	7.21
SS	22	5 562.06	FMP1	FMP69	FMP356	FMP612	44.65	19.60	25.99	9.77
SS	24	6 179.28	FMP1	FMP72	FMP359	FMP613	44.44	16.84	29.29	9.43
SS	26	357.22	FMP1	FMP75	FMP362	FMP614	44.17	17.34	37.73	0.76
SS	28	0.07	FMP1	FMP76	FMP365	-	44.26	17.26	38.49	0.00
SS	30	0.32	FMP1	FMP77	FMP366	-	44.26	17.26	38.49	0.00
SP	2	2 013.94	FMP1	FMP79	FMP368	FMP616	59.97	8.95	15.74	15.35
SP	4	2 546.58	FMP1	FMP82	FMP371	FMP617	51.93	16.84	13.57	17.66
SP	6	6 971.96	FMP1	FMP85	FMP374	FMP618	46.60	12.39	13.60	27.41
SP	8	14 827.42	FMP1	FMP88	FMP377	FMP619	46.09	10.48	13.35	30.08
SP	10	10 193.65	FMP1	FMP91	FMP380	FMP620	45.64	9.28	15.79	29.29
SP	12	3 294.01	FMP1	FMP94	FMP383	FMP621	46.02	8.50	19.00	26.48
SP	14	678.96	FMP1	FMP97	FMP386	FMP622	44.28	6.28	9.29	40.15
SP	16	44.14	FMP1	FMP100	FMP389	FMP623	48.72	33.88	1.58	15.81
SP	18	1.35	FMP1	-	FMP392	FMP624	44.07	0.00	46.37	9.55
CP	2	1.88	FMP1	FMP102	FMP395	FMP626	45.79	32.14	4.69	17.37
CP	4	42.74	FMP1	FMP104	FMP397	FMP627	44.07	10.03	9.76	36.13
CP	6	306.46	FMP1	FMP107	FMP400	FMP628	44.23	7.89	4.22	43.66
CP	8	368.48	FMP1	FMP110	FMP403	FMP629	44.39	7.15	4.11	44.34
CP	10	328.75	FMP1	FMP113	FMP406	FMP630	44.23	6.81	2.90	46.06

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
CP	12	220.57	FMP1	FMP116	FMP409	FMP631	47.68	1.39	0.40	50.52
CP	14	32.95	FMP1	FMP119	FMP412	FMP632	44.07	6.55	1.20	48.18
CP	16	1.29	FMP1	-	-	FMP633	44.07	0.00	0.00	55.93
CP	18	2.49	FMP1	-	-	FMP634	65.40	0.00	0.00	34.60
LP	2	715.84	FMP1	FMP128	FMP423	FMP638	51.64	34.73	13.56	0.08
LP	4	4 640.04	FMP1	FMP131	FMP426	FMP639	45.61	47.01	6.79	0.59
LP	6	12 076.31	FMP1	FMP134	FMP429	FMP640	45.44	44.47	9.30	0.79
LP	8	12 636.77	FMP1	FMP137	FMP432	FMP641	45.90	43.85	9.39	0.86
LP	10	4 925.37	FMP1	FMP140	FMP435	FMP642	46.00	42.42	10.88	0.70
LP	12	914.53	FMP1	FMP143	FMP438	FMP643	45.50	40.79	11.13	2.58
LP	14	246.72	FMP1	FMP146	FMP441	FMP644	44.61	47.75	6.69	0.95
LP	16	36.11	FMP1	FMP148	FMP444	-	44.17	53.66	2.16	0.00
LP	20	0.41	FMP1	-	FMP448	-	98.27	0.00	1.73	0.00
EL	2	75.07	FMP1	FMP150	FMP450	FMP648	51.84	25.51	15.77	6.88
EL	4	268.07	FMP1	FMP152	FMP453	FMP649	45.55	15.07	14.84	24.54
EL	6	648.68	FMP1	FMP155	FMP456	FMP650	45.32	11.89	14.94	27.85
EL	8	848.64	FMP1	FMP158	FMP459	FMP651	45.83	14.62	13.77	25.79
EL	10	692.82	FMP1	FMP161	FMP462	FMP652	44.77	14.05	10.26	30.92
EL	12	697.94	FMP1	FMP164	FMP465	FMP653	45.93	14.79	10.49	28.78
EL	14	63.67	FMP1	FMP167	FMP468	FMP654	44.30	29.99	20.14	5.57
EL	16	0.17	FMP1	FMP168	-	FMP655	44.07	30.22	0.00	25.71
EL	18	0.11	FMP1	-	-	FMP656	74.29	0.00	0.00	25.71

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			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
JL	2	206.45	FMP1	FMP170	FMP474	FMP657	49.57	35.97	6.55	7.91
JL	4	1 388.99	FMP1	FMP173	FMP477	FMP658	46.00	34.47	11.88	7.66
JL	6	2 629.57	FMP1	FMP176	FMP480	FMP659	44.99	28.64	15.61	10.76
JL	8	4 739.09	FMP1	FMP179	FMP483	FMP660	45.08	24.17	16.45	14.29
JL	10	5 309.96	FMP1	FMP182	FMP486	FMP661	45.18	22.01	17.30	15.50
JL	12	3 931.84	FMP1	FMP185	FMP489	FMP662	45.26	24.48	14.45	15.80
JL	14	1 625.04	FMP1	FMP188	FMP492	FMP663	44.88	25.13	15.80	14.19
JL	16	157.47	FMP1	FMP191	FMP495	FMP664	44.56	11.88	39.60	3.96
JL	18	0.30	FMP1	-	-	FMP665	44.07	0.00	0.00	55.93
JL	20	0.48	FMP1	FMP193	-	FMP666	44.07	48.94	0.00	6.99
DF	2	16.37	FMP1	FMP195	FMP501	FMP668	52.34	6.51	16.01	25.15
DF	4	10.34	FMP1	-	FMP504	FMP669	44.07	0.00	1.24	54.69
DF	6	24.13	FMP1	FMP197	FMP506	FMP670	45.63	36.65	1.29	16.42
DF	8	139.55	FMP1	FMP199	FMP509	FMP671	44.79	14.19	16.84	24.18
DF	10	452.20	FMP1	FMP202	FMP512	FMP672	44.68	14.06	20.49	20.77
DF	12	756.76	FMP1	FMP205	FMP515	FMP673	44.84	16.66	19.76	18.74
DF	14	990.63	FMP1	FMP208	FMP518	FMP674	44.62	13.57	16.06	25.75
DF	16	1 075.01	FMP1	FMP211	FMP521	FMP675	44.39	10.54	15.69	29.38
DF	18	600.17	FMP1	FMP214	FMP524	FMP676	44.51	8.65	22.17	24.67
DF	20	367.47	FMP1	FMP217	FMP527	FMP677	44.68	13.25	19.19	22.88
DF	22	156.96	FMP1	FMP220	FMP530	FMP678	44.34	13.36	19.98	22.32
DF	24	148.24	FMP1	FMP223	FMP533	FMP679	44.08	19.44	10.70	25.78

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DF	26	1.25	FMP1	FMP225	-	FMP680	44.07	15.39	0.00	40.54
GF	2	6.83	FMP1	FMP226	FMP536	FMP681	57.59	26.35	8.94	7.12
GF	4	3.53	FMP1	FMP227	FMP537	-	44.07	16.70	39.23	0.00
GF	6	0.19	FMP1	-	-	FMP683	44.07	0.00	0.00	55.93
GF	8	3.05	FMP1	FMP228	-	FMP684	45.18	14.35	0.00	40.47
GF	10	12.41	FMP1	FMP229	FMP540	FMP685	45.60	27.71	12.20	14.48
GF	12	42.24	FMP1	FMP231	FMP541	FMP686	51.08	17.02	14.79	17.12
GF	14	38.04	FMP1	FMP233	FMP542	FMP687	46.86	21.70	12.46	18.99
GF	16	46.87	FMP1	FMP235	FMP543	FMP688	44.72	14.23	24.25	16.81
GF	18	27.55	FMP1	FMP237	FMP544	FMP689	45.75	16.23	8.85	29.16
GF	20	45.37	FMP1	FMP239	FMP545	FMP690	44.35	15.37	21.67	18.61
GF	22	31.72	FMP1	FMP241	FMP546	FMP691	44.87	7.53	9.63	37.97
GF	24	12.96	FMP1	FMP243	FMP547	FMP692	44.07	5.45	12.30	38.17
GF	26	7.56	FMP1	FMP245	FMP548	FMP693	46.49	2.76	21.32	29.44
GF	28	10.19	FMP1	FMP247	FMP549	FMP694	44.10	0.55	0.44	54.91
GF	30	5.69	FMP1	FMP248	FMP550	-	44.24	0.41	55.35	0.00
NF	2	22.56	FMP1	FMP249	FMP551	FMP696	46.04	19.00	13.82	21.13
NF	4	14.83	FMP1	FMP250	FMP552	FMP697	46.26	21.85	0.03	31.87
NF	6	7.74	FMP1	FMP251	FMP553	FMP698	46.77	39.04	9.34	4.85
NF	8	31.74	FMP1	FMP252	FMP554	FMP699	49.81	38.58	2.53	9.08
NF	10	74.29	FMP1	FMP253	FMP555	FMP700	46.96	36.17	14.59	2.28
NF	12	121.96	FMP1	FMP254	FMP556	FMP701	46.78	33.25	14.24	5.73

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NF	14	125.96	FMP1	FMP255	FMP557	FMP702	44.59	34.00	14.80	6.61
NF	16	86.73	FMP1	FMP256	FMP558	FMP703	45.38	25.11	20.18	9.33
NF	18	31.10	FMP1	FMP257	FMP559	FMP704	45.91	24.49	6.72	22.87
NF	20	22.54	FMP1	FMP258	FMP560	FMP705	47.36	32.22	6.89	13.53
NF	22	42.92	FMP1	FMP259	FMP561	FMP706	44.64	23.40	9.96	22.00
NF	24	5.29	FMP1	FMP260	FMP562	FMP707	45.44	9.75	4.57	40.23
NF	26	0.16	FMP1	FMP261	-	-	44.63	55.37	0.00	0.00
NF	28	0.41	FMP1	FMP262	-	-	44.63	55.37	0.00	0.00
WH	2	6.23	FMP1	FMP263	FMP563	FMP708	45.11	18.70	0.90	35.29
WH	4	2.55	FMP1	FMP264	FMP564	FMP709	61.88	15.90	0.55	21.67
WH	6	8.13	FMP1	FMP265	FMP565	FMP710	51.24	4.83	1.09	42.85
WH	8	24.54	FMP1	FMP266	FMP566	FMP711	45.48	16.48	0.94	37.09
WH	10	27.98	FMP1	FMP267	FMP567	FMP712	51.67	19.97	14.48	13.87
WH	12	95.23	FMP1	FMP268	FMP568	FMP713	46.84	24.76	13.82	14.58
WH	14	98.05	FMP1	FMP269	FMP569	FMP714	46.63	26.31	11.84	15.22
WH	16	70.76	FMP1	FMP270	FMP570	FMP715	44.99	27.50	8.54	18.96
WH	18	67.54	FMP1	FMP271	FMP571	FMP716	44.75	34.39	14.96	5.89
WH	20	42.29	FMP1	FMP272	FMP572	FMP717	44.19	29.01	11.49	15.32
WH	22	23.27	FMP1	FMP273	FMP573	-	48.96	24.51	26.53	0.00
WH	24	17.13	FMP1	FMP274	FMP574	-	46.65	31.90	21.45	0.00
WH	26	3.64	FMP1	FMP275	FMP575	-	61.86	36.34	1.81	0.00
RC	2	3.33	FMP1	FMP276	-	FMP721	49.72	24.33	0.00	25.95

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
RC	4	5.27	FMP1	FMP277	-	FMP722	44.89	8.61	0.00	46.50
RC	6	3.72	FMP1	FMP278	FMP578	FMP723	44.17	10.70	15.47	29.67
RC	8	13.41	FMP1	FMP279	FMP579	FMP724	48.95	9.40	38.88	2.77
RC	10	11.03	FMP1	FMP280	FMP580	FMP725	45.88	16.96	27.21	9.95
RC	12	26.60	FMP1	FMP281	FMP581	FMP726	45.18	13.80	11.94	29.08
RC	14	19.51	FMP1	FMP282	FMP582	FMP727	45.23	29.31	3.93	21.54
RC	16	20.60	FMP1	FMP283	FMP583	FMP728	45.25	29.10	17.62	8.03
RC	18	9.53	FMP1	FMP284	FMP584	FMP729	46.88	35.90	3.53	13.68
RC	20	6.91	FMP1	FMP285	FMP585	-	44.07	50.80	5.12	0.00
RC	22	0.16	FMP1	FMP286	FMP586	-	44.38	50.98	4.63	0.00
RC	24	0.87	FMP1	FMP287	FMP587	-	44.87	6.40	48.73	0.00
OK	2	1 096.32	FMP1	-	-	FMP733	97.37	0.00	0.00	2.63
OK	4	1 168.94	FMP1	-	-	FMP734	97.47	0.00	0.00	2.53
OK	6	199.02	FMP1	-	-	FMP735	97.41	0.00	0.00	2.59
OK	8	22.10	FMP1	-	-	FMP736	96.70	0.00	0.00	3.30
OK	10	6.10	FMP1	-	-	FMP737	96.83	0.00	0.00	3.17
OK	12	1.31	FMP1	-	-	FMP738	98.07	0.00	0.00	1.93
OK	14	4.19	FMP1	-	-	FMP739	98.55	0.00	0.00	1.45
OK	16	2.45	FMP1	-	-	FMP740	96.70	0.00	0.00	3.30
AH	2	126.39	FMP1	-	-	FMP742	97.62	0.00	0.00	2.38
AH	4	120.58	FMP1	-	-	FMP743	97.75	0.00	0.00	2.25
AH	6	98.53	FMP1	-	-	FMP744	97.45	0.00	0.00	2.55

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
AH	8	87.39	FMP1	-	-	FMP745	98.03	0.00	0.00	1.97
AH	10	4.55	FMP1	-	-	FMP746	98.18	0.00	0.00	1.82
AH	12	2.58	FMP1	-	-	FMP747	98.15	0.00	0.00	1.85
AH	16	0.46	FMP1	-	-	FMP749	97.51	0.00	0.00	2.49
AH	20	0.83	FMP1	-	-	FMP751	97.17	0.00	0.00	2.83
BE	2	154.34	FMP1	-	-	FMP752	96.92	0.00	0.00	3.08
BE	4	194.61	FMP1	-	-	FMP753	97.63	0.00	0.00	2.37
BE	6	216.75	FMP1	-	-	FMP754	97.61	0.00	0.00	2.39
BE	8	38.31	FMP1	-	-	FMP755	96.80	0.00	0.00	3.20
BE	10	5.50	FMP1	-	-	FMP756	97.10	0.00	0.00	2.90
BE	12	1.45	FMP1	-	-	FMP757	96.70	0.00	0.00	3.30
BE	14	1.38	FMP1	-	-	FMP758	96.70	0.00	0.00	3.30
BE	18	0.13	FMP1	-	-	FMP760	96.70	0.00	0.00	3.30
BI	2	6 092.91	FMP1	-	-	FMP761	97.62	0.00	0.00	2.38
BI	4	3 696.68	FMP1	-	-	FMP762	97.75	0.00	0.00	2.25
BI	6	1 370.76	FMP1	-	-	FMP763	97.45	0.00	0.00	2.55
BI	8	222.23	FMP1	-	-	FMP764	98.03	0.00	0.00	1.97
BI	10	79.89	FMP1	-	-	FMP765	98.18	0.00	0.00	1.82
BI	12	42.33	FMP1	-	-	FMP766	98.15	0.00	0.00	1.85
BI	14	17.17	FMP1	-	-	FMP767	98.43	0.00	0.00	1.57
BI	16	2.58	FMP1	-	-	FMP768	97.51	0.00	0.00	2.49
BI	18	0.81	FMP1	-	-	FMP769	97.36	0.00	0.00	2.64

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
BI	22	0.09	FMP1	-	-	FMP771	97.17	0.00	0.00	2.83
SY	2	7 523.46	FMP1	-	-	FMP772	97.62	0.00	0.00	2.38
SY	4	3 256.77	FMP1	-	-	FMP773	97.75	0.00	0.00	2.25
SY	6	1 548.72	FMP1	-	-	FMP774	97.45	0.00	0.00	2.55
SY	8	176.70	FMP1	-	-	FMP775	98.03	0.00	0.00	1.97
SY	10	50.77	FMP1	-	-	FMP776	98.18	0.00	0.00	1.82
SY	12	94.36	FMP1	-	-	FMP777	98.15	0.00	0.00	1.85
SY	14	41.15	FMP1	-	-	FMP778	98.43	0.00	0.00	1.57
SY	16	11.53	FMP1	-	-	FMP779	97.51	0.00	0.00	2.49
SY	18	14.60	FMP1	-	-	FMP780	97.36	0.00	0.00	2.64
SY	20	1.04	FMP1	-	-	FMP781	97.17	0.00	0.00	2.83
SY	24	0.10	FMP1	-	-	FMP783	97.17	0.00	0.00	2.83
PO	2	24.14	FMP1	-	-	FMP784	97.62	0.00	0.00	2.38
PO	4	23.54	FMP1	-	-	FMP785	97.75	0.00	0.00	2.25
PO	6	10.32	FMP1	-	-	FMP786	97.45	0.00	0.00	2.55
PO	8	6.27	FMP1	-	-	FMP787	98.03	0.00	0.00	1.97
PO	10	1.00	FMP1	-	-	FMP788	98.18	0.00	0.00	1.82
PO	12	0.15	FMP1	-	-	FMP789	98.15	0.00	0.00	1.85
PO	14	0.13	FMP1	-	-	FMP790	98.43	0.00	0.00	1.57
NO	2	1.02	FMP1	-	-	FMP793	97.62	0.00	0.00	2.38
NO	4	2.69	FMP1	-	-	FMP794	97.75	0.00	0.00	2.25
NO	6	1.10	FMP1	-	-	FMP795	97.45	0.00	0.00	2.55

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NO	8	0.88	FMP1	-	-	FMP796	98.03	0.00	0.00	1.97
NO	10	3.73	FMP1	-	-	FMP797	98.18	0.00	0.00	1.82
NO	12	0.82	FMP1	-	-	FMP798	98.15	0.00	0.00	1.85
NO	14	1.23	FMP1	-	-	FMP799	98.43	0.00	0.00	1.57
NO	18	0.06	FMP1	-	-	FMP801	97.36	0.00	0.00	2.64

Scotland, Private sector

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	6	697.42	FMP1	FMP804	FMP1104	-	71.17	24.23	4.59	0.00
NS	8	841.98	FMP1	FMP807	FMP1107	-	44.13	46.89	8.98	0.00
NS	10	1 465.80	FMP1	FMP810	FMP1110	-	44.59	40.83	14.58	0.00
NS	12	1 983.90	FMP1	FMP812	FMP1113	-	42.95	44.77	12.28	0.00
NS	14	2 145.31	FMP1	FMP814	FMP1116	-	48.18	35.63	16.19	0.00
NS	16	2 637.39	FMP1	FMP816	FMP1119	-	42.76	40.18	17.06	0.00
NS	18	1 633.42	FMP1	FMP818	FMP1122	-	42.76	39.91	17.33	0.00
NS	20	1 114.91	FMP1	FMP820	FMP1125	-	42.76	42.10	15.14	0.00
NS	22	1 658.20	FMP1	FMP822	FMP1126	-	42.76	42.10	15.14	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SS	6	18 055.56	FMP1	FMP824	FMP1129	-	44.16	50.48	5.36	0.00
SS	8	18 425.92	FMP1	FMP827	FMP1131	-	43.05	51.58	5.36	0.00
SS	10	25 210.01	FMP1	FMP830	FMP1133	-	43.88	49.42	6.70	0.00
SS	12	33 018.28	FMP1	FMP832	FMP1135	-	42.89	48.21	8.90	0.00
SS	14	42 390.75	FMP1	FMP835	FMP1138	-	42.98	47.08	9.94	0.00
SS	16	38 227.05	FMP1	FMP838	FMP1141	-	42.84	47.09	10.07	0.00
SS	18	36 751.30	FMP1	FMP841	FMP1144	-	42.88	45.90	11.21	0.00
SS	20	32 428.01	FMP1	FMP844	FMP1147	-	43.40	47.15	9.45	0.00
SS	22	20 841.30	FMP1	FMP847	FMP1150	-	42.82	49.54	7.64	0.00
SS	24	30 048.22	FMP1	FMP850	FMP1153	-	42.86	47.48	9.66	0.00
SS	26	1 732.42	FMP1	FMP852	FMP1156	-	42.82	47.51	9.67	0.00
SS	28	0.33	FMP1	FMP854	FMP1159	-	42.82	47.52	9.67	0.00
SS	30	1.57	FMP1	FMP855	FMP1160	-	42.82	47.51	9.67	0.00
SP	4	24 010.47	FMP1	FMP857	FMP1162	-	77.10	15.51	7.39	0.00
SP	6	11 334.27	FMP1	FMP860	FMP1165	-	52.86	27.84	19.30	0.00
SP	8	18 896.55	FMP1	FMP863	FMP1168	-	47.58	17.05	35.37	0.00
SP	10	21 910.04	FMP1	FMP866	FMP1171	-	44.93	19.16	35.92	0.00
SP	12	19 605.13	FMP1	FMP869	FMP1174	-	44.25	20.45	35.30	0.00
SP	14	21 552.95	FMP1	FMP872	FMP1177	-	43.44	48.46	8.10	0.00
CP	4	25.35	FMP1	FMP877	FMP1181	-	42.76	24.98	32.26	0.00
CP	6	205.07	FMP1	FMP878	FMP1184	-	43.08	24.84	32.08	0.00
CP	8	341.38	FMP1	FMP879	FMP1187	-	42.79	24.97	32.24	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
CP	10	577.42	FMP1	FMP880	FMP1190	-	42.76	24.98	32.26	0.00
CP	12	857.15	FMP1	FMP881	FMP1193	-	42.76	24.98	32.26	0.00
CP	14	315.41	FMP1	FMP877	FMP1196	-	42.76	24.98	32.26	0.00
LP	4	2 950.23	FMP1	FMP883	FMP1206	-	42.76	51.52	5.72	0.00
LP	6	8 388.64	FMP1	FMP886	FMP1209	-	43.26	49.83	6.91	0.00
LP	8	12 251.09	FMP1	FMP889	FMP1212	-	42.85	50.04	7.11	0.00
LP	10	9 046.53	FMP1	FMP892	FMP1215	-	43.07	50.34	6.59	0.00
LP	12	3 479.88	FMP1	FMP895	FMP1218	-	42.76	51.75	5.49	0.00
LP	14	2 078.44	FMP1	FMP898	FMP1221	-	42.76	55.34	1.90	0.00
LP	20	78.03	FMP1	FMP903	FMP1226	-	42.76	55.34	1.90	0.00
EL	2	146.63	FMP1	FMP905	FMP1228	-	42.76	17.17	40.07	0.00
EL	4	621.88	FMP1	FMP907	FMP1230	-	47.18	15.85	36.97	0.00
EL	6	1 318.22	FMP1	FMP910	FMP1233	-	44.93	35.13	19.94	0.00
EL	8	913.63	FMP1	FMP913	FMP1236	-	42.83	34.98	22.19	0.00
EL	10	933.99	FMP1	FMP916	FMP1239	-	43.46	16.96	39.58	0.00
EL	12	928.09	FMP1	FMP919	FMP1242	-	44.26	16.72	39.02	0.00
EL	14	214.14	FMP1	FMP922	FMP1245	-	49.11	15.27	35.62	0.00
JL	2	375.73	FMP1	FMP925	FMP1248	-	42.86	44.26	12.88	0.00
JL	4	3 176.06	FMP1	FMP927	FMP1250	-	50.64	38.23	11.13	0.00
JL	6	5 547.01	FMP1	FMP930	FMP1253	-	47.16	39.77	13.08	0.00
JL	8	5 248.15	FMP1	FMP933	FMP1256	-	43.27	43.62	13.11	0.00
JL	10	7 409.08	FMP1	FMP936	FMP1259	-	43.58	44.81	11.61	0.00

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			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
JL	12	6 439.04	FMP1	FMP939	FMP1262	-	44.81	47.07	8.12	0.00
JL	14	6 508.71	FMP1	FMP942	FMP1265	-	44.28	51.72	4.00	0.00
DF	6	312.34	FMP1	FMP945	FMP1268	-	95.29	1.89	2.83	0.00
DF	8	1 552.65	FMP1	FMP948	FMP1271	-	60.03	15.99	23.98	0.00
DF	10	1 800.11	FMP1	FMP951	FMP1274	-	45.56	21.77	32.66	0.00
DF	12	3 003.18	FMP1	FMP954	FMP1277	-	48.03	29.34	22.63	0.00
DF	14	1 648.88	FMP1	FMP957	FMP1280	-	44.16	32.51	23.33	0.00
DF	16	714.08	FMP1	FMP960	FMP1283	-	43.29	22.68	34.03	0.00
DF	18	751.58	FMP1	FMP963	FMP1286	-	43.29	22.68	34.03	0.00
DF	20	266.37	FMP1	FMP965	FMP1289	-	43.23	22.71	34.06	0.00
DF	22	718.14	FMP1	FMP967	FMP1292	-	65.35	13.86	20.79	0.00
DF	24	503.67	FMP1	FMP969	FMP1295	-	43.13	22.75	34.12	0.00
DF	26	4.24	FMP1	FMP971	FMP1298	-	43.29	22.68	34.03	0.00
GF	6	2.45	FMP1	FMP973	FMP1300	-	80.25	15.80	3.95	0.00
GF	8	30.81	FMP1	FMP975	FMP1302	-	53.44	37.24	9.31	0.00
GF	10	39.05	FMP1	FMP977	FMP1304	-	58.35	33.32	8.33	0.00
GF	12	150.43	FMP1	FMP980	FMP1307	-	48.47	41.22	10.31	0.00
GF	14	67.61	FMP1	FMP983	FMP1310	-	46.04	43.16	10.79	0.00
GF	16	32.66	FMP1	FMP985	FMP1313	-	43.30	45.36	11.34	0.00
GF	18	38.03	FMP1	FMP988	FMP1316	-	43.18	45.46	11.36	0.00
GF	20	33.84	FMP1	FMP991	FMP1319	-	43.33	45.34	11.33	0.00
GF	22	154.39	FMP1	FMP994	FMP1322	-	61.93	30.46	7.61	0.00

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			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
GF	24	44.52	FMP1	FMP997	FMP1325	-	43.33	45.34	11.33	0.00
GF	26	25.97	FMP1	FMP1000	FMP1328	-	42.96	45.63	11.41	0.00
GF	28	35.00	FMP1	FMP1003	FMP1331	-	63.07	29.54	7.39	0.00
GF	30	19.55	FMP1	FMP1006	FMP1334	-	62.32	30.14	7.54	0.00
NF	6	91.97	FMP1	FMP1009	FMP1337	-	92.06	6.35	1.59	0.00
NF	8	327.64	FMP1	FMP1012	FMP1340	-	58.23	33.41	8.35	0.00
NF	10	247.15	FMP1	FMP1015	FMP1343	-	49.00	40.80	10.20	0.00
NF	12	366.16	FMP1	FMP1018	FMP1346	-	48.77	40.99	10.25	0.00
NF	14	178.16	FMP1	FMP1021	FMP1349	-	44.45	44.44	11.11	0.00
NF	16	50.42	FMP1	FMP1023	FMP1352	-	46.13	43.10	10.77	0.00
NF	18	37.23	FMP1	FMP1026	FMP1355	-	43.22	45.42	11.36	0.00
NF	20	15.25	FMP1	FMP1029	FMP1358	-	43.34	45.32	11.33	0.00
NF	22	189.57	FMP1	FMP1032	FMP1361	-	63.97	28.82	7.21	0.00
NF	24	16.51	FMP1	FMP1034	FMP1363	-	42.95	45.64	11.41	0.00
NF	26	0.49	FMP1	FMP1036	FMP1365	-	42.98	45.61	11.40	0.00
NF	28	1.27	FMP1	FMP1037	FMP1366	-	42.95	45.64	11.41	0.00
WH	6	97.81	FMP1	FMP1041	FMP1370	-	80.11	15.91	3.98	0.00
WH	8	264.75	FMP1	FMP1044	FMP1373	-	57.53	33.97	8.49	0.00
WH	10	108.28	FMP1	FMP1047	FMP1376	-	45.48	43.61	10.90	0.00
WH	12	378.79	FMP1	FMP1050	FMP1379	-	47.23	42.21	10.55	0.00
WH	14	145.11	FMP1	FMP1053	FMP1382	-	43.10	45.52	11.38	0.00
WH	16	50.10	FMP1	FMP1055	FMP1385	-	43.24	45.41	11.35	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
WH	18	91.60	FMP1	FMP1058	FMP1388	-	43.21	45.43	11.36	0.00
WH	20	29.76	FMP1	FMP1061	FMP1391	-	43.24	45.41	11.35	0.00
WH	22	106.83	FMP1	FMP1064	FMP1394	-	64.70	28.24	7.06	0.00
WH	24	55.51	FMP1	FMP1067	FMP1397	-	65.11	27.91	6.98	0.00
WH	26	11.79	FMP1	FMP1069	FMP1399	-	62.98	29.62	7.40	0.00
RC	6	43.72	FMP1	FMP1074	FMP1404	-	87.00	10.40	2.60	0.00
RC	8	126.33	FMP1	FMP1077	FMP1407	-	59.59	32.33	8.08	0.00
RC	10	32.49	FMP1	FMP1080	FMP1410	-	45.55	43.56	10.89	0.00
RC	12	81.20	FMP1	FMP1083	FMP1413	-	48.50	41.20	10.30	0.00
RC	14	25.31	FMP1	FMP1086	FMP1416	-	44.67	44.26	11.07	0.00
RC	16	11.64	FMP1	FMP1088	FMP1419	-	43.06	45.55	11.39	0.00
RC	18	12.29	FMP1	FMP1091	FMP1422	-	43.14	45.49	11.37	0.00
RC	20	4.62	FMP1	FMP1094	FMP1425	-	43.14	45.49	11.37	0.00
RC	22	0.70	FMP1	FMP1097	FMP1428	-	62.43	30.05	7.51	0.00
RC	24	2.69	FMP1	FMP1100	FMP1431	-	51.02	39.18	9.80	0.00
OK	2	6 024.02	FMP1	-	FMP1433	-	92.08	0.00	7.92	0.00
OK	4	10 337.41	FMP1	-	FMP1434	-	92.08	0.00	7.92	0.00
OK	6	5 153.97	FMP1	-	FMP1435	-	92.91	0.00	7.09	0.00
OK	8	2 072.06	FMP1	-	FMP1436	-	89.42	0.00	10.58	0.00
AH	2	3 857.25	FMP1	-	FMP1437	-	92.08	0.00	7.92	0.00
AH	4	3 488.72	FMP1	-	FMP1438	-	92.08	0.00	7.92	0.00
AH	6	2 910.22	FMP1	-	FMP1439	-	92.15	0.00	7.85	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
AH	8	1 720.56	FMP1	-	FMP1440	-	92.15	0.00	7.85	0.00
AH	10	1 231.82	FMP1	-	FMP1441	-	92.08	0.00	7.92	0.00
AH	12	1 577.88	FMP1	-	FMP1442	-	92.08	0.00	7.92	0.00
BE	4	3 654.45	FMP1	-	FMP1444	-	92.08	0.00	7.92	0.00
BE	6	5 076.30	FMP1	-	FMP1445	-	92.61	0.00	7.39	0.00
BE	8	2 860.50	FMP1	-	FMP1446	-	92.08	0.00	7.92	0.00
BE	10	2 606.88	FMP1	-	FMP1447	-	92.32	0.00	7.68	0.00
BI	2	74 753.55	FMP1	-	FMP1449	-	92.08	0.00	7.92	0.00
BI	4	28 509.93	FMP1	-	FMP1450	-	92.08	0.00	7.92	0.00
BI	6	13 976.54	FMP1	-	FMP1451	-	92.08	0.00	7.92	0.00
BI	8	5 749.45	FMP1	-	FMP1452	-	92.08	0.00	7.92	0.00
BI	10	3 730.03	FMP1	-	FMP1453	-	92.08	0.00	7.92	0.00
BI	12	1 743.03	FMP1	-	FMP1454	-	92.08	0.00	7.92	0.00
SY	2	60 986.35	FMP1	-	FMP1455	-	99.32	0.00	0.68	0.00
SY	4	2 794.99	FMP1	-	FMP1456	-	92.08	0.00	7.92	0.00
SY	6	4 233.83	FMP1	-	FMP1457	-	93.81	0.00	6.19	0.00
SY	8	3 045.11	FMP1	-	FMP1458	-	92.15	0.00	7.85	0.00
SY	10	2 484.86	FMP1	-	FMP1459	-	92.18	0.00	7.82	0.00
SY	12	2 803.74	FMP1	-	FMP1460	-	92.08	0.00	7.92	0.00
PO	2	26 911.57	FMP1	-	FMP1461	-	92.08	0.00	7.92	0.00
PO	4	13 529.06	FMP1	-	FMP1462	-	92.08	0.00	7.92	0.00
PO	6	6 133.22	FMP1	-	FMP1463	-	92.08	0.00	7.92	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
PO	8	3 227.35	FMP1	-	FMP1464	-	92.08	0.00	7.92	0.00
PO	10	412.08	FMP1	-	FMP1465	-	92.08	0.00	7.92	0.00
PO	12	130.24	FMP1	-	FMP1466	-	92.08	0.00	7.92	0.00
NO	2	900.76	FMP1	-	FMP1468	-	92.08	0.00	7.92	0.00
NO	4	1 259.79	FMP1	-	FMP1469	-	92.08	0.00	7.92	0.00
NO	6	594.70	FMP1	-	FMP1470	-	92.19	0.00	7.81	0.00
NO	8	388.31	FMP1	-	FMP1471	-	92.61	0.00	7.39	0.00
NO	10	1 750.47	FMP1	-	FMP1472	-	92.20	0.00	7.80	0.00
NO	12	792.69	FMP1	-	FMP1473	-	92.14	0.00	7.86	0.00

Wales, Public forest estate

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	2	128.38	FMP1	FMP4	FMP291	FMP588	43.58	8.33	24.52	23.57
NS	4	65.33	FMP1	FMP7	FMP294	FMP589	39.21	17.30	17.47	26.01
NS	6	135.17	FMP1	FMP10	FMP497	FMP590	43.52	15.94	22.03	18.51
NS	8	322.73	FMP1	FMP13	FMP300	FMP591	38.35	17.79	26.88	16.98
NS	10	984.23	FMP1	FMP16	FMP303	FMP592	38.59	14.50	15.95	30.96

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	12	1 689.42	FMP1	FMP19	FMP306	FMP593	40.00	12.91	21.23	25.86
NS	14	1 228.81	FMP1	FMP22	FMP309	FMP594	36.37	11.27	23.70	28.65
NS	16	955.89	FMP1	FMP25	FMP312	FMP595	37.00	14.81	19.18	29.00
NS	18	558.75	FMP1	FMP28	FMP315	FMP596	35.31	14.66	16.88	33.15
NS	20	288.26	FMP1	FMP31	FMP318	FMP597	37.17	14.28	21.07	27.47
NS	22	221.01	FMP1	FMP34	FMP321	FMP598	35.27	11.34	30.61	22.78
NS	24	6.54	FMP1	-	FMP323	FMP599	34.38	0.00	20.53	45.10
SS	2	506.05	FMP1	FMP40	FMP327	FMP602	40.21	32.77	24.75	2.28
SS	4	438.54	FMP1	FMP43	FMP330	FMP603	38.89	19.60	41.37	0.13
SS	6	675.52	FMP1	FMP46	FMP333	FMP604	37.25	36.31	24.16	2.29
SS	8	1 419.65	FMP1	FMP49	FMP336	FMP605	38.18	37.80	22.98	1.04
SS	10	3 374.91	FMP1	FMP52	FMP339	FMP606	37.99	27.43	30.36	4.22
SS	12	11 885.75	FMP1	FMP55	FMP342	FMP607	37.57	20.81	36.08	5.55
SS	14	11 006.13	FMP1	FMP58	FMP345	FMP608	36.61	18.79	36.01	8.59
SS	16	8 028.70	FMP1	FMP61	FMP348	FMP609	36.57	18.73	34.16	10.55
SS	18	4 758.45	FMP1	FMP64	FMP351	FMP610	35.41	15.11	35.47	14.01
SS	20	2 599.81	FMP1	FMP67	FMP254	FMP611	35.00	11.35	41.86	11.79
SS	22	1 705.32	FMP1	FMP70	FMP257	FMP612	34.96	11.45	37.61	15.98
SS	24	2 008.31	FMP1	FMP73	FMP360	FMP613	34.57	5.64	46.75	13.04
SS	26	3.30	FMP1	-	FMP363	-	34.38	0.00	65.62	0.00
SP	2	10.67	FMP1	FMP80	FMP369	FMP616	51.79	9.55	19.59	19.07
SP	4	68.69	FMP1	FMP83	FMP372	FMP617	40.96	16.30	10.21	32.53

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			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SP	6	202.70	FMP1	FMP86	FMP375	FMP618	40.39	17.07	19.76	22.78
SP	8	546.35	FMP1	FMP89	FMP378	FMP619	38.23	17.64	12.31	31.81
SP	10	898.81	FMP1	FMP92	FMP381	FMP620	39.70	17.36	11.83	31.12
SP	12	356.66	FMP1	FMP95	FMP384	FMP621	42.65	16.27	5.68	35.40
SP	14	139.49	FMP1	FMP98	FMP387	FMP622	36.44	14.31	16.39	32.85
SP	16	47.92	FMP1	-	FMP390	FMP623	34.38	0.00	6.42	59.20
SP	20	0.66	FMP1	-	FMP393	FMP625	34.38	0.00	0.02	65.60
CP	2	18.07	FMP1	FMP103	-	FMP626	37.25	5.35	0.00	57.40
CP	4	9.33	FMP1	FMP105	FMP398	FMP627	58.86	27.91	0.00	13.23
CP	6	79.13	FMP1	FMP108	FMP401	FMP628	34.96	12.16	26.72	26.16
CP	8	158.80	FMP1	FMP111	FMP404	FMP629	35.93	10.53	5.19	48.34
CP	10	393.16	FMP1	FMP114	FMP407	FMP630	34.94	7.76	10.00	47.29
CP	12	505.34	FMP1	FMP117	FMP410	FMP631	35.37	5.66	9.36	49.61
CP	14	263.29	FMP1	FMP120	FMP413	FMP632	35.62	11.12	11.59	41.68
CP	16	214.40	FMP1	FMP122	FMP415	FMP633	36.02	16.34	5.51	42.13
CP	18	31.06	FMP1	FMP124	FMP417	FMP634	34.52	15.28	14.17	36.03
CP	20	21.33	FMP1	FMP125	FMP419	FMP635	34.65	27.23	19.33	18.79
CP	22	0.27	FMP1	FMP126	FMP421	FMP636	34.65	27.23	19.33	18.79
LP	2	103.83	FMP1	FMP129	FMP424	FMP638	37.72	18.46	39.35	4.47
LP	4	284.21	FMP1	FMP132	FMP427	FMP639	39.12	27.52	31.64	1.73
LP	6	654.29	FMP1	FMP135	FMP430	FMP640	37.56	35.97	23.13	3.33
LP	8	793.96	FMP1	FMP138	FMP433	FMP641	39.29	35.36	19.88	5.47

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LP	10	371.35	FMP1	FMP141	FMP436	FMP642	38.02	35.04	19.54	7.39
LP	12	145.44	FMP1	FMP144	FMP439	FMP643	39.28	41.80	16.25	2.67
LP	14	54.93	FMP1	FMP147	FMP442	FMP644	37.79	41.35	14.61	6.25
LP	16	8.92	FMP1	FMP149	FMP445	FMP645	67.93	0.15	22.35	9.57
LP	20	3.53	FMP1	-	-	FMP647	34.38	0.00	0.00	65.62
EL	2	1.89	FMP1	-	FMP451	FMP648	34.38	0.00	47.77	17.85
EL	4	13.07	FMP1	FMP153	FMP454	FMP649	35.92	26.15	0.00	37.93
EL	6	30.26	FMP1	FMP156	FMP457	FMP650	48.37	5.82	6.84	38.96
EL	8	64.95	FMP1	FMP159	FMP460	FMP651	35.76	5.76	10.99	47.49
EL	10	33.76	FMP1	FMP162	FMP463	FMP652	39.45	5.25	2.20	53.10
EL	12	30.38	FMP1	FMP165	FMP466	FMP653	34.84	3.00	12.17	49.98
EL	14	2.61	FMP1	-	FMP469	FMP654	34.38	0.00	8.93	56.70
EL	16	1.95	FMP1	-	FMP471	FMP655	34.38	0.00	12.85	52.77
JL	2	23.14	FMP1	FMP171	FMP475	FMP657	39.78	37.04	15.41	7.77
JL	4	76.03	FMP1	FMP174	FMP478	FMP658	43.75	33.41	11.84	11.00
JL	6	218.18	FMP1	FMP177	FMP481	FMP659	37.75	21.60	19.19	21.45
JL	8	922.32	FMP1	FMP180	FMP484	FMP660	36.92	16.11	18.44	28.53
JL	10	2 778.19	FMP1	FMP183	FMP487	FMP661	36.55	11.23	18.53	33.69
JL	12	2 924.49	FMP1	FMP186	FMP490	FMP662	36.55	12.64	15.71	35.10
JL	14	2 568.29	FMP1	FMP189	FMP493	FMP663	36.12	12.23	13.28	38.38
JL	16	168.05	FMP1	FMP192	FMP496	FMP664	35.06	4.05	29.67	31.22
JL	24	0.21	FMP1	-	FMP499	FMP667	34.42	0.00	28.74	36.85

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DF	2	3.18	FMP1	FMP196	FMP502	FMP668	34.39	5.33	2.85	57.43
DF	4	1.61	FMP1	-	FMP505	FMP669	34.38	0.00	3.11	62.52
DF	6	6.11	FMP1	-	FMP507	FMP670	34.38	0.00	29.77	35.85
DF	8	32.38	FMP1	FMP200	FMP510	FMP671	45.83	0.44	24.38	29.36
DF	10	208.12	FMP1	FMP203	FMP513	FMP672	37.67	9.91	19.49	32.93
DF	12	944.06	FMP1	FMP206	FMP516	FMP673	35.42	6.64	11.81	46.14
DF	14	1 002.78	FMP1	FMP209	FMP519	FMP674	37.30	6.70	11.61	44.39
DF	16	1 523.93	FMP1	FMP212	FMP522	FMP675	35.95	6.48	16.89	40.69
DF	18	808.20	FMP1	FMP215	FMP525	FMP676	35.10	5.84	17.90	41.16
DF	20	368.25	FMP1	FMP218	FMP528	FMP677	34.99	6.13	9.00	49.88
DF	22	242.60	FMP1	FMP221	FMP531	FMP678	35.01	5.66	31.76	27.58
DF	24	259.37	FMP1	FMP224	FMP534	FMP679	34.58	2.04	8.99	54.39
GF	2	4.72	FMP1	FMP226	FMP536	FMP681	34.38	39.37	14.80	11.45
GF	4	3.93	FMP1	FMP227	FMP537	FMP682	95.46	3.18	0.76	0.59
GF	10	7.16	FMP1	-	FMP540	FMP685	34.38	0.00	64.81	0.82
GF	12	17.02	FMP1	FMP231	FMP541	FMP686	38.72	3.32	22.13	35.83
GF	14	28.13	FMP1	FMP233	FMP542	FMP687	36.05	6.58	13.76	43.62
GF	16	78.63	FMP1	FMP235	FMP543	FMP688	34.49	3.30	32.35	29.87
GF	18	33.80	FMP1	FMP237	FMP544	FMP689	37.97	17.28	20.92	23.83
GF	20	88.10	FMP1	FMP239	FMP545	FMP690	36.32	6.48	21.79	35.40
GF	22	29.99	FMP1	FMP241	FMP546	FMP691	34.45	12.27	34.84	18.44
GF	24	45.34	FMP1	FMP243	FMP547	FMP692	34.68	6.84	30.04	28.44

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GF	26	29.40	FMP1	FMP245	FMP548	FMP693	34.60	4.59	38.21	22.60
GF	28	30.86	FMP1	FMP247	FMP549	FMP694	34.52	3.33	43.50	18.65
GF	30	18.04	FMP1	FMP248	FMP550	FMP695	35.12	6.13	9.30	49.46
NF	2	1.55	FMP1	-	FMP551	FMP696	40.19	0.00	23.78	36.03
NF	4	5.75	FMP1	FMP250	FMP552	FMP697	36.77	39.85	14.16	9.21
NF	6	19.72	FMP1	FMP251	FMP553	-	34.42	38.69	26.90	0.00
NF	8	6.15	FMP1	FMP252	FMP554	FMP699	34.38	17.33	46.44	1.86
NF	10	45.35	FMP1	FMP253	FMP555	-	47.27	39.74	12.99	0.00
NF	12	82.18	FMP1	FMP254	FMP556	FMP701	37.46	22.59	31.79	8.16
NF	14	79.36	FMP1	FMP255	FMP557	FMP702	36.98	24.37	5.81	32.83
NF	16	75.16	FMP1	FMP256	FMP558	FMP703	35.58	18.85	31.24	14.32
NF	18	34.19	FMP1	FMP257	FMP559	FMP704	34.94	12.32	18.22	34.51
NF	20	23.30	FMP1	FMP258	FMP560	FMP705	34.74	8.35	21.54	35.37
NF	22	32.37	FMP1	FMP259	FMP561	FMP706	35.72	9.59	50.98	3.70
NF	24	0.71	FMP1	FMP260	FMP562	FMP707	34.49	10.83	50.98	3.70
WH	2	5.25	FMP1	FMP263	FMP563	FMP708	53.38	43.28	2.58	0.76
WH	4	1.91	FMP1	-	FMP564	-	34.39	0.00	65.61	0.00
WH	6	6.43	FMP1	FMP265	FMP565	FMP710	34.88	44.61	19.29	1.21
WH	8	3.98	FMP1	FMP266	-	FMP711	41.41	21.10	0.00	37.50
WH	10	12.42	FMP1	FMP267	FMP567	FMP712	35.59	5.98	57.97	0.47
WH	12	50.20	FMP1	FMP268	FMP568	FMP713	42.04	24.38	25.28	8.30
WH	14	98.08	FMP1	FMP269	FMP569	FMP714	35.11	17.22	31.88	15.80

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			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
WH	16	140.90	FMP1	FMP270	FMP570	FMP715	35.40	18.32	27.46	18.82
WH	18	166.46	FMP1	FMP271	FMP571	FMP716	35.44	14.98	39.26	10.32
WH	20	109.57	FMP1	FMP272	FMP572	FMP717	34.65	14.94	31.95	18.46
WH	22	73.68	FMP1	FMP273	FMP573	FMP718	36.41	19.23	28.06	16.31
WH	24	82.22	FMP1	FMP274	FMP574	FMP719	34.53	14.27	42.19	9.01
WH	26	0.21	FMP1	-	FMP575	FMP720	34.38	0.00	63.46	2.16
RC	2	12.18	FMP1	FMP276	FMP576	FMP721	34.38	26.41	38.84	0.37
RC	4	2.46	FMP1	-	FMP577	FMP722	34.38	0.00	21.72	43.90
RC	6	11.06	FMP1	-	FMP578	FMP723	34.38	0.00	21.72	43.90
RC	8	9.56	FMP1	FMP279	FMP579	FMP724	34.79	11.55	17.76	35.90
RC	10	53.71	FMP1	FMP280	FMP580	FMP725	34.49	21.39	30.39	13.73
RC	12	72.51	FMP1	FMP281	FMP581	FMP726	42.38	15.70	21.82	20.09
RC	14	59.45	FMP1	FMP282	FMP582	FMP727	36.91	26.24	20.29	16.56
RC	16	77.95	FMP1	FMP283	FMP583	FMP728	36.25	15.13	25.05	23.57
RC	18	43.05	FMP1	FMP284	FMP584	FMP729	38.12	11.46	17.34	33.07
RC	20	32.96	FMP1	FMP285	FMP585	FMP730	34.68	10.27	28.68	26.38
RC	22	17.95	FMP1	FMP286	FMP586	FMP731	36.89	12.90	7.04	43.17
RC	24	7.99	FMP1	FMP288	FMP587	FMP732	35.01	19.05	6.44	39.49
OK	2	273.51	FMP1	-	-	FMP733	66.87	0.00	0.00	33.13
OK	4	662.28	FMP1	-	-	FMP734	59.63	0.00	0.00	40.37
OK	6	642.99	FMP1	-	-	FMP735	58.36	0.00	0.00	41.64
OK	8	296.24	FMP1	-	-	FMP736	63.33	0.00	0.00	36.67

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
OK	10	30.34	FMP1	-	-	FMP737	55.39	0.00	0.00	44.61
OK	12	5.45	FMP1	-	-	FMP738	80.54	0.00	0.00	19.46
OK	14	4.32	FMP1	-	-	FMP739	80.54	0.00	0.00	19.46
OK	16	0.27	FMP1	-	-	FMP740	80.54	0.00	0.00	19.46
OK	20	0.61	FMP1	-	-	FMP741	80.54	0.00	0.00	19.46
AH	2	30.74	FMP1	-	-	FMP742	60.80	0.00	0.00	39.20
AH	4	128.17	FMP1	-	-	FMP743	59.98	0.00	0.00	40.02
AH	6	76.60	FMP1	-	-	FMP744	64.31	0.00	0.00	35.69
AH	8	62.48	FMP1	-	-	FMP745	62.75	0.00	0.00	37.25
AH	10	19.63	FMP1	-	-	FMP746	61.20	0.00	0.00	38.80
AH	12	4.11	FMP1	-	-	FMP747	64.55	0.00	0.00	35.45
AH	14	0.11	FMP1	-	-	FMP748	61.44	0.00	0.00	38.56
AH	18	2.83	FMP1	-	-	FMP750	68.22	0.00	0.00	31.78
AH	20	1.99	FMP1	-	-	FMP751	55.39	0.00	0.00	44.61
BE	2	95.79	FMP1	-	-	FMP752	61.35	0.00	0.00	38.65
BE	4	250.68	FMP1	-	-	FMP753	60.99	0.00	0.00	39.01
BE	6	498.47	FMP1	-	-	FMP754	64.80	0.00	0.00	35.20
BE	8	526.73	FMP1	-	-	FMP755	61.23	0.00	0.00	38.77
BE	10	64.18	FMP1	-	-	FMP756	60.89	0.00	0.00	39.11
BE	12	0.45	FMP1	-	-	FMP757	55.39	0.00	0.00	44.61
BE	16	0.87	FMP1	-	-	FMP759	55.39	0.00	0.00	44.61
BI	2	339.22	FMP1	-	-	FMP761	60.80	0.00	0.00	39.20

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
BI	4	392.22	FMP1	-	-	FMP762	59.98	0.00	0.00	40.02
BI	6	139.42	FMP1	-	-	FMP763	64.31	0.00	0.00	35.69
BI	8	122.70	FMP1	-	-	FMP764	62.75	0.00	0.00	37.25
BI	10	7.04	FMP1	-	-	FMP765	61.20	0.00	0.00	38.80
BI	12	12.78	FMP1	-	-	FMP766	64.55	0.00	0.00	35.45
BI	14	0.51	FMP1	-	-	FMP767	61.44	0.00	0.00	38.56
BI	16	3.62	FMP1	-	-	FMP768	84.07	0.00	0.00	15.93
BI	18	2.39	FMP1	-	-	FMP769	68.22	0.00	0.00	31.78
BI	20	0.77	FMP1	-	-	FMP770	55.39	0.00	0.00	44.61
SY	2	1 648.79	FMP1	-	-	FMP772	60.80	0.00	0.00	39.20
SY	4	2 191.01	FMP1	-	-	FMP773	59.98	0.00	0.00	40.02
SY	6	534.55	FMP1	-	-	FMP774	64.31	0.00	0.00	35.69
SY	8	570.73	FMP1	-	-	FMP775	62.75	0.00	0.00	37.25
SY	10	165.82	FMP1	-	-	FMP776	61.20	0.00	0.00	38.80
SY	12	79.54	FMP1	-	-	FMP777	64.55	0.00	0.00	35.45
SY	14	18.48	FMP1	-	-	FMP778	61.44	0.00	0.00	38.56
SY	16	1.77	FMP1	-	-	FMP779	84.07	0.00	0.00	15.93
SY	18	6.88	FMP1	-	-	FMP780	68.22	0.00	0.00	31.78
SY	20	0.09	FMP1	-	-	FMP781	55.39	0.00	0.00	44.61
SY	24	0.51	FMP1	-	-	FMP783	55.39	0.00	0.00	44.61
PO	2	0.51	FMP1	-	-	FMP784	60.80	0.00	0.00	39.20
PO	4	14.70	FMP1	-	-	FMP785	59.98	0.00	0.00	40.02

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
PO	6	8.22	FMP1	-	-	FMP786	64.31	0.00	0.00	35.69
PO	8	4.37	FMP1	-	-	FMP787	62.75	0.00	0.00	37.25
PO	10	5.64	FMP1	-	-	FMP788	61.20	0.00	0.00	38.80
PO	12	0.96	FMP1	-	-	FMP789	64.55	0.00	0.00	35.45
PO	14	0.24	FMP1	-	-	FMP790	61.44	0.00	0.00	38.56
NO	4	1.99	FMP1	-	-	FMP794	59.98	0.00	0.00	40.02
NO	6	7.26	FMP1	-	-	FMP795	64.31	0.00	0.00	35.69
NO	8	7.08	FMP1	-	-	FMP796	62.75	0.00	0.00	37.25
NO	10	9.43	FMP1	-	-	FMP797	61.20	0.00	0.00	38.80
NO	12	5.11	FMP1	-	-	FMP798	64.55	0.00	0.00	35.45
NO	14	3.97	FMP1	-	-	FMP799	61.44	0.00	0.00	38.56
NO	16	1.18	FMP1	-	-	FMP800	84.07	0.00	0.00	15.93
NO	18	2.96	FMP1	-	-	FMP801	68.22	0.00	0.00	31.78

Wales, Private sector

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	4	80.05	FMP1	FMP802	FMP1102	-	42.74	5.73	51.53	0.00
NS	6	108.24	FMP1	FMP805	FMP1105	-	73.56	2.64	23.80	0.00
NS	8	291.97	FMP1	FMP808	FMP1108	-	56.26	4.37	39.37	0.00
NS	10	231.44	FMP1	-	FMP1111	-	48.18	0.00	51.82	0.00
NS	12	403.51	FMP1	-	FMP1114	-	59.68	0.00	40.32	0.00
NS	14	564.04	FMP1	-	FMP1117	-	44.96	0.00	55.04	0.00
NS	16	160.35	FMP1	-	FMP1120	-	42.74	0.00	57.26	0.00
NS	18	119.81	FMP1	-	FMP1123	-	42.74	0.00	57.26	0.00
NS	20	115.68	FMP1	-	FMP1125	-	42.83	0.00	57.17	0.00
NS	22	690.81	FMP1	-	FMP1126	-	42.74	0.00	57.26	0.00
NS	24	19.37	FMP1	-	FMP1127	-	43.14	0.00	56.86	0.00
SS	6	2 556.41	FMP1	FMP825	-	-	50.83	49.17	0.00	0.00
SS	8	2 032.33	FMP1	FMP828	-	-	43.86	56.14	0.00	0.00
SS	10	3 023.10	FMP1	FMP830	-	-	47.32	52.68	0.00	0.00
SS	12	3 622.01	FMP1	FMP833	FMP1136	-	42.74	40.08	17.18	0.00
SS	14	3 635.49	FMP1	FMP836	FMP1139	-	45.23	36.69	18.07	0.00
SS	16	2 724.67	FMP1	FMP839	FMP1142	-	42.84	28.58	28.58	0.00
SS	18	1 979.37	FMP1	FMP842	FMP1145	-	42.74	22.90	34.36	0.00
SS	20	3 437.24	FMP1	FMP845	FMP1148	-	42.74	17.18	40.08	0.00
SS	22	1 636.58	FMP1	FMP848	FMP1151	-	42.75	17.18	40.08	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SS	24	2 994.84	FMP1	FMP850	FMP1154	-	42.74	17.18	40.08	0.00
SS	26	4.95	FMP1	FMP852	FMP1157	-	42.74	17.18	40.08	0.00
SP	4	6 551.40	FMP1	FMP858	FMP1163	-	99.41	0.09	0.50	0.00
SP	6	156.68	FMP1	FMP861	FMP1166	-	73.19	4.02	22.79	0.00
SP	8	498.26	FMP1	FMP864	FMP1169	-	57.55	6.37	36.09	0.00
SP	10	196.23	FMP1	FMP867	FMP1172	-	48.31	7.75	43.94	0.00
SP	12	98.42	FMP1	FMP870	FMP1175	-	60.07	5.99	33.94	0.00
SP	14	64.13	FMP1	FMP873	FMP1178	-	45.00	8.25	46.75	0.00
SP	16	6.18	FMP1	FMP874	FMP1179	-	78.74	3.19	18.07	0.00
SP	20	0.27	FMP1	FMP875	FMP1180	-	83.45	2.48	14.07	0.00
CP	4	13.29	FMP1	-	FMP1182	-	42.74	0.00	57.26	0.00
CP	6	66.79	FMP1	-	FMP1185	-	73.89	0.00	26.11	0.00
CP	8	161.90	FMP1	-	FMP1188	-	56.04	0.00	43.96	0.00
CP	10	110.19	FMP1	-	FMP1191	-	48.19	0.00	51.81	0.00
CP	12	173.29	FMP1	-	FMP1194	-	62.62	0.00	37.38	0.00
CP	14	152.93	FMP1	-	FMP1197	-	44.90	0.00	55.10	0.00
CP	16	44.29	FMP1	-	FMP1199	-	42.74	0.00	57.26	0.00
CP	18	7.14	FMP1	-	FMP1201	-	42.74	0.00	57.26	0.00
CP	20	9.10	FMP1	-	FMP1203	-	42.85	0.00	57.15	0.00
CP	22	0.88	FMP1	-	FMP1204	-	42.74	0.00	57.26	0.00
LP	4	377.08	FMP1	FMP884	FMP1207	-	42.74	45.81	11.45	0.00
LP	6	500.86	FMP1	FMP887	FMP1210	-	76.79	18.57	4.64	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
LP	8	732.24	FMP1	FMP890	FMP1213	-	61.66	30.67	7.67	0.00
LP	10	94.76	FMP1	FMP893	FMP1216	-	58.03	33.57	8.39	0.00
LP	12	43.24	FMP1	FMP896	FMP1219	-	65.22	27.83	6.96	0.00
LP	14	28.89	FMP1	FMP898	FMP1221	-	46.59	42.72	10.68	0.00
LP	16	1.68	FMP1	FMP900	FMP1223	-	42.74	45.81	11.45	0.00
LP	20	1.37	FMP1	FMP903	FMP1226	-	42.84	45.73	11.43	0.00
EL	4	64.81	FMP1	FMP908	FMP1231	-	42.74	11.45	45.81	0.00
EL	6	142.42	FMP1	FMP911	FMP1234	-	46.74	10.65	42.61	0.00
EL	8	50.95	FMP1	FMP914	FMP1237	-	42.74	11.45	45.81	0.00
EL	10	12.80	FMP1	FMP917	FMP1240	-	42.74	11.45	45.81	0.00
EL	12	12.37	FMP1	FMP920	FMP1243	-	49.27	10.15	40.58	0.00
EL	14	2.97	FMP1	FMP923	FMP1246	-	51.28	9.74	38.98	0.00
JL	4	377.55	FMP1	FMP928	FMP1251	-	49.17	10.17	40.66	0.00
JL	6	1 063.56	FMP1	FMP931	FMP1254	-	60.18	7.96	31.86	0.00
JL	8	779.37	FMP1	FMP934	FMP1257	-	46.12	10.78	43.10	0.00
JL	10	1 017.44	FMP1	FMP937	FMP1260	-	55.24	8.95	35.81	0.00
JL	12	1 157.75	FMP1	FMP940	FMP1263	-	48.78	10.24	40.97	0.00
JL	14	2 865.71	FMP1	FMP943	FMP1266	-	50.13	9.97	39.89	0.00
DF	4	2.23	FMP1	FMP944	FMP1267	-	42.74	11.45	45.81	0.00
DF	6	3.41	FMP1	FMP946	FMP1269	-	71.16	5.77	23.07	0.00
DF	8	23.60	FMP1	FMP949	FMP1272	-	53.95	9.21	36.84	0.00
DF	10	44.04	FMP1	FMP952	FMP1275	-	48.62	10.28	41.10	0.00

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			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
DF	12	230.91	FMP1	FMP955	FMP1278	-	60.71	7.86	31.43	0.00
DF	14	479.14	FMP1	FMP958	FMP1281	-	45.03	10.99	43.98	0.00
DF	16	246.29	FMP1	FMP961	FMP1284	-	42.74	11.45	45.81	0.00
DF	18	167.11	FMP1	-	FMP1287	-	42.74	0.00	57.26	0.00
DF	20	147.93	FMP1	-	FMP1290	-	51.63	0.00	48.37	0.00
DF	22	750.88	FMP1	-	FMP1293	-	42.74	0.00	57.26	0.00
DF	24	764.13	FMP1	-	FMP1296	-	42.90	0.00	57.10	0.00
GF	4	5.08	FMP1	FMP972	FMP1299	-	42.74	17.18	40.08	0.00
GF	10	1.81	FMP1	FMP978	FMP1305	-	48.94	15.32	35.74	0.00
GF	12	4.39	FMP1	FMP981	FMP1308	-	67.82	9.66	22.53	0.00
GF	14	13.82	FMP1	FMP983	FMP1311	-	45.29	16.41	38.29	0.00
GF	16	12.81	FMP1	FMP986	FMP1314	-	42.74	17.18	40.08	0.00
GF	18	5.88	FMP1	FMP989	FMP1317	-	42.74	17.18	40.08	0.00
GF	20	32.78	FMP1	FMP992	FMP1320	-	42.78	17.16	40.05	0.00
GF	22	86.92	FMP1	FMP995	FMP1323	-	42.74	17.18	40.08	0.00
GF	24	124.58	FMP1	FMP998	FMP1326	-	42.91	17.13	39.96	0.00
GF	26	80.76	FMP1	FMP1001	FMP1329	-	42.91	17.13	39.96	0.00
GF	28	84.78	FMP1	FMP1004	FMP1332	-	42.91	17.13	39.96	0.00
GF	30	49.58	FMP1	FMP1007	FMP1335	-	42.91	17.13	39.96	0.00
NF	4	7.62	FMP1	FMP1008	FMP1336	-	42.74	17.18	40.08	0.00
NF	6	15.70	FMP1	FMP1010	FMP1338	-	77.51	6.75	15.74	0.00
NF	8	5.77	FMP1	FMP1013	FMP1341	-	57.18	12.85	29.98	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NF	10	8.92	FMP1	FMP1016	FMP1344	-	61.88	11.44	26.68	0.00
NF	12	18.71	FMP1	FMP1019	FMP1347	-	65.27	10.42	24.31	0.00
NF	14	38.87	FMP1	FMP1021	FMP1350	-	45.04	16.49	38.47	0.00
NF	16	12.00	FMP1	FMP1024	FMP1353	-	42.74	17.18	40.08	0.00
NF	18	7.39	FMP1	FMP1027	FMP1356	-	42.74	17.18	40.08	0.00
NF	20	9.35	FMP1	FMP1030	FMP1359	-	42.81	17.16	40.04	0.00
NF	22	99.92	FMP1	FMP1033	FMP1362	-	42.74	17.18	40.08	0.00
NF	24	2.08	FMP1	FMP1035	FMP1364	-	42.90	17.13	39.97	0.00
WH	4	2.52	FMP1	FMP1039	FMP1368	-	72.25	8.33	19.43	0.00
WH	6	4.40	FMP1	FMP1042	FMP1371	-	87.52	3.74	8.73	0.00
WH	8	3.39	FMP1	FMP1045	FMP1374	-	46.22	16.13	37.64	0.00
WH	10	3.20	FMP1	FMP1048	FMP1377	-	55.62	13.31	31.07	0.00
WH	12	15.13	FMP1	FMP1051	FMP1380	-	63.75	10.88	25.38	0.00
WH	14	47.56	FMP1	FMP1053	FMP1383	-	45.11	16.47	38.42	0.00
WH	16	25.96	FMP1	FMP1036	FMP1386	-	42.74	17.18	40.08	0.00
WH	18	34.48	FMP1	FMP1059	FMP1389	-	42.74	17.18	40.08	0.00
WH	20	42.16	FMP1	FMP1062	FMP1392	-	42.84	17.15	40.01	0.00
WH	22	218.02	FMP1	FMP1065	FMP1395	-	42.74	17.18	40.08	0.00
WH	24	230.67	FMP1	FMP1068	FMP198	-	42.91	17.13	39.96	0.00
WH	26	0.58	FMP1	FMP1070	FMP1400	-	42.91	17.13	39.96	0.00
RC	4	3.35	FMP1	FMP1072	FMP1402	-	42.74	17.18	40.08	0.00
RC	6	4.27	FMP1	FMP1075	FMP1405	-	72.73	8.18	19.09	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
RC	8	6.97	FMP1	FMP1078	FMP1408	-	54.22	13.74	32.05	0.00
RC	10	7.69	FMP1	FMP1081	FMP1411	-	48.28	15.52	36.20	0.00
RC	12	19.05	FMP1	FMP1084	FMP1414	-	59.31	12.21	28.48	0.00
RC	14	30.71	FMP1	FMP1086	FMP1417	-	45.08	16.48	38.44	0.00
RC	16	12.67	FMP1	FMP1089	FMP1420	-	42.74	17.18	40.08	0.00
RC	18	8.24	FMP1	FMP1092	FMP1423	-	42.74	17.18	40.08	0.00
RC	20	13.09	FMP1	FMP1095	FMP1426	-	42.84	17.15	40.01	0.00
RC	22	54.84	FMP1	FMP1098	FMP1429	-	42.74	17.18	40.08	0.00
RC	24	23.13	FMP1	FMP1101	FMP1432	-	42.90	17.13	39.97	0.00
OK	2	7 725.44	FMP1	-	FMP1433	-	95.10	0.00	4.90	0.00
OK	4	6 809.16	FMP1	-	FMP1434	-	95.10	0.00	4.90	0.00
OK	6	3 915.44	FMP1	-	FMP1435	-	95.10	0.00	4.90	0.00
OK	8	3 948.43	FMP1	-	FMP1436	-	95.10	0.00	4.90	0.00
AH	2	3 134.60	FMP1	-	FMP1437	-	95.10	0.00	4.90	0.00
AH	4	3 066.39	FMP1	-	FMP1438	-	95.10	0.00	4.90	0.00
AH	6	4 030.90	FMP1	-	FMP1439	-	95.10	0.00	4.90	0.00
AH	8	1 889.58	FMP1	-	FMP1440	-	95.10	0.00	4.90	0.00
AH	10	1 405.13	FMP1	-	FMP1441	-	95.10	0.00	4.90	0.00
AH	12	3 660.57	FMP1	-	FMP1442	-	95.10	0.00	4.90	0.00
BE	2	23 664.03	FMP1	-	FMP1443	-	95.10	0.00	4.90	0.00
BE	4	8 409.49	FMP1	-	FMP1444	-	95.10	0.00	4.90	0.00
BE	6	6 153.25	FMP1	-	FMP1445	-	95.10	0.00	4.90	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
BE	8	4 924.76	FMP1	-	FMP1446	-	95.10	0.00	4.90	0.00
BE	10	1 623.52	FMP1	-	FMP1447	-	95.10	0.00	4.90	0.00
BE	12	34.19	FMP1	-	FMP1448	-	95.10	0.00	4.90	0.00
BI	2	2 175.22	FMP1	-	FMP1449	-	95.10	0.00	4.90	0.00
BI	4	1 273.40	FMP1	-	FMP1450	-	95.10	0.00	4.90	0.00
BI	6	1 299.98	FMP1	-	FMP1451	-	95.10	0.00	4.90	0.00
BI	8	443.56	FMP1	-	FMP1452	-	95.10	0.00	4.90	0.00
BI	10	38.40	FMP1	-	FMP1453	-	95.10	0.00	4.90	0.00
BI	12	227.92	FMP1	-	FMP1454	-	95.10	0.00	4.90	0.00
SY	2	50 497.35	FMP1	-	FMP1455	-	99.33	0.00	0.67	0.00
SY	4	5 276.08	FMP1	-	FMP1456	-	95.10	0.00	4.90	0.00
SY	6	3 973.02	FMP1	-	FMP1457	-	95.10	0.00	4.90	0.00
SY	8	2 429.77	FMP1	-	FMP1458	-	95.10	0.00	4.90	0.00
SY	10	1 789.80	FMP1	-	FMP1459	-	95.10	0.00	4.90	0.00
SY	12	1 541.90	FMP1	-	FMP1460	-	95.10	0.00	4.90	0.00
PO	2	826.71	FMP1	-	FMP1461	-	95.10	0.00	4.90	0.00
PO	4	597.17	FMP1	-	FMP1462	-	95.10	0.00	4.90	0.00
PO	6	92.59	FMP1	-	FMP1463	-	95.10	0.00	4.90	0.00
PO	8	37.53	FMP1	-	FMP1464	-	95.10	0.00	4.90	0.00
PO	10	200.33	FMP1	-	FMP1465	-	95.10	0.00	4.90	0.00
PO	12	67.30	FMP1	-	FMP1466	-	95.10	0.00	4.90	0.00

Northern Ireland, Public forest estate

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	6	2.44	FMP1	FMP1476	FMP1571	-	30.01	48.93	21.06	0.00
NS	8	2.15	FMP1	FMP1477	FMP1572	-	30.01	48.93	21.06	0.00
NS	10	5.92	FMP1	FMP1478	FMP1573	-	30.00	48.92	21.07	0.00
NS	12	92.23	FMP1	FMP1479	FMP1574	-	30.00	48.92	21.08	0.00
NS	14	231.95	FMP1	FMP1480	FMP1575	-	30.00	48.92	21.08	0.00
NS	16	1 327.24	FMP1	FMP1481	FMP1576	-	30.00	48.92	21.08	0.00
NS	18	232.60	FMP1	FMP1482	FMP1577	-	30.00	48.92	21.08	0.00
NS	20	369.16	FMP1	FMP1483	FMP1578	-	30.00	48.92	21.08	0.00
NS	22	4.20	FMP1	FMP1484	FMP1579	-	30.01	48.93	21.07	0.00
SS	6	19.75	FMP1	FMP1485	FMP1580	-	30.00	48.92	21.08	0.00
SS	8	42.98	FMP1	FMP1486	FMP1581	-	30.00	48.92	21.08	0.00
SS	10	272.38	FMP1	FMP1487	FMP1582	-	30.00	48.92	21.08	0.00
SS	12	4 106.11	FMP1	FMP1488	FMP1583	-	30.00	48.92	21.08	0.00
SS	14	6 428.24	FMP1	FMP1489	FMP1584	-	30.00	48.92	21.08	0.00
SS	16	17 321.67	FMP1	FMP1490	FMP1585	-	30.00	48.92	21.08	0.00
SS	18	5 287.85	FMP1	FMP1491	FMP1586	-	30.00	48.92	21.08	0.00
SS	20	2 068.57	FMP1	FMP1492	FMP1587	-	30.00	48.92	21.08	0.00
SS	22	86.42	FMP1	FMP1493	FMP1588	-	30.00	48.92	21.08	0.00
SP	4	12.33	FMP1	FMP1494	FMP1589	-	30.00	48.92	21.08	0.00
SP	6	45.80	FMP1	FMP1495	FMP1590	-	30.00	48.92	21.08	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SP	8	246.44	FMP1	FMP1496	FMP1591	-	30.00	48.92	21.08	0.00
SP	10	156.86	FMP1	FMP1497	FMP1592	-	30.00	48.92	21.08	0.00
SP	12	626.52	FMP1	FMP1498	FMP1593	-	30.00	48.92	21.08	0.00
SP	14	70.38	FMP1	FMP1499	FMP1594	-	30.00	48.92	21.08	0.00
CP	6	0.71	FMP1	FMP1500	FMP1595	-	30.05	49.00	20.95	0.00
CP	8	4.00	FMP1	FMP1501	FMP1596	-	30.01	48.93	21.07	0.00
CP	10	4.88	FMP1	FMP1502	FMP1597	-	30.00	48.92	21.07	0.00
CP	12	100.46	FMP1	FMP1503	FMP1598	-	30.00	48.92	21.08	0.00
CP	14	0.63	FMP1	FMP1504	FMP1599	-	30.10	49.08	20.81	0.00
CP	16	84.06	FMP1	FMP1505	FMP1600	-	30.00	48.92	21.08	0.00
CP	18	1.03	FMP1	FMP1506	FMP1601	-	30.06	49.02	20.92	0.00
LP	4	162.07	FMP1	FMP1507	FMP1602	-	30.00	48.92	21.08	0.00
LP	6	414.80	FMP1	FMP1508	FMP1603	-	30.00	48.92	21.08	0.00
LP	8	2 335.33	FMP1	FMP1509	FMP1604	-	30.00	48.92	21.08	0.00
LP	10	776.88	FMP1	FMP1510	FMP1605	-	30.00	48.92	21.08	0.00
LP	12	335.30	FMP1	FMP1511	FMP1606	-	30.00	48.92	21.08	0.00
LP	14	25.07	FMP1	FMP1512	FMP1607	-	30.00	48.92	21.08	0.00
EL	6	13.03	FMP1	FMP1513	FMP1608	-	30.00	48.92	21.08	0.00
EL	8	102.54	FMP1	FMP1514	FMP1609	-	30.00	48.92	21.08	0.00
EL	10	357.58	FMP1	FMP1515	FMP1610	-	30.00	48.92	21.08	0.00
EL	12	38.40	FMP1	FMP1516	FMP1611	-	30.00	48.92	21.08	0.00
JL	4	2.31	FMP1	FMP1517	FMP1612	-	30.02	48.95	21.04	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
JL	6	27.26	FMP1	FMP1518	FMP1613	-	30.00	48.92	21.08	0.00
JL	8	170.44	FMP1	FMP1519	FMP1614	-	30.00	48.92	21.08	0.00
JL	10	469.41	FMP1	FMP1520	FMP1615	-	30.00	48.92	21.08	0.00
JL	12	970.10	FMP1	FMP1521	FMP1616	-	30.00	48.92	21.08	0.00
JL	14	314.04	FMP1	FMP1522	FMP1617	-	30.00	48.92	21.08	0.00
DF	12	1.22	FMP1	FMP1523	FMP1618	-	30.05	49.00	20.95	0.00
DF	14	1.16	FMP1	FMP1524	FMP1619	-	30.06	49.02	20.92	0.00
DF	16	25.12	FMP1	FMP1525	FMP1620	-	30.00	48.92	21.08	0.00
DF	18	349.51	FMP1	FMP1526	FMP1621	-	30.00	48.92	21.08	0.00
DF	20	31.85	FMP1	FMP1527	FMP1622	-	30.00	48.92	21.08	0.00
DF	22	39.10	FMP1	FMP1528	FMP1623	-	30.00	48.92	21.08	0.00
GF	14	3.08	FMP1	FMP1529	FMP1624	-	30.02	48.94	21.04	0.00
NF	10	0.54	FMP1	FMP1530	FMP1625	-	30.04	48.99	20.97	0.00
NF	12	15.17	FMP1	FMP1531	FMP1626	-	30.00	48.92	21.08	0.00
NF	14	92.51	FMP1	FMP1532	FMP1627	-	30.00	48.92	21.08	0.00
NF	16	229.92	FMP1	FMP1533	FMP1628	-	30.00	48.92	21.08	0.00
NF	18	16.19	FMP1	FMP1534	FMP1629	-	30.00	48.92	21.08	0.00
NF	20	3.28	FMP1	FMP1535	FMP1630	-	30.01	48.93	21.06	0.00
WH	12	54.49	FMP1	FMP1536	FMP1631	-	30.00	48.92	21.08	0.00
WH	14	14.64	FMP1	FMP1537	FMP1632	-	30.00	48.92	21.08	0.00
WH	16	11.24	FMP1	FMP1538	FMP1633	-	30.00	48.92	21.08	0.00
WH	18	0.37	FMP1	FMP1539	FMP1634	-	30.14	49.14	20.73	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
RC	12	41.18	FMP1	FMP1540	FMP1635	-	30.00	48.92	21.08	0.00
RC	14	5.79	FMP1	FMP1541	FMP1636	-	30.00	48.92	21.07	0.00
RC	16	6.92	FMP1	FMP1542	FMP1637	-	30.00	48.92	21.08	0.00
RC	18	0.16	FMP1	FMP1543	FMP1638	-	30.37	49.51	20.12	0.00
OK	4	144.87	FMP1	FMP1544	FMP1639	-	90.00	5.19	4.81	0.00
OK	6	117.88	FMP1	FMP1545	FMP1640	-	90.00	5.19	4.81	0.00
OK	8	407.33	FMP1	FMP1546	FMP1641	-	90.00	5.19	4.81	0.00
AH	4	120.67	FMP1	FMP1547	FMP1642	-	90.00	5.19	4.81	0.00
AH	6	42.30	FMP1	FMP1548	FMP1643	-	90.00	5.19	4.81	0.00
AH	8	48.20	FMP1	FMP1549	FMP1644	-	90.00	5.19	4.81	0.00
AH	10	1.45	FMP1	FMP1550	FMP1645	-	90.00	5.19	4.81	0.00
AH	12	0.86	FMP1	FMP1551	FMP1646	-	90.00	5.19	4.81	0.00
BE	4	7.85	FMP1	FMP1552	FMP1647	-	90.00	5.19	4.81	0.00
BE	6	15.23	FMP1	FMP1553	FMP1648	-	90.00	5.19	4.81	0.00
BE	8	81.48	FMP1	FMP1554	FMP1649	-	90.00	5.19	4.81	0.00
BE	10	35.04	FMP1	FMP1555	FMP1650	-	90.00	5.19	4.81	0.00
BI	4	128.96	FMP1	FMP1556	FMP1651	-	90.00	5.19	4.81	0.00
BI	6	32.62	FMP1	FMP1557	FMP1652	-	90.00	5.19	4.81	0.00
BI	8	41.07	FMP1	FMP1558	FMP1653	-	90.00	5.19	4.81	0.00
BI	10	0.31	FMP1	FMP1559	FMP1654	-	90.00	5.19	4.81	0.00
SY	4	99.35	FMP1	FMP1560	FMP1655	-	90.00	5.19	4.81	0.00
SY	6	49.25	FMP1	FMP1561	FMP1656	-	90.00	5.19	4.81	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
SY	8	301.47	FMP1	FMP1562	FMP1657	-	90.00	5.19	4.81	0.00
SY	10	5.07	FMP1	FMP1563	FMP1658	-	90.00	5.19	4.81	0.00
SY	12	4.89	FMP1	FMP1564	FMP1659	-	90.00	5.19	4.81	0.00
PO	4	1.08	FMP1	FMP1565	FMP1660	-	90.00	5.19	4.81	0.00
PO	6	1.99	FMP1	FMP1566	FMP1661	-	90.00	5.19	4.81	0.00
PO	8	25.87	FMP1	FMP1567	FMP1662	-	90.00	5.19	4.81	0.00
PO	10	3.28	FMP1	FMP1568	FMP1663	-	90.00	5.19	4.81	0.00
PO	14	0.47	FMP1	FMP1569	FMP1664	-	90.00	5.19	4.81	0.00
NO	10	2.60	FMP1	FMP1570	FMP1665	-	90.00	5.19	4.81	0.00

Northern Ireland, Private sector

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	6	0.46	FMP1	FMP1476	FMP1571	-	30.01	48.93	21.06	0.00
NS	8	0.40	FMP1	FMP1477	FMP1572	-	30.01	48.93	21.06	0.00
NS	10	1.10	FMP1	FMP1478	FMP1573	-	30.00	48.92	21.07	0.00
NS	12	17.20	FMP1	FMP1479	FMP1574	-	30.00	48.92	21.08	0.00
NS	14	43.26	FMP1	FMP1480	FMP1575	-	30.00	48.92	21.08	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
NS	16	247.52	FMP1	FMP1481	FMP1576	-	30.00	48.92	21.08	0.00
NS	18	43.38	FMP1	FMP1482	FMP1577	-	30.00	48.92	21.08	0.00
NS	20	68.84	FMP1	FMP1483	FMP1578	-	30.00	48.92	21.08	0.00
NS	22	0.78	FMP1	FMP1484	FMP1579	-	30.01	48.93	21.07	0.00
SS	6	3.68	FMP1	FMP1485	FMP1580	-	30.00	48.92	21.08	0.00
SS	8	8.01	FMP1	FMP1486	FMP1581	-	30.00	48.92	21.08	0.00
SS	10	50.80	FMP1	FMP1487	FMP1582	-	30.00	48.92	21.08	0.00
SS	12	765.75	FMP1	FMP1488	FMP1583	-	30.00	48.92	21.08	0.00
SS	14	1 198.80	FMP1	FMP1489	FMP1584	-	30.00	48.92	21.08	0.00
SS	16	3 230.31	FMP1	FMP1490	FMP1585	-	30.00	48.92	21.08	0.00
SS	18	986.13	FMP1	FMP1491	FMP1586	-	30.00	48.92	21.08	0.00
SS	20	385.77	FMP1	FMP1492	FMP1587	-	30.00	48.92	21.08	0.00
SS	22	16.12	FMP1	FMP1493	FMP1588	-	30.00	48.92	21.08	0.00
SP	4	2.30	FMP1	FMP1494	FMP1589	-	30.00	48.92	21.08	0.00
SP	6	8.54	FMP1	FMP1495	FMP1590	-	30.00	48.92	21.08	0.00
SP	8	45.96	FMP1	FMP1496	FMP1591	-	30.00	48.92	21.08	0.00
SP	10	29.25	FMP1	FMP1497	FMP1592	-	30.00	48.92	21.08	0.00
SP	12	116.84	FMP1	FMP1498	FMP1593	-	30.00	48.92	21.08	0.00
SP	14	13.13	FMP1	FMP1499	FMP1594	-	30.00	48.92	21.08	0.00
CP	6	0.13	FMP1	FMP1500	FMP1595	-	30.05	49.00	20.95	0.00
CP	8	0.75	FMP1	FMP1501	FMP1596	-	30.01	48.93	21.07	0.00
CP	10	0.91	FMP1	FMP1502	FMP1597	-	30.00	48.92	21.07	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
CP	12	18.73	FMP1	FMP1503	FMP1598	-	30.00	48.92	21.08	0.00
CP	14	0.12	FMP1	FMP1504	FMP1599	-	30.10	49.08	20.81	0.00
CP	16	15.68	FMP1	FMP1505	FMP1600	-	30.00	48.92	21.08	0.00
CP	18	0.19	FMP1	FMP1506	FMP1601	-	30.06	49.02	20.92	0.00
LP	4	30.22	FMP1	FMP1507	FMP1602	-	30.00	48.92	21.08	0.00
LP	6	77.36	FMP1	FMP1508	FMP1603	-	30.00	48.92	21.08	0.00
LP	8	435.51	FMP1	FMP1509	FMP1604	-	30.00	48.92	21.08	0.00
LP	10	144.88	FMP1	FMP1510	FMP1605	-	30.00	48.92	21.08	0.00
LP	12	62.53	FMP1	FMP1511	FMP1606	-	30.00	48.92	21.08	0.00
LP	14	4.68	FMP1	FMP1512	FMP1607	-	30.00	48.92	21.08	0.00
EL	6	2.43	FMP1	FMP1513	FMP1608	-	30.00	48.92	21.08	0.00
EL	8	19.12	FMP1	FMP1514	FMP1609	-	30.00	48.92	21.08	0.00
EL	10	66.68	FMP1	FMP1515	FMP1610	-	30.00	48.92	21.08	0.00
EL	12	7.16	FMP1	FMP1516	FMP1611	-	30.00	48.92	21.08	0.00
JL	4	0.43	FMP1	FMP1517	FMP1612	-	30.02	48.95	21.04	0.00
JL	6	5.08	FMP1	FMP1518	FMP1613	-	30.00	48.92	21.08	0.00
JL	8	31.79	FMP1	FMP1519	FMP1614	-	30.00	48.92	21.08	0.00
JL	10	87.54	FMP1	FMP1520	FMP1615	-	30.00	48.92	21.08	0.00
JL	12	180.91	FMP1	FMP1521	FMP1616	-	30.00	48.92	21.08	0.00
JL	14	58.57	FMP1	FMP1522	FMP1617	-	30.00	48.92	21.08	0.00
DF	12	0.23	FMP1	FMP1523	FMP1618	-	30.05	49.00	20.95	0.00
DF	14	0.22	FMP1	FMP1524	FMP1619	-	30.06	49.02	20.92	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
DF	16	4.68	FMP1	FMP1525	FMP1620	-	30.00	48.92	21.08	0.00
DF	18	65.18	FMP1	FMP1526	FMP1621	-	30.00	48.92	21.08	0.00
DF	20	5.94	FMP1	FMP1527	FMP1622	-	30.00	48.92	21.08	0.00
DF	22	7.29	FMP1	FMP1528	FMP1623	-	30.00	48.92	21.08	0.00
GF	14	0.57	FMP1	FMP1529	FMP1624	-	30.02	48.94	21.04	0.00
NF	10	0.10	FMP1	FMP1530	FMP1625	-	30.04	48.99	20.97	0.00
NF	12	2.83	FMP1	FMP1531	FMP1626	-	30.00	48.92	21.08	0.00
NF	14	17.25	FMP1	FMP1532	FMP1627	-	30.00	48.92	21.08	0.00
NF	16	42.88	FMP1	FMP1533	FMP1628	-	30.00	48.92	21.08	0.00
NF	18	3.02	FMP1	FMP1534	FMP1629	-	30.00	48.92	21.08	0.00
NF	20	0.61	FMP1	FMP1535	FMP1630	-	30.01	48.93	21.06	0.00
WH	12	10.16	FMP1	FMP1536	FMP1631	-	30.00	48.92	21.08	0.00
WH	14	2.73	FMP1	FMP1537	FMP1632	-	30.00	48.92	21.08	0.00
WH	16	2.10	FMP1	FMP1538	FMP1633	-	30.00	48.92	21.08	0.00
WH	18	0.07	FMP1	FMP1539	FMP1634	-	30.14	49.14	20.73	0.00
RC	12	7.68	FMP1	FMP1540	FMP1635	-	30.00	48.92	21.08	0.00
RC	14	1.08	FMP1	FMP1541	FMP1636	-	30.00	48.92	21.07	0.00
RC	16	1.29	FMP1	FMP1542	FMP1637	-	30.00	48.92	21.08	0.00
RC	18	0.03	FMP1	FMP1543	FMP1638	-	30.37	49.51	20.12	0.00
OK	4	1 013.19	FMP1	FMP1544	FMP1639	-	90.00	5.19	4.81	0.00
OK	6	824.40	FMP1	FMP1545	FMP1640	-	90.00	5.19	4.81	0.00
OK	8	2 848.76	FMP1	FMP1546	FMP1641	-	90.00	5.19	4.81	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
AH	4	843.94	FMP1	FMP1547	FMP1642	-	90.00	5.19	4.81	0.00
AH	6	295.86	FMP1	FMP1548	FMP1643	-	90.00	5.19	4.81	0.00
AH	8	337.13	FMP1	FMP1549	FMP1644	-	90.00	5.19	4.81	0.00
AH	10	10.11	FMP1	FMP1550	FMP1645	-	90.00	5.19	4.81	0.00
AH	12	5.98	FMP1	FMP1551	FMP1646	-	90.00	5.19	4.81	0.00
BE	4	54.94	FMP1	FMP1552	FMP1647	-	90.00	5.19	4.81	0.00
BE	6	106.48	FMP1	FMP1553	FMP1648	-	90.00	5.19	4.81	0.00
BE	8	569.87	FMP1	FMP1554	FMP1649	-	90.00	5.19	4.81	0.00
BE	10	245.05	FMP1	FMP1555	FMP1650	-	90.00	5.19	4.81	0.00
BI	4	901.90	FMP1	FMP1556	FMP1651	-	90.00	5.19	4.81	0.00
BI	6	228.13	FMP1	FMP1557	FMP1652	-	90.00	5.19	4.81	0.00
BI	8	287.25	FMP1	FMP1558	FMP1653	-	90.00	5.19	4.81	0.00
BI	10	2.17	FMP1	FMP1559	FMP1654	-	90.00	5.19	4.81	0.00
SY	4	694.81	FMP1	FMP1560	FMP1655	-	90.00	5.19	4.81	0.00
SY	6	344.47	FMP1	FMP1561	FMP1656	-	90.00	5.19	4.81	0.00
SY	8	2 108.38	FMP1	FMP1562	FMP1657	-	90.00	5.19	4.81	0.00
SY	10	35.42	FMP1	FMP1563	FMP1658	-	90.00	5.19	4.81	0.00
SY	12	34.21	FMP1	FMP1564	FMP1659	-	90.00	5.19	4.81	0.00
PO	4	7.55	FMP1	FMP1565	FMP1660	-	90.00	5.19	4.81	0.00
PO	6	13.95	FMP1	FMP1566	FMP1661	-	90.00	5.19	4.81	0.00
PO	8	180.96	FMP1	FMP1567	FMP1662	-	90.00	5.19	4.81	0.00
PO	10	22.93	FMP1	FMP1568	FMP1663	-	90.00	5.19	4.81	0.00

CARBINE tree species code	Yield class	Total area of stratum (ha)	Allocated FMPs by index number				Percentage allocation of FMPs to stratum area			
			No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover	No harvesting	No thinning, with clearcutting	Thinning, with clearcutting	Continuous cover
PO	14	3.28	FMP1	FMP1569	FMP1664	-	90.00	5.19	4.81	0.00
NO	10	18.19	FMP1	FMP1570	FMP1665	-	90.00	5.19	4.81	0.00

Annex 7 Content of the explanatory note on the final UK National Forest Accounting Plan

As required under Article 8 of the Land Use, Land Use Change and Forestry Regulation (841/2018), the UK submitted a draft National Forest Accounting Plan (NFAP) in December 2018. This was reviewed by the EU Land Use Land Use Change and Forestry Expert Group in April 2019 and a Compilation of the Synthesis Reports providing the Expert Group's conclusions for each member state was published in May 2019. The European Commission then published recommendations to member states on their NFAPs in Staff Working Paper 213 (SWD) in June 2019.

The purpose of this annex is to describe how the conclusions of the Expert Group and the recommendations of the European Commission were addressed in the final UK National Forestry Accounting Plan provided to the European Commission in December 2019. Information is also provided on where to find relevant changes or additional information in the final NFAP, in response to each issue raised.

Technical recommendations in the European Commission SWD

The recommendations of the European Commission in the SWD have been reviewed and responses are given in Tables A7.1 and A7.2, with details of the action taken and where to find relevant information in the final NFAP.

Conclusions of the LULUCF Expert Group

The conclusions of the LULUCF Expert Group have also been reviewed. The points raised by the Expert Group have been covered in the responses to the SWD in Tables 1 and 2. For transparency, Table A7.3 is provided to help identify where to find the relevant information.

Other issues

In the final UK NFAP, the Forest Reference Level has been calculated by assuming that the transition to managed forest land occurs 20 years after the date of conversion from non-forest land use to ensure consistency with emissions and removals reported for forest land remaining forest land in the existing greenhouse gas inventories. In the draft NFAP a transition period of 30 years was used. Following article 6(2) of the LULUCF Regulation, the UK intends to categorise cropland, grassland, wetland, settlements or other land converted to forest land as making the transition to managed forest land from 30 years after the date of conversion. It will be realised through a future technical correction to the Forest Reference Level. Information relevant to this point has been provided in Section 4.1 and Table 4.2 (pages 60 and 61).

References

UK National Forestry Accounting Plan (2018) https://www.gov.uk/government/publications/uk-national-forestry-accounting-plan-2021-to-2025

LULUCF Expert Group (2019) Compilation of Synthesis Reports, Technical Assessment of National Forest Accounting Plans as requested by the LULUCF Regulation 7 May 2019, https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=30965

European Commission (2019) Commission Staff Working Document, Assessment of the National Forestry Accounting Plans, European Commission, Brussels, Belgium, 18 June 2019. https://ec.europa.eu/energy/sites/ener/files/documents/staff_working_documet_en_212.pdf

Regulation (EU) 2018/841 of the European Parliament and of the Council on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.156.01.0001.01.ENG

Table A7.1 Responses to recommendations in the SWD from the European Commission and action taken (Annex IV criteria, Section A)

Response	Annex IV criteria (Section A principles)	SWD: recommendation from the Commission	Action taken	Where to find relevant content in revised NFAP
1	(a) the reference level shall be consistent with the goal of achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, including enhancing the potential removals by ageing forest stocks that may otherwise show progressively declining sinks	Demonstrate how the goal of achieving a balance between anthropogenic emissions and removals will be achieved in the second half of the century. Provide qualitative and quantitative information until at least 2050 consistent with the long-term strategy required under Regulation (EU) 2018/1999.	Additional information has been provided, showing the development of CO_2 removals on Managed Forest Land from 2000 to 2050 under a "business as usual" scenario, noting that Managed Forest Land is consistently a net sink over this period.	Section 4.2, sub-section entitled, "Consistency of FRL projection with long-term emissions goal", including new Figure 4.3 (pages 66 to 68).
2	(e) a constant ratio between solid and energy use of forest biomass as documented in the period from 2000 to 2009 shall be assumed	Provide a ratio between solid (HWP) and energy use of forest biomass as documented in the period from 2000 to 2009 used for the estimation of the forest reference level and demonstrate it remains constant throughout the projection.	It is confirmed that a constant ratio between solid (HWP) and energy use of forest biomass as documented in the period from 2000 to 2009 was used for the estimation of the forest reference level. Relevant additional supporting information and discussion is now provided in the NFAP	Section 3.3, sub-section entitled "Allocation of harvested wood to product types (energy and solid wood)", including new Tables 3.12 and 3.13 (pages 49 to 52).
3	(g) the reference level shall be consistent with the national projections of anthropogenic greenhouse gas emissions by sources and removals by sinks reported under Regulation (EU) No 525/2013	Demonstrate the consistency with the national projections of anthropogenic greenhouse gas emissions reported under Regulation (EU) No 525/2013. Provide explanations for possible differences between national projections and the proposed FRL.	The methodology for constructing the FRL has been revised and improved to ensure better consistency between the FRL projection and national projections of anthropogenic greenhouse gas emissions reported under Regulation (EU) No 525/2013. Remaining differences between the projections are	Section 4.2, sub-section entitled, "Consistency of FRL projection with Regulation (EU) 525/2013", including new Figure 4.2 (pages 65 and 66).

Response	Annex IV criteria (Section A principles)	SWD: recommendation from the Commission	Action taken	Where to find relevant content in revised NFAP
			due to improvements made to modelling methodologies applied in producing GHG Inventories, as explained in an updated and expanded discussion.	
4	(h) the reference level shall be consistent with greenhouse gas inventories and relevant historical data and shall be based on transparent, complete, consistent, comparable and accurate information. In particular, the model used to construct the reference level shall be able to reproduce historical data from the National Greenhouse Gas Inventory	Estimate the FRL based on the area under forest management as indicated in Annex IV, Part B (e) i. Use the conversion period for Land converted to forest land (Afforested Land) consistent with the latest national GHG inventory.	The calculation of the FRL projection has been updated to ensure that forest areas referred to are consistent with the National GHG Inventory and that a transition period of 20 years has been used for the conversion of "Afforested land" to Managed Forest Land. Relevant discussion, tables and figures have been updated.	Section 3.1, Box 3.2 and associated discussion (pages 20 and 21). Section 3.2.1, including Table 3.2 (total areas of forest strata, pages 21 to 23). Section 3.2.2, sub-section entitled, "Projected forest area", including revised (corrected) Table 3.10 and corrected and expanded Table 3.11 (pages 38 to 40).
5	(h) the reference level shall be consistent with greenhouse gas inventories and relevant historical data and shall be based on transparent, complete, consistent, comparable and accurate information. In particular, the model used to construct the reference level shall be able to reproduce historical data from the National Greenhouse Gas Inventory	Explain the difference of approximately 2 Mt CO_2 between the national GHG inventory and FRL for the reference period (Figure 4.1 in the NFAP).	Figure 4.1, which was not consistent with Table 4.1 has been corrected.	Section 4.2, includes a revised Figure 4.1 (pages 63 to 65).

Response	Annex IV criteria (Section A principles)	SWD: recommendation from the Commission	Action taken	Where to find relevant content in revised NFAP
6	(h) the reference level shall be consistent with greenhouse gas inventories and relevant historical data and shall be based on transparent, complete, consistent, comparable and accurate information. In particular, the model used to construct the reference level shall be able to reproduce historical data from the National Greenhouse Gas Inventory	Demonstrate possible impacts of the different age-class structures used in the FRL and national GHG inventory in the reference period and on the trends during the years 2010-2016.	The calculation of the FRL projection has been updated to ensure that age class distributions of forest areas in the FRL projection are consistent with the National GHG Inventory up to the end of the Reference Period (2009).	Section 3.1, Box 3.2 and associated discussion (pages 20 and 21). Section 3.2.2, sub-section entitled, “Projected forest area”, including revised Figures 3.3 and 3.4 (pages 38 to 40).

Table A7.2 Responses to recommendations in the SWD from the European Commission and action taken (Annex IV criteria, Section B)

Response	Annex IV criteria (Section B elements)	SWD: recommendation from the Commission	Action taken	Where to find relevant content in revised NFAP
7	b) identification of the carbon pools and greenhouse gases which have been included in the forest reference level, reasons for omitting a carbon pool from the forest reference level determination, and demonstration of the consistency between the carbon pools included in the forest reference level	Provide missing information on non-CO_2 emissions from drained organic soils for the FRL, which are reported in GHG inventory.	Relevant information has been added to the NFAP giving details of estimated non-CO_2 emissions from drained organic and mineral soils, along with discussion of calculation methods.	Section 3.3, sub-section entitled, "Modelling of non-CO_2 emissions occurring on Managed Forest Land", including Table 3.16 (pages 59 to 60). Section 4.1, including amended Table 4.1 (page 61 to 62). Section 4.3, including amended Table 4.3 (page 68 to 69).
8	c) a description of approaches, methods and models, including quantitative information, used in the determination of the forest reference level, consistent with the most recently submitted national inventory report, and a description of documentary information on sustainable forest management practices and intensity as well as of adopted national policies;	c) Provide more detailed information on the calculation of the background level for natural disturbances, consistent with Regulation (EU) 2018/841.	More detailed information describing the calculation of the background level for natural disturbances has been included.	Section 3.3, sub-section entitled, "Natural Disturbances", including Tables 3.14 and 3.15 and Figure 3.9 (pages 53 to 58).
9	e) a description of how each of the following elements were considered in the determination of the forest reference level: i) the area under forest management	Provide the area under forest management consistent with Table 4.A ("Forest land remaining Forest land") from the latest national GHG inventory using the year preceding the	The calculation of the FRL projection has been updated to ensure that forest areas referred to are consistent with the 2019 National GHG Inventory submission	Section 3.1, Box 3.2 and associated discussion (pages 20 and 21). Section 3.2.1, including Table 3.2 (total areas of forest strata, pages 21 to 23). Section 3.2.2, sub-section entitled, "Projected forest area", including revised (corrected)

		starting point of the projection. Given the use of the dynamic area approach, provide a detailed disaggregated calculation of the managed forest land area at annual time steps for the entire time series since, at least, year 2000.	(1990-2017) and that a transition period of 20 years has been used for the conversion of "Afforested land" to Managed Forest Land. Relevant discussion, tables and figures have been updated and elaborated	Table 3.10 and in particular corrected and expanded Table 3.11 (pages 38 to 40).
10	e) a description of how each of the following elements were considered in the determination of the forest reference level: iii) forest characteristics, including dynamic age-related forest characteristics, increments, rotation length and other information on forest management activities under 'business as usual'	Provide additional information on increments.	New discussion has been included clarifying the link between "yield class" as defined in UK forestry and potential forest increment, and the relevance of this to the definition of forest strata. Information has been included about UK forest increment relative to harvesting over the period 2000 to 2050.	Section 3.2.1, sub-section entitled, "Stratification with respect to potential stand increment" and discussion in this and ensuing sub-sections (pages 24 to 29). Section 3.2.2, sub-section entitled, "Comparison of forest increment and harvest levels", including Figure 3.7 (pages 44 and 45).
11	e) a description of how each of the following elements were considered in the determination of the forest reference level: iv) historical and future harvesting rates disaggregated between energy and non-energy uses.	Provide additional information on disaggregation of energy and non-energy uses for historical and future harvesting rates.		Section 3.3, sub-section entitled, "Allocation of harvested wood to product types (energy and solid wood)", including Tables 3.12 and 3.13 (pages 49 to 52).

Table A7.3 Mapping of the conclusions from the LULUCF Expert Group Synthesis Report and action taken, as described above in tables 1 and 2

Annex IV criteria	Transparency (T) / Accuracy (A)	LULUCF expert group suggestions	Response above
A.(c)	T	The LULUCFEG suggests that the UK provides additional information on possible impacts of the different age-class structures used in the FRL and GHG inventory in the reference period, which may have an impact on the trends (e.g. extend Figure 4.1. including the period 2010-2016).	6
A.(e)	T	The LULUCFEG suggests that the UK provides the ratio between solid and energy use of forest biomass which was used in the FRL estimate.	2
A.(h)	T	The LULUCFEG suggests that the UK provides additional information on possible impacts of the different age-class structures used in the FRL and GHG inventory in the reference period, which may have an impact on the trends (e.g. extend Figure 4.1. including the period 2010-2016). The LULUCFEG suggests that the UK explains how the consistency between the GHG inventory and the FRL will be ensured, in case different trends occur in the period 2010-2016.	6
B. a)	T	- different age-class structures are used in the FRL compared to the GHG inventory in the reference period, which may have an impact on the trend;	6
B. b)	A	- missing information on non-CO2 emissions from drained organic soils for the FRL, which are reported in GHG inventory.	7
B. c)	A	- calculation of natural disturbance background level, which is not in line with Annex VI of the Regulation;	8
B. e) i)	A	- small inconsistencies between CRF table 4.A and the NFAP;	4
B. e) ii)	T	- the consistency between the published GHG inventory, 2018 submission, and the FRL cannot be fully assessed.	9
B. e) iv)	T	- the NFAP does not present the ratio for energy and non-energy use of wood that was used in the FRL estimate or harvest allocations to each harvested wood product category for every year in the period 2000-2009;	2

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