coillte

Mid West BAU 4
Strategic Plans

2016 - 2020

Foreword

I have great pleasure in publishing Coillte's Mid West Business Area Unit (BAU) strategic plan.The purpose of a BAU strategic plan is to set out plans for the forest and non-forest business that will take place in the BAU during the plan period. In practicing sustainable forest management Coillte's aim is to develop its forests in a way that is environmentally sustainable, socially sustainable and economically sustainable. Coillte has applied the principles of environmental impact assessment and risk management to the potential interactions between forest activities and standard receptors in compiling these plans.

The topics covered in the BAU strategic plan include:

Commercial Planning:

- planting
- timber harvesting
- timber sales
- forest roads and access
- licenses, lettings, recreation and non-forestry land uses
- land acquisition and sales
- non-forest business – such as renewable energy

Planning for public benefits and public use:

- Community facilities and benefits
- Recreational and tourism infrastructure and partnerships
- Access
- Environmental enhancement measures such as biodiversity and nature conservation

Planning for sustainable use of resources:

- sustainable forest management
- long term retention of trees
- low impact silvicultural [1]systems
- water quality
- forest design
- use of chemicals

Paul Ruane

Mid West BAU Manager

[1] Growing, cultivating and felling trees

Statement of Compliance with Principles of Sustainable Forestry Management

The Coillte estate is a rich, high quality environmental resource, with the potential to interact with people, landscape, water and biodiversity. As such, Coillte recognises and seeks to minimise any potential adverse impacts of our business on the environment through responsible environmental management. We are committed to the prevention of pollution.

As part of our commitment to the stewardship of our forests, we seek and welcome comments and suggestions from stakeholders with regard to environmental issues. Through this partnership approach we also encourage co-operation from our stakeholders.

As a prerequisite to all our operations, Coillte is committed to the protection of the environment. The scope of this policy covers the operations and activities associated with our forestry, property sales and energy businesses.

Our objectives are to:

1. Adopt an organization wide system for managing environmental issues. The Director of Stewardship and Public Goods has responsibility for managing the implementation of this policy and our environmental management system (EMS).

2. Manage our business in full compliance with all applicable laws, directives and regulations, as well as voluntary external accredited schemes to which we subscribe e.g. the Forest Stewardship Council®[2] (FSC®) and the Programme for the Endorsement of Forest Certification (PEFC™).

3. Prevent negative environmental impacts through a system of operational controls that include communication, written instructions and appropriate training

4. Continually improving environmental performance by setting and reviewing objectives & targets related to significant environmental risks and putting into effect programmes to reduce those risks.

5. Communicate, as appropriate, our Environmental Policy to Coillte staff and stakeholders, contractors and their employees and the communities within which we operate.

Paul Ruane

Mid West BAU Manager

[2] FSC licence code FSC- C005714

Table of Contents

1. Coillte and the BAU Strategic Plans

1.1 Coillte

Coillte is Ireland's leading natural resources companies with operations in forestry, timber panel production, renewable energy and land management. The core purpose of the company is to enrich lives locally, nationally and globally through innovative and sustainable management of natural resources.

History

Coillte was established under the Forestry Act of 1988 as a private limited company registered under and subject to the Companies Acts 1963-86. All of the shares in the company are held by the Minister for Agriculture, Food and the Marine and the Minister for Public Expenditure and Reform on behalf of the Irish State. The Board of Directors is appointed by the Minister for Agriculture. Coillte commenced trading in 1989 when it acquired ownership of the Irish State's forests.

Coillte Today

The company is an export oriented, forestry and forest products business, with interests in renewable energy. The company has three operating divisions - Coillte Forest, Coillte Panel Products and Coillte Enterprise.

The company employs approx. 1,000 people across Ireland and the UK and supports the employment of many more people in jobs that add value to our forest products.

The Forest Service (Department of Agriculture, Food and the Marine) is the forest authority in Ireland. The Forest Service is responsible for ensuring the development of forestry within Ireland in a manner and to a scale that maximises its contribution to national socio-economic well-being on a sustainable basis that is compatible with the protection of the environment.

Outdoor Recreation

As Ireland's leading provider of outdoor recreation we have more than 150 recreation sites for you to enjoy. For more information on how to get out and enjoy the outdoors see www.coillteoutdoors.ie

1.2 Renewable Energy

Coillte is committed to the development of sustainable energy in Ireland, as we move towards a sustainable future with enhanced energy security. As the largest provider of high quality sites to the renewable energy sector, Coillte is making a significant contribution to Ireland's 2020 target of achieving 40% of its electricity consumption from renewable sources. Coillte is fully aligned with government and EU policy in terms of the role we plan in relation to renewable energy development in Ireland.

Ireland's dependence on imported fossil fuel has left energy consumers vulnerable in terms of energy security, energy price volatility and exposure to carbon taxes. Reducing Irelands reliance on fossil fuel imports, reducing our greenhouse gas emissions and improving domestic fuel security are key pillars for developing a green economy.

Coillte has already made a significant contribution towards the development of renewable energy in Ireland over the last 20 years. Over the course of the BAU Strategic plan period and beyond, Coillte has a very important role to play, both as a developer and a land owner, in helping Ireland reach its 2020 renewable energy targets and in helping reduce Ireland's carbon emissions. Coillte proposes to do this through facilitating the development of multiple renewable energy technologies.

In terms of developing our renewable energy resources we are committed to:

- Open and transparent public participation and consultation with stakeholders and local communities.
- Best in class Environmental Impact Assessment and Appropriate Assessment that enhances and preserves local ecology and the habitats therein.
- Complying with all relevant environmental legislation, health and safety legislation, regulations and other requirements as they arise.
- Minimising the impact of wind farm development on the surrounding landscape and surrounding forestry in so far as that is possible through careful siting and design.
- Considering the impact on recreational users, and also the opportunity there may be when developing a wind farm to develop enhanced recreational facilities.
- Mitigating against the risk of pollution and conducting our business in an environmentally friendly way.

1.2.1 Public Participation and Consultation

Coillte supports proper planning and sustainable development and fully recognises that the development of renewable energy projects must afford appropriate protection to the social, environmental and economic pillars of sustainability. We are committed to ensuring that people are aware of our plans and policies and that we present all of our information in a clear and understandable manner.

Coillte's policy is to consult widely with national and local stakeholders in all stages of the wind farm development from pre-planning, development and operational phases. In addition, all projects developed by Coillte provide a Community Benefit mechanism as part of the project.

While not a statutory requirement of the Irish planning system, Coillte insists that, in all instances where wind turbines are proposed on the Coillte estate, the relevant host community is consulted about that proposal prior to any Planning Application being lodged with the relevant Planning Authority. As part of Coillte's commitment to the responsible stewardship of its forests, it seeks and welcomes comments and suggestions from stakeholders about how it manages its forests in the most responsible way for the benefit of society and future generations.

1.2.2 Wind Energy

Coillte's lands possess some of the best onshore wind regimes in Ireland due, inter alia, to its altitude, aspect and location. It also often particularly suitable for wind farm development due to its remoteness, accessibility, distance from dwellings and visibility relative to areas with high scenic amenity.

Coillte is aware that wind energy is a proven technology and according to the Irish Wind Energy Association (IWEA), it provided 24% of our Irish electricity demand in 2015. As outlined in the White Paper 'Ireland's Transition to a Low Carbon Energy Future 2015-2030', Coillte too recognises that *"onshore wind will continue to make a significant contribution"*[3] to meeting Ireland's energy needs.

[3] http://www.dcenr.gov.ie/energy/SiteCollectionDocuments/Energy-Initiatives/Energy%20White%20Paper%20-%20Dec%202015.pdf

Due to the fact that there are many myths concerning wind energy developments, Coillte has developed a Frequently Asked Questions document on this subject matter. Should you require further information regarding Coillte's involvement in the wind energy industry, please consult our Frequently Asked Questions document as it appears on the Wind Energy Section of the Coillte web site[4] and do not hesitate to contact us at windenergy@coillte.ie.

1.2.3 Biomass

The key guiding principle for Coillte's vision is that Ireland's biomass is a limited and valuable indigenous resource and should be harnessed in a way that maximises value throughout the supply chain. Coillte does so by providing competitive, long term and secure biomass fuel supply contracts for its woodchip clients and also assists in the evaluation of both the technical and commercial viability of projects for large scale industrial energy users.

Coillte is now playing a key leadership role in delivering sustainable biomass energy solutions to the Irish biomass industry through its new supply model. We operate a number of regional biomass fuel supply hubs throughout the country. Coillte provide full chain of custody from forest to boiler ("stump to steam") and all wood chip is produced strictly in accordance with quality specifications set out in I.S. CEN/TS 14961: 2005, with a significant emphasis on optimisation of wood flow to minimise haulage distances for all transportation required.

Coillte has developed a new partnership model aimed at unlocking the potential of the bio-energy sector here in Ireland and is currently rolling this model out nationally through its new biomass processing hubs. Each Coillte processing hub now supports a range of supply chain jobs and underpins significant annual energy and carbon savings for its clients. Should you require any further details regarding Coillte's involvement in the biomass industry, please do not hesitate to contact us at biomass@coillte.ie.

1.2.4 Other Renewable Technologies

In addition to playing a leadership role in wind energy and biomass production, Coillte is currently engaged in a process to assess the potential opportunities for solar energy on the Coillte estate. Coillte is also assessing recent technology developments in the area of energy storage. Furthermore, the potential for hydro energy may also be considered on the estate along with any other emerging technologies. Work is underway to understand these technologies and their potential application for Coillte, either being integrated into our existing energy projects or developed as standalone projects in the future.

1.3 Coillte's Resource Management Approach

During 2011 and 2012 a major project was undertaken within Coillte Forest to review fundamentally our approach to managing our forest resource. The underlying objective of this work is to use optimisation techniques to ensure we are maximising the return from the land resource in a balanced and sustainable manner. In 2013 this project moved into implementation phase and, after a successful pilot programme, has now been adopted as the primary planning tool for Coillte forest.

The schedule itself is built through running a management model. It is important that the model reflects

- the costs and benefits of all possible actions,
- the crop and site types and the circumstances under which each action is allowed,
- and the relevant management objectives and constraints operating at a strategic and local level

[4] http://www.coillte.ie/coillteenterprise/renewable_energy/wind_energy/wind_energy_faq/

As the model was developed and refined each BAU was consulted on the model as it applies to their area. The outputs of the management model may span multiple years or decades and in this format, will be used as a strategic resource management tool.

A major benefit of the approach to Coillte is the speed with which a new national activity schedule is generated which reflects, for example, the impact of storm or a significant shift in markets. In extreme cases a stand may have its scheduled fell year shifted as frequently as every quarter, as the model is re-run to incorporate emerging information on demand or crop parameters.

This is why forest management principles, objectives and constraints are reflected into the model and form the basis the BAU plan.

Once these principles are agreed, each model run during the lifetime of the BAU Strategic Plan will comply with the principles, as will the ensuing harvest schedule. The harvest activity levels are available to view on our Webmap , these draft activity levels are based on an initial run. Where changes occur due to public feedback or from other influences e.g. environmental or policy, which cause an increase of over 20% in activity within a property these areas will be published on Coillte's website as having changed significantly since initial publication.

1.4 Benefits of Coillte

In addition to benefits to the economy in terms of sustainable forest products and energy production, Coillte's forests provide a range of social, environmental, recreational, health and tourism benefits to the State and its people.

Coillte provides a wide range of 'public goods'. Extensive recreation facilities are provided in Coillte's forests including Ireland's best mountain biking facilities. Coillte operates an open access policy for walkers and pedestrian users, and people can apply for licenses and permits to engage in a wide range of other activities. Coillte's recreation policies are set out in the company's website at www.coillte.ie/aboutcoillte/recreation/recreation_policy/ and a special website www.coillteoutdoors.ie provides information about our recreational opportunities.

Over fifteen per cent of our estate is actively managed for nature conservation. Habitat restoration projects such as the EU funded LIFE Priority Woodland Project, and recreation partnerships like the Dublin Mountains Partnership are showcase projects that demonstrate best practice natural resource management.

In addition to being important resources for construction and for energy production our forests are also important natural systems for capturing and storing carbon from the atmosphere and they play a role in moderating flooding at times of high rainfall.

We talk to people locally about how to maximise these benefits through our BAU social and environmental panels which are drawn from key stakeholders in each BAU.

1.5 Meeting external challenges and constraints

Coillte and all of its forests and lands are subject to a number of key external factors. Typically these arise as policies or legislation relating to forestry which drive change and can have a major influence on our future. Understanding and anticipating these factors is vital in order to manage change proactively rather than responding to it reactively and Coillte work proactively with our key statutory and non-statutory regulators. The following table outlines some of the principal challenges and commitments. The BAU strategic plans will each contribute to meeting these challenges and constraints.

Challenges and Commitments	Response
National Forest Strategy The government forestry strategy published in a document titled "Growing for the Future"	In response to the National Forest Strategy: Coillte will set and meet targets for the national timber supply. It will engage in a greater diversification of species and increase broadleaf content according to agreed targets. Coillte will seek to increase the recreational value of some of its forests.
National Biodiversity Plan Ireland is a signatory to the 1992 Convention on Biological Diversity and is committed to biodiversity protection and enhancement measures in the National Biodiversity Plan.	Coillte is making a meaningful contribution to the National Biodiversity Action Plan through the designation of 15% of its forest estate overall for nature conservation and biodiversity management.
EC Habitats Directive and EC Birds Directive **(92/43/EEC)** as transposed into Irish law under the S.I. No. 477 of 2011 EUROPEAN COMMUNITIES (BIRDS AND NATURAL HABITATS) REGULATIONS 2011. The EU Directive on the conservation of natural habitats and of wild fauna and flora provides for the protection of habitats and their species, and where necessary their restoration to favourable conservation status.	Coillte is committed to achieving or maintaining favourable condition of all of the Special Areas of Conservation (SACs). Special Protection Areas (SPAs) and Natural Heritage Areas (NHA) on its lands. All forest operations which potentially could impact on such sites are assessed under the criteria outlined as required by the Regulations.

Challenges and Commitments	Response
Water Framework Directive (2000/60/EC) The EU Water Framework Directive establishes a framework for the protection of rivers, lakes, coastal and ground waters by requiring States to achieve good ecological status for all waters, ensuring that status does not deteriorate in any waters. The summary timetable and work programme for the production of the second cycle of River Basin Management Plans (RBMPs) 2015-2021 was published in July 2015. In addition a Significant Water Management Issues (SWMI) report will be published and will be open to public consultation until December 2015. This will feed into the draft River Basin Management Plans for 2015-2021 to be published in December 2016. The RBMPs will be open to further public consultation with a view to publish an updated and final version in December 2017.	National Surface and Drinking Water Regulations have been enacted since 2007 to give legal status to the criteria and standards to be used for classifying surface waters in accordance with the ecological objectives approach of the Water Framework Directive. The classification of waters is a key step in the river basin management planning process and is central to the setting of objectives and the development of programmes of measures. Waters classified as 'high' or 'good' must not be allowed deteriorate. Waters classified as less than good must be restored to at least good status within a prescribed timeframe. The environmental targets or goals and the programmes of measures (POMs) to be included in river basin management plans must therefore reflect these requirements. Coillte has been proactive with the regulatory agencies, such as the Forest Service, Inland Fisheries Ireland, Local Authorities and NPWS, in deriving POMs to be implemented by the forest sector in avoiding and/or minimising the potential impact of forest activities on water quality. A central tenet of the POMs is adherence to the Forest Service Code of Best Forest Practice and Guidelines, including all relevant regulations and requirements, and the Forest Standards for Ireland (National and FSC/PEFC) with compliance assessed by way of independent audits by the Forest Service and the FSC and PEFC.
Sustainable Forest Management (SFM) SFM is the forestry sector's response to sustainable development. Balancing the economic, environmental and social elements is now the accepted way by which forest management is conducted. Forest certification ensures best forest practice is implemented and provides stakeholders with an opportunity to contribute to the management of forests.	Coillte is fully committed to a policy of sustainable management of all of its forests and forest lands. Coillte applied for FSC certification of its forests in 2000 and were awarded an FSC certificate in 2001. Coillte applied for PEFC certification of its forests in 2013 and were awarded a PEFC certificate in 2014. These external forest management certification schemes endorse Coillte's policy of sustainable forest management, balancing the social, economic and environmental aspects of forest management.

Coillte also respond to external factors that have a significant impact on its forests. One example is the disease Phytophthora Ramorum also known as sudden oak death which has been detected in a number of BAUs. Another is Chalara fraxina which is a serious fungal disease of ash trees. This has caused widespread damage to ash populations in continental Europe and was recently detected in a number of privately owned forests.

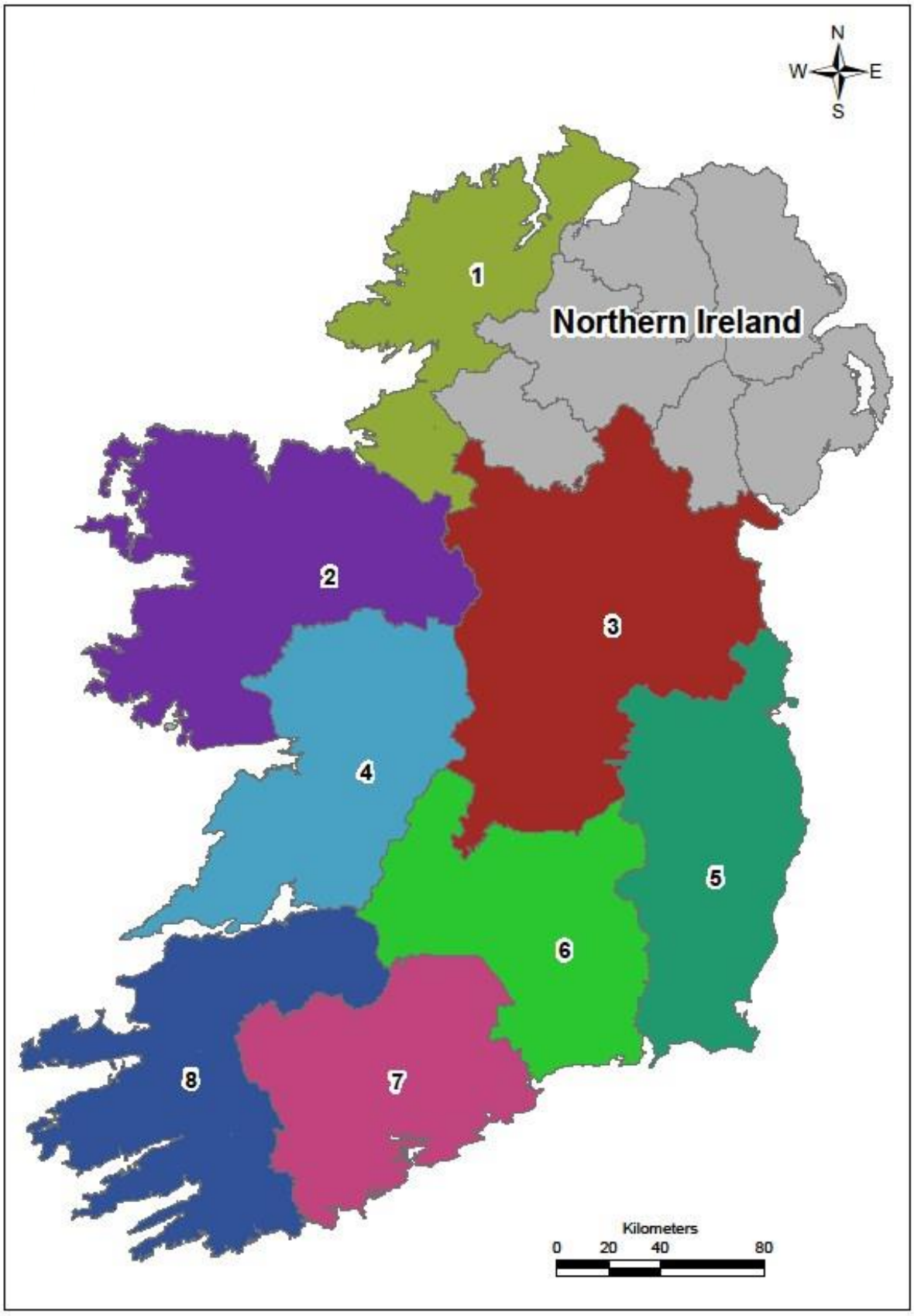
Coillte will liaise closely with Forest Service with regard to this significant potential threat to our Ash woodlands and will respond immediately to any mitigation measures proposed.

A number of changes in modern society also impact Coillte's management and planning for its forest estate and these include:

- A greater awareness of environmental issues amongst the public leading to a demand for higher standards of environmental protection. The challenge for Coillte here is the long term nature of forest planning and the need to realise the commercial potential of mature timber without excessive cost.
- Coillte has responded to an increased appreciation of landscape and of the place of forests in the landscape by new policies and practices in relation to forest design and by new approaches to felling decisions, in particular looking at alternatives to extensive clear felling where possible.
- A higher demand for access, recreational and tourism facilities in forests and in the types of recreation demanded – Coillte practices an open forest policy where all of its forests are open for walking, and has increased its provision of special trails including improved provision of waymarked ways and looped walks, mountain bike trails and nature trails. Coillte frequently enters into partnerships with local communities, local development and tourism groups, county councils, and with development bodies such as Fáilte Ireland, Waterways Ireland and the Fisheries Boards to achieve such provision.
- Significant increases in illegal disposal of waste, often within Coillte forests, has led to requirements to remove waste and litter , this has led to partnership based approaches to reducing dumping and littering.

1.6 Coillte BAUs

Coillte's estate is divided into 8 Business Area Units (BAUs)



Coillte has developed plans for each of these BAUs, called BAU strategic plans which describe Coillte's forests and other assets in the area, and set out a vision for their management. The last planning cycle was for 2011-2015. This consultation document refers to the incoming planning cycle 2016-2020.

Coillte also convenes a social and environmental panel for each of its BAUs. Plans and programmes are discussed with these groups to help Coillte to understand social, recreational and environmental issues, opportunities and concerns in the BAU.

1.9 Summary on the Various Levels of Coillte Forest Management Planning

The **BAU strategic plan** sets out the economic, social and environmental strategies and priorities for the long and medium term in the BAU and gives a clear direction for the management of the forests at local level for the next 5 years. The plans are developed in consultation with a wide range of stakeholders both internal and external to the company. Input from external stakeholders (individuals, communities, NGOs and statutory bodies) are sought during the consultation process, feedback is considered and where feasible, is incorporated into the plans. The Forest Management Unit (FMU) planning requirement, for Forest Certification, is achieved through the BAU strategic plan process.

SF (Site File) is built when site-level planning is initiated for activity within each Harvest Unit and describes how the plan is going to be implemented for the operation managers, workers and contractors. Social and environmental impacts, including consultation, are assessed through the environmental impact appraisal process and mitigation measures are written in each site management plan.

All levels of planning feed into the annual **BAU Operating Business Plan and Work Plan**. These plans focus on the tasks/targets to be achieved during the year and outline the necessary resources (financial and human) required.

The BAU is the Forest Management Unit and is built from smaller spatial entities the largest of these being the Forest Unit. Key activity levels within each Forest Unit are further broken down in Appendix V. Further to the appendix, a Webmap is available to view areas with proposed Clearfells and areas which have the potential to be thinned in the review period. Click here to access the Webmap.

2. Mid West BAU

2.1 The Mid West BAU

Mid West BAU is one of 8 BAU's in Coillte Teoranta the Irish State Forestry Board. It covers the areas of Co. Clare, North, South and East Galway, and part of Roscommon. The BAU consists of 54,332 ha of mostly good productive forest land and includes Farm Partnerships.

Forest properties are widespread throughout the BAU, with greatest forest area approximately 20,000 ha's located in the Slieve Aughty mountains and Slieve Bernagh.

Climate is dominated by the Atlantic Ocean and the gulf stream which ensures we do not tend to have extremes in weather. With south-westerly winds from the Atlantic dominating, giving wind speeds of on average 7m/sec, rainfall averaging 2800mm per annum and an average temperature of 9 degrees Celsius.

Raised bogs have been developing for thousands of years and apart from botanical diversity, they hold a record of past climates and act as carbon sinks which help to reduce the impact of climate change. Due to their preservative properties, they can also hold intact archaeological remains which gives a glimpse into the past.

The largest biodiversity project to be under taken in the last five years in this BAU, was the Raised Bog Restoration Project. This project was jointly funded by DG- Environment and Coillte. Project number was LIFE 04 NAT/IE/00121 and focused on the restoration of 14 raised bog sites within the EU Natura 2000 network, with a total national project area of 571 Hectares. The raised bogs sites were selected on the basis of being within Special Areas of Conservation (SACs) as well as their potential for restoration**.** Ireland still retains some of the best examples of raised bog sites in Europe and many fine examples occur within the BAU.

In a continuance of the policy of raised bog restoration, over the next three years it is planned to restore a further 636 Hectares on a national basis with 169 Hectares located in this BAU.

In addition to the raised bog project, over the last five years 551 Hectares of priority woodland habitat on Coillte property has been restored nationally, consisting of four woodland types. There are two site in this BAU, located at Attyslany and Castletaylor , where 102 Hectares were restored. This project was also jointly funded by DG-Environment and Coillte.

Soil types of our forests comprise mainly of peat (69%), gleys (18%), podsols (7%), brown earth (6%). There are five main lakes, Lough Derg, Lough Graney, Doolough, Lough Cutra and Lough Rea and eleven main river catchments, i.e. Shannon, Graney, Derrywee, Boleyneendorrish, Woodford, Fergus, Doonbeg, Hind, Suck, Dunkellin and Clare

2.2 Forests and Forest Products in the Mid West BAU

A map of Coillte's Forests in the Mid West BAU can be viewed in Appendix VI.

During the 2011-2015 period, the BAU produced approximately 1.3 million cubic metres of wood (2015 figures estimated). This wood was primarily sold to ECC Sawmill, Cornamona, Murray's Sawmill Ballygar, Medite, Clonmel and SmartPly in Waterford.

Coillte's production supports 2 major sawmills in Galway, plus a number of smaller sawmills. It's also a major source of wood fibre for Coillte's boardmills in Clonmel and Waterford.

Forest Products

Private timber

Coillte is the largest producer and consumer of pulpwood in Ireland. Coillte's strategy is to supplement its own supply through the purchase of private timber, through various channels. For further information please check the Coillte website at www.coillte.ie

Farm Partnerships

This scheme is where Coillte and a farmer form a joint venture by agreement whereby Coillte plants and manages the plantation for the life of the crop; ownership of the land remains with the farmer. Currently we have 130 farm partnerships within the BAU. This number is not expected to increase in the lifetime of this plan, as we are no longer engaged in this area. We will continue to support our existing partners.

2.3 Community, Recreation and Tourism Facilities in the Mid West BAU

Coillte has a long association with the communities, clubs and individuals who use the extensive forest network. The development of recreational facilities and activities in line with Coillte's Recreation policy are some of the many ways Coillte can contribute towards the "public good" value of the estate. This can be achieved through partnerships, permits and ongoing relationships that respects the sustainable use of our forests for future generations. The BAU recreational activities contribute to the social, environmental and economic life within the BAU boundaries.

Many Coillte forests in this BAU are expansive and offer multiple activities such as walking, hiking, multi access and long distance trails cycling on new bike trails, fishing, picnicking, watching wildlife, canoeing, field archaeology or simple enjoyment of the outdoors. There is considerable infrastructure in place and maintained by Coillte across the BAU to support these activities.

The BAU contains many areas for recreational activity of which are on the Coillte website. The main recreational areas that are highly used are Cratloe Wood, Gragans Wood, Cahermurphy, Ballycuggaran, Portumna Park, Monivea, Mountbellew Demesne, Kilcornan, Correen, Kilrush, Aghrane and Mote Park.

Portumna Forest Park is situated on the northern shore of Lough Derg. It strands 436 Hectares of Coillte property and provides an ideal setting for forest and lake side walks with observation points and a viewing tower. Within the site are the remains of a Cistercian abbey dating to 15th Century. Over the past three years with 15 Km of surfaced trails suitable for family cycling and walking, have been upgraded with the help of funding from Fáilte Ireland. The multi access walkway which was developed in the park some years ago, was also linked to the town of Portumna by upgrading one of the existing roads within the park, with funding from Galway Co. Council and the local community. The facilities also include parking for 60 cars and toilets. It is planned to maintain the facilities and ensure that forest management objectives and the new trail routes are managed in harmony with each other.

The overall policy is to adequately maintain the existing sites on an annual basis with a strong emphasis on the "*leave no trace*" practice for our visitors

There are a number of Way-marked ways passing through Coillte property and these include 'The East Clare Way', 'The Mid Clare Way' and 'The Suck Valley Way'.

The BAU has also entered in to a number of partnership arrangements that have provided recreational facilities for local communities and restored old buildings. One example of this over the last five years was the completion of additional trails and furniture at Mote Park through the Neighbourwood Scheme which was funded by the Forest Service

Coillte actively engages with local communities and other partners to resource the management and maintenance of this valuable recreational offering.

2.4 Cultural and Archaeological Heritage in the Mid West BAU

Coillte is aware of some 131 archaeological sites and sites of cultural significance in its landholdings in the BAU. These monuments include megalithic tombs of different kinds, Ringforts Cashels and other enclosures and crannogs. A summary of archaeological sites in the BAU is provided in Appendix I.

With support and advice from the NPWS, Coillte has developed a Code of Practice in order to protect this archaeological and cultural heritage.

Many land acquisitions contain farmsteads and features representing rural life in the 19th and early 20th century. These are identified and protected within forest management practices and identified when proposals for sales are being developed. They are evaluated in terms of their social and historical value and a plan implemented for their preservation.

The BAU will continue to support sites of cultural heritage and will identify, protect and record all new items of heritage which are discovered on its lands.

2.5 Biodiversity and High Conservation Value Forests (HCVF) Within the Mid West BAU

Ecological surveys were carried out between 2003 and 2006 to identify areas of maximum biodiversity value and draw up management plans for those areas. The findings of each of the completed surveys, were incorporated into our forest management plans. We consulted on our individual forest management plans a number of years ago.

The ecological survey identified and mapped Coillte lands in the BAU where it was considered most appropriate to manage for conservation value. This area is distributed in over 189 locations. Management plans for these sites have been agreed and adopted with the ecologists and their recommendations will be implemented in Coillte's ongoing management of the areas. Additional biodiversity areas were subsequently identified as biodiversity areas by forest managers, e.g. riparian zones. As a result, the total area included in biodiversity areas in the BAU is 9,194ha (17% of Coillte land in the BAU).

Each year, the sites of highest biodiversity value are targeted for monitoring and management activities. These sites are identified on a rolling programme each year.

Coillte's certification process requires it to identify areas of high conservation value forests (HCVF) across its forest estate. High conservation value forests (HCVF) are areas, not necessarily under forest, that are nationally important for nature conservation and have recognised conservation values associated with them. Two high conservation values have been identified for Coillte forest lands, namely:

1. Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values;
2. forest areas that are in or contain rare, threatened or endangered ecosystems.

HCVF areas in the BAU largely overlap with areas designated for nature conservation, either nationally under the Wildlife Act as Natural Heritage Areas (NHA) or under European Law in the form of the Habitats Directive as Special Areas of Conservation (SAC) or Special Protected Areas for birds (SPA). Some old woodland sites in the BAU have the potential to be classified as HCVF and these sites are identified through Coillte's old woodland assessment procedure.

HCVF areas may be quite large, such as Special Protection Areas in the west of Ireland for hen harrier conservation, or they may be quite small such as an old house within a forest which hosts an important roosting site for bats. They may also occur on non-forested lands such as the atlantic blanket bogs in the west and the raised bogs of the midlands.

All management operations in HCVF areas are designed to maintain and/or enhance the designated conservation value and operations are further managed using the precautionary principle.

The table below shows statutory designated areas and HCVF in the Mid West BAU. Areas shown are in hectares (Ha)

Designation	Area (ha on Coillte lands)
HCVF	28,627
NHA* – Natural Heritage Area	1,024
SAC* - Special Area of Conservation	1,566
SPA* – Special Protection Area	26,585
Nature Reserve	106
pNHA	924

(*Overlap occurs between categories)

Coillte recognises that woodland sites have the potential to be high conservation value forests. These are Old Woodland Sites (OWS) with the best semi-natural characteristics, or that support nationally important populations of rare, threatened or endangered species. Coillte policy is to access and survey all OWS in advance of clear felling or high impact operations. Any site identified as having a 'high score' is brought to the attention of the company's ecologists and their advice acted upon.

The Mid West BAU achievements in relation to nature conservation include the following:

- 234 ha of Peatland has been restored over 11 sites
- 81 ha of Native Woodland site of has been restored over 6 sites.
- 102 ha of Priority Woodland has been restored over 2 sites.
- 2985 ha of OWS is being managed to retain it semi-natural characteristics
- Habitats regulation assessments take place in relation to all works on designated sites.

2.6 Species and Habitats in the Mid West BAU

A range of non-forest habitats of special nature conservation value occur on Coillte land in this BAU, primarily these are blanket bog, raised bog, fens, limestone pavement and turloughs.

Notable mammals in the area include the Lesser Horseshoe Bat, Pine Marten, Badger and Red Squirrel

A further 169 hectares of raised bog in the BAU has been identified as having potential for restoration to ecologically valuable raised bog habitat. The restoration work involves removing conifers plantation and drain blocking. It is being carried out as part of a EU Life Nature project. This project is co-funded by Coillte, N.P.W.S and E.U.

The most significant and extensive habitats of nature conservation value occurring in the BAU are listed in Appendix II and are Annex 1 habitats in the EU Habitats Directive.

2.7 Invasive Species

Within the BAU there are a number of species that are not native to Ireland and which are capable of having a negative effect on native biodiversity. Most notable from a Coillte point of view are Rhododendron which is a significant issue on our properties.

In line with international best practice, when controlling invasive species (including Rhododendron), the BAUs resources are focused on priority sites based on:

1. The site's uniqueness (e.g. whether or not they are Priority habitats, as per EU Habitats directive),
2. Whether the presence of Rhododendron is likely to facilitate the spread of the exotic disease Phytophthora ramorum,
3. The site's intrinsic ecological/biodiversity value (e.g. are they High Conservation Value Forests or Old Woodland Sites)
4. The social value of the forest (e.g. the extent to which the forest is used as a recreational facility/proximity to urban population).

2.8 Water Quality and Protection in the Mid West BAU

Water quality is one of the key indicators of the health of the environment and as such must feature significantly in the BAU operational plans.

Careful planning to avoid or mitigate future potential impacts from operations must be a key consideration in the planning of future activities within the BAU.

The main Water Management Units (WMU) in the BAU are the Kinvarra WMU , the Lough Derg WMU, the Fergus WMU, the West Coast Clare WMU, and the South Clare Shannon Estuary WMU. The identification of these Management Units within the BAU will be an effective tool in liaising with the relevant Statutory Authorities on water management under the water framework directive. The BAU also contains 1 river catchment the Cloon river, designated for the protection of the Fresh Water Pearl Mussel (Margartifera margaritifera).

Coillte actively participates in the implementation of the Water Framework Directive and ensures the forest sector plays its part in protecting the water bodies. Prior to the commencement of all high impact forest operations, and environmental impact assessment is conducted whereby all important aquatic zones (as defined by the Forest Service Guidelines) and permanent relevant watercourses draining the proposed operations area are noted and mitigation measures listed to ensure protection of the waters. It is at this stage, the requirement for the establishment of water protection areas (buffer zones), if not already in-situ, will be stipulated for all watercourses. Reference will be made on how the trees are to be removed and prohibition of machinery movement in the buffer zones during forest operations.

If the proposed 'high impact' forest operations site is judged to be water sensitive, a water monitoring programme will be put in place. This will comprise of daily visual assessment and recording of surface waters draining the site during operations and the immediate adoption of appropriate contingency measures where discolouration of the water is observed. On the most sensitive sites, this monitoring process is backed up with short-term water sampling. Typically, this sampling would be of short to mid duration, lasting a few weeks to several months, depending on the duration of the forest operation. Sampling consists of taking samples from the main tributaries draining the forest site, before, during and after operations are completed.

The full implementation of both the EU Water Framework and Habitats Directives, has significant implications for forest management in the BAU. It highlights the potential pressures of forests on water quality and increased risks from erosion and sedimentation.

The need to move away from monoculture blocks of forests towards restructured forest stands has been recognised in the BAU. When restocking after clear felling, an extensive network of new buffer zones will be established to protect adjoining watercourses. Drainage and cultivation practices on these sites are also designed to minimise their impact on local water. Coillte will continue to work closely with the relevant statutory bodies and assist where possible with their water and fishery rehabilitation plans.

2.9 Forest Management Issues

Coillte's Mid West BAU faces a number of issues in relation to managing its forests effectively for production and for their recreational and social benefits. Over the past 5 years these have included: security, litter, waste dumping, illegal use by motorized vehicles, inappropriate recreation, anti-social behaviour & fire damage.

Coillte has introduced a set of byelaws to assist in controlling these activities.

2.9.1 Deer Management

Wild deer are present on 60% of the Coillte estate. Through browsing and bark-stripping trees, deer can have a considerable negative impact on tree species selection as well as the quality, yield and survival of forest crops. Deer can also impact land use objectives on neighbouring lands.

It is Coillte's policy to manage deer in accordance with accepted principles of Sustainable Deer Management (SDM) whereby, the conservation, control and use of the species, will be balanced in order to achieve an integrated and collaborative solution to maintaining viable deer populations across the estate at levels which are in harmony with their environment. To this end Coillte maintain Deer Management Plans (DMP) for all areas where deer are present. Coillte's summary deer management policy can be viewed at www.coillteoutdoors.ie

Deer are wild animals free to roam across large areas of multiple land ownerships, they are a protected species, and one which attracts considerable attention and differing views as to how they should be "managed". A key aspect of successful deer management is therefore establishing a collaborative approach between all key stakeholders within the deer's range at landscape level. A considerable element of this process is the acceptance of shared responsibility by all landowners in the area of their role and to ensure the effective management of the deer utilising their lands.

Coillte have demonstrated considerable commitment and leadership management in recent years in developing collaborative deer management and the establishment of training standards for deer hunters. At National level the Company was instrumental in the establishment the Hunter Competence Assessment programme and the Irish Deer Management Forum. At Regional, and local level Coillte are active participants in a number of deer management partnerships and groups.

It is estimated that wild deer are present in over 65 % of Coillte's estate in this BAU. A breakdown of deer species abundance in this BAU is shown in the table below. Damaging impacts to Coillte's crops are generally localised, predominately in areas with high deer numbers. Damage is mainly confined to the browsing of broadleaved trees and some more palatable conifers such as Scots pine, Douglas fir, larch and Norway spruce . Deer populations are principally controlled through the issue of hunting licences.

Deer species abundance in **BAU 4**

Density Classification	Deer Species Present (hectares)		
	Red	Fallow	Sika
Low	406	11,359	0
Moderate	0	19,693	0
High	0	3,522	0
Total area	**406**	**34,574**	**0**

3. The Mid West BAU Strategic Plan

We are very fortunate in the BAU in the richness and pristine quality of much of our environment, our wild natural resources and the presence of habitats and landscapes that are cherished both at home and internationally. We aim to maintain and enhance these assets while balancing the requirement to realise for the state and its people the enormous investment that has been made in Irish forestry over the years.

3.1 Vision

The long-term vision for the BAU is of forestry management at an intensity that is appropriate to the environmental sensitivity and productivity of its land resource. By adopting policies that ensure our efforts are concentrated on timber production in some areas and on habitat restoration in other areas we will maximise the benefits to the environment, local communities and the timber processing industry.

This vision includes:

- forestry will be a vibrant industry in the area, integrated into the local economy, providing employment opportunities in the forest, the timber industry and in many down stream activities;
- broadleaves will account for 13.9% of the gross area of the BAU;
- natural and semi-natural habitats are protected and enhanced through appropriate management;
- there is continuity of forest habitat for rare and threatened species;
- the public will gain health and well-being benefits from enjoying a range of recreation activities in the forests.
- forest recreational sites will be a part of the tourism infrastructure and will be an important contributor to the tourism economy;
- there will be a shared vision between the BAU and local communities on expectations from the forests and how they are managed.

3.2 The Forest Resource and the Timber Business

Coillte realises its timber sales through planting and felling on its own estates and through planting partnerships with others.

The Coillte Estate

It is Coillte's policy to achieve the maximum volume potential of the estate consistent with sustainable forest management principles (see Section 4).

Key Objective 1

In the Mid West BAU, Coillte aims to produce approximately 1,976,000 cubic metres of wood from its forests between 2016 and 2020.

1,482,000m^3 of this will be provided through felling and 494,000m^3 will be achieved through

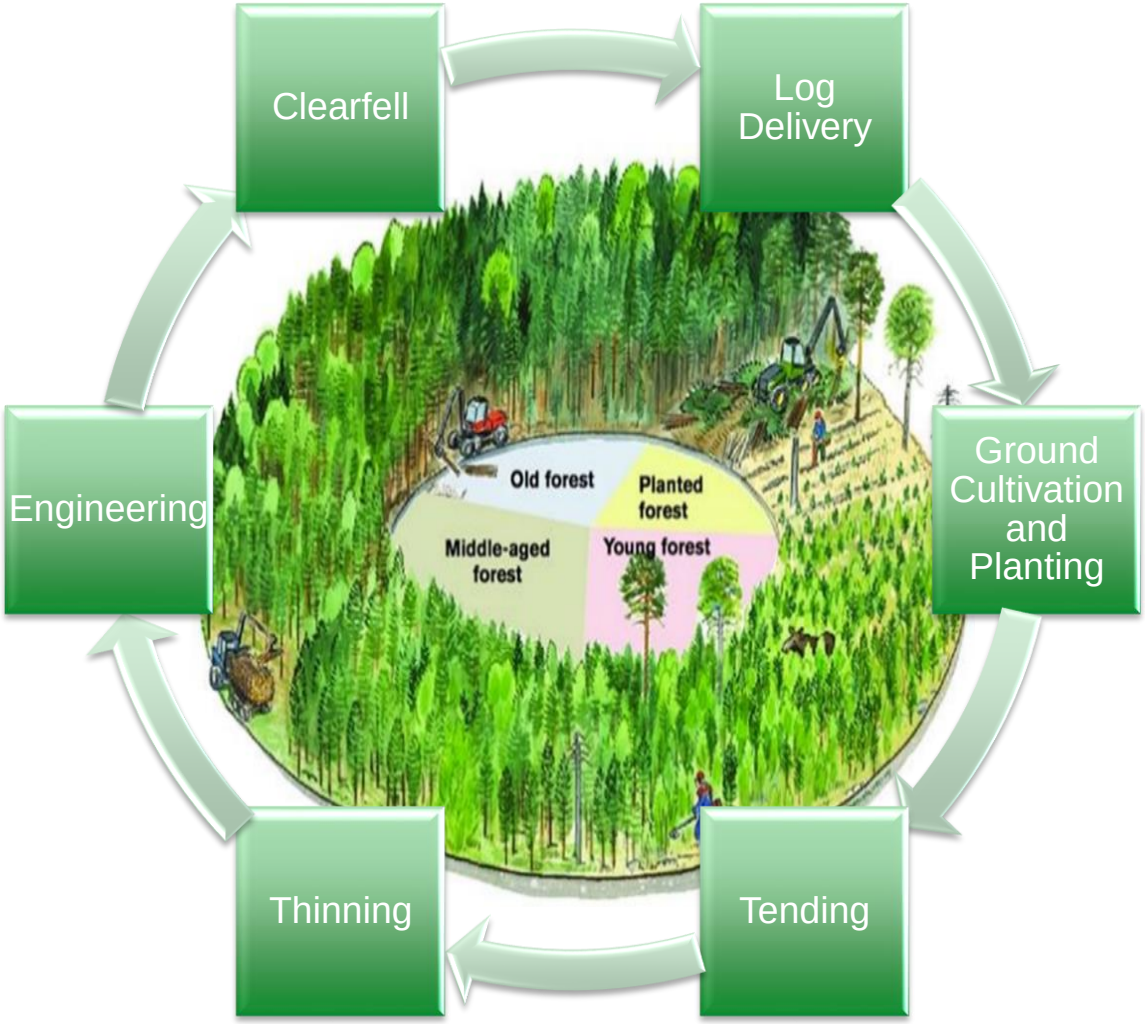


Figure 1: The Forest Cycle

Timber supply comes from two main sources, clear felling and thinning.

- **Clearfell** is the most common silvicultural system used in Ireland and the UK due to the prevailing forest culture and has predominated over the past century characterized by the establishment of new forest plantations. The extent of clear felling annually is strictly controlled both externally and internally. Externally, the extent of annual clear felling is subject to statutory control by the Forest Service. Internally, control is exercised by the Coillte policy of 'Sustained Yield'. Sustained yield allows our forests to grow and be harvested at a level that is capable of providing a continuous supply of timber for current and future generations. Coillte has introduced a number of Low Impact Silvicultural Systems (LISS) which will apply to some forests in the area. The clear fell system will, however, remain the dominant silvicultural system in the BAU during the plan period. This involves the removal of all marketable trees from an area at the end of the rotation (usually at between 35 to 45 years of age). Due to the poor fertility and the exposed and unstable nature of our sites there is very little scope for alternative systems that remove mature trees more gradually. At clearfell time considerable effort is now put into adjusting felling coupe size and shape to satisfy both environmental and landscape design purposes. Low Impact Silvicultural Systems (LISS) such as 'Small Coupe Felling', 'Change to Broadleaf' and 'Continuous Cover Forestry' are in use in the BAU and it is intended to expand this level where possible during the plan period.

- **Thinning** is also a natural part of forest management and it involves staged removals of a proportion of trees in a forest over a rotation, and it is a necessary part of standard forestry practice worldwide. Thinning improves the quality of the forest by regulating the space and light provided to trees as they grow. In line with international best practices, Coillte aims to thin where possible all forests to maximise the quality and volume returns from the estate. Thinning will only occur where the practice can be sustained, namely in forests with no stability threat from high winds. High winds and exposure in the BAU is a limiting factor to thinning and consequently thinning is effectively concentrated in certain areas of the BAU where it is not as exposed and deemed to be more stable. Historically, because of stability concerns, there is limited standard thinning prescriptions used in this BAU with most thinning events having 2 or 3 interventions. The experience in the BAU to date is that thinning interventions of 3 or more often result in wind blow and are therefore not recommended in certain areas of the BAU.

All felling is controlled by the Forest Service which issues felling licences as appropriate under the 1946 Forestry Act. Coillte will ensure that all harvesting operations meet Forest Service license requirements and are planned at site level, with full assessment of environmental impact, landscape sensitivity, local consultation requirements and relevant site issues.

All felling proposals for either clear felling or thinning will be consulted on in advance with local authorities, Inland Fisheries Ireland and also the National Parks and Wildlife Service; their recommendations are then fully considered. BAU outlines a list, in local newspapers annually, of the clearfell and regeneration plans for the following year.

New planting and replanting

Under the terms of felling licences, Coillte will fulfil its obligations to replant clearfell areas.

Key Objective 2

In the Mid West BAU, Coillte aims to replant approximately 3,409 hectare of forest by 2020.

Forest Roads

Forest Roads are an essential element of forest infrastructure. They provide access for management, harvesting and transport of timber and enhance the recreational potential of forests. A number of kilometres of new road are constructed each year in the Mid West BAU and there is also the need for maintenance of the existing road network. Our policy is to give each local authority a schedule of areas for harvesting and associated timber volumes, for the next five years and agree designated timber haulage routes with them. Our engineering staff has indicated the optimum layout of our road network and we are gradually extending the roads to this point. This work is ongoing and will not be complete within the timeframe of this plan.

The priority for the road infrastructure over the duration of this plan is to;

- construct 56km of new roads in our forests
- maintain the existing road infrastructure
- extend spur roads where necessary to access timber stands due for harvesting in the period of the plan
- develop road access to areas that are currently inaccessible

Key Objective 3

In the Mid West BAU, Coillte aims to construct 66 km of new Forest Roads by 2020.

Factors affecting timber supply

A number of considerations affect the volume of timber that Coillte can achieve from its forests:

- **Accessing timber crops** can be challenging with both internal (right-of-way issues, poor internal access) and external (right-of-way issues, the state and nature of county council roads/bridges etc.). To address the access issue a list of all difficult areas is currently compiled and these will be prioritised on the basis of timber supply and a plan put in place to address these issues by assigning relevant personnel. The BAU will consider the use of partnerships to help resolve/contribute to access difficulties on a site by site basis. In addition, a review of the road infrastructure will occur and all new haulage routes will be identified in conjunction with Clare/Galway Co Councils with a view to improving access.

- **Nutrient deficiencies** The Mid West BAU has over of 500 ha of Sitka spruce which is 'in check' the majority of which was planted in the 1980's and 1990's. In many cases these crops were planted in anticipation that site nutrition would be supplemented with fertiliser applied from a helicopter. In the Mid West BAU a review will be completed to check their suitability for fertilisation. This encompasses environmental sensitivities and an economic cost/benefit analysis along with the necessary foliage analysis. If the silvicultural argument is strong in terms of fertilisation we will proceed to apply for a licence to aerial fertilise those areas in and conduct consultation with all relevant bodies with regard to safeguarding watercourses and comply fully with Forest Service guidelines on aerial fertilisation. Coillte will continue to evaluate other ground based alternatives on an ongoing basis. In addition, to reduce if not eliminate future fertilisation programmes, a more cautious species selection is being applied with the less nutrient demanding lodgepole pine conifer species now being the primary species in the BAU.

- **Meeting increasingly challenging environmental standards** requires Coillte to review its practices and assess the risks on a regular basis. Coillte has achieved sustainable forest management certification and is committed to ensure that there is continual professional development and refresher training for all staff, personnel and contractors to ensure a high environmental awareness and work standard is maintained. This will incorporate a wide range of training days and courses on all environmental issues and continued co-operation with all statutory stakeholders.

- The provision of a harvesting **infrastructure** that can respond to the environmental challenges will require ongoing training and monitoring of contractors and engaging in all relevant updates on developments in harvesting technology and machine capabilities. This is seen as a central requirement for all contractors wishing to operate in the Mid West BAU.

- Sometimes the **popularity of forests for recreation** affects our capacity to fell timber.

Farm Partnerships

In relation to existing farm partnerships Coillte will:

- develop 10 year plans for farm partnerships that have been in existence for 10 years
- hold annual management meetings with farm partners
- thin farm partnership sites regularly and on time
- carry out an inventory on farm partnership sites
- Construct roads for timber extraction where needed.

Key Objective 4

In the Mid West BAU, Coillte aims to manages its 130 Farm Partnerships

Overall production targets in the Mid West BAU 2016- 2020

Coillte's proposed operating targets for the Mid West BAU for the period of the plan- 2016-2020 are summarised in the table below.

Mid West BAU main Coillte production targets 2016 – 2020[5]

Annual Totals					
Year	**2016**	**2017**	**2018**	**2019**	**2020**
Planting (ha)					
Regeneration planting (r/f) (Replanting after felling)	780	703	725	563	638
Harvesting Programme					
Harvest categories (000m3)					
Thinnings	69	116	108	95	106
Regeneration felling (P,C,W) felling	296	298	295	299	294
Total	**365**	**414**	**403**	**394**	**400**
Regeneration area (ha)	945	672	591	642	699
Roading Programme					
Roading (km)					
New	17	13	14	12	10
Upgrading	31	29	28	27	25
Total	**48**	**42**	**42**	**39**	**35**

[5] Source: Forecast 2016 – 2035 obtained from Coillte Strategic Plan. Actual volumes may vary resulting from an annual refresh of the strategic plan. On an annual basis, over the plan period, Coillte will identify and publish areas where significant differences occur to figures originally published.

3.3 Coillte's Non-timber Businesses in Mid West BAU

3.3.1 Renewable Energy Projects

Coillte is developing renewable energy projects both on its own, in conjunction with co-development partners and with third party developers who require the lease or purchase lands from Coillte in order to facilitate these developments or an easement over the estate to develop their projects. In working to realise the potential of its estate for renewable energy development, Coillte carefully considers the social, economic and environmental impact a project may have on the surrounding area.

All wind energy proposals that concern the Coillte estate are assessed by Coillte in the first instance via a screening exercise approvals process that includes an environmental impact appraisal. If negative impacts are found, Coillte does not facilitate a situation where these proposals could be put forward to the relevant Planning Authority for their assessment.

However, Coillte is not a Planning Authority for the purposes of undertaking an Environmental Impact Assessment and granting planning permission in accordance with the Irish Planning and Development Acts (as amended). In the interests of proper planning and sustainable development, the suitability of wind farm development proposals on Coillte property is a matter for the relevant Planning Authority.

Within this BAU Strategic Plan period, Coillte proposes facilitate a third party develop the following 2 planning permitted projects:

Proposed planning permitted projects on Coillte estate – correct as at January 2016			
Name of Wind Farm	**Location**	**Status**	**No. of wind turbines**
Letteragh	Doolough Forest, Co. Clare	Pre-construction	6
Slieve Callan	Burren Forest, Co. Clare	Planning permitted and base area sold	1
Total			**7**

Also within this BAU Strategic Plan period, planning permission will be sought by a third party for the following 3 projects:

Proposed projects seeking planning permission on Coillte estate – correct as at January 2016			
Name of Wind Farm	**Location**	**Status**	**No. of wind turbines**
Boolynagleragh Extension	Doolough Forest, Co. Clare	In Planning	6
Glenmore	Doolough Forest, Co. Clare	In Planning	6
Slaghbooly	Doolough Forest, Co. Clare	In Planning	9
Total			**21**

Over the course of this BAU period, Coillte will continue to seek out opportunities for small, medium and large scale renewable energy developments on sites that are either designated as being open for consideration or suitable for this type of development. In all instances, Coillte will avoid impacts on nationally designated sites, protected habitats, Coillte's own biodiversity areas, receiving waters and high conservation value forest areas.

Depending on project specific circumstances, turbulence felling or the realisation of relevant habitat management plans may be required as part of that project. In all relevant instances, turbulence felling will be kept to a minimum and only occur where it is required in order to ensure the safe and efficient operation of a wind farm project. In all instances where premature felling is required, Forest Service requirements regarding the provision of replacement lands will be complied with and for turbulence felled areas, a restocking management plan will be implemented that will involve the re-establishment those areas in place of the crop that is felled.

Key Objective 5

In the Mid-West BAU, Coillte aims to facilitate the development of 5 renewable energy projects in the period to 2020

[1] http://www.agriculture.gov.ie/media/migration/forestry/felling/FellingPolicyWindFarms030611.doc

Biomass Production

Coillte will consider renewable heat supply opportunities as they arise.

3.3.2 Land Sales and Development

Each year the BAU sells, leases or develops a limited area of land, for purposes other than forestry. Most sales are made in response to local demand and typically comprise house sites, isolated dwelling houses, small outlying forest properties, small areas of forest to neighbouring land owners, gravel pits, land to local authorities for infrastructure projects and land for development. Properties sold are those where their value greatly exceeds their value for forestry purposes. A signing-off committee within the company considers all land sales, with larger sales requiring the approval of the Board of Directors. Joint development approaches with local communities are favoured.

It is important to note that no development or lease of lands will be entered into until the consultation/planning process is completed. This includes consultation in particular with local people and communities.

In the course of the period of this plan, properties will be identified which are considered suitable for sale or lease and we will endeavour to consult with the people likely to be affected as these arise.

Coillte also recognises the importance of having its property portfolio registered on the Land Register maintained by the PRA. Coillte will continue to work with the PRA and relevant parties in this regard.

3.3.3 Licensed Use of Coillte Lands

Whilst Coillte has an open access policy for walking, it has a policy to develop the commercial potential of its lands by permitting its use by groups or individuals for other recreational and commercial activities.

The company aims to maximise revenues from licensed use. Examples of such activities are mountain-bike events, shooting, pony trekking, off-road driving, orienteering and others as requested.

The position in regard to these activities and which benefit both Coillte and the applicant is that permission is given under written licence from Coillte. The licence is the formal permission allowing the activity to take place on Coillte lands. It contains a number of conditions and some of these conditions are geared towards the activity and the particular location. Responsibility for issuing the licence, management, processing and safekeeping, rests with the manager at the location. A fee based on the activity is charged for each licence.

3.3.3.1 Licensed Hunting

Game hunting and deer stalking are amongst the oldest forms of forest recreation and continue to be legally enjoyed by many people across the country. Respecting the traditional nature of this activity and recognising the social, environmental and economic benefits which hunting can have, Coillte may permit certain types of hunting on designated areas of the estate. This is in line with Coillte's Recreation Policy, and Deer Management Policy as well as supporting the principles of multiple use forestry.

Hunting is managed and regulated through the issue of licences which are subject to open public tender. Available areas are advertised bi-annually via the company's website www.Coillteoutdoors.ie. Tender bids are evaluated by the relevant BAU personnel in accordance with a standard scoring matrix which acknowledges the annual fee offered, the applicant's previous experience, their commitment to safety, as well as environmental and local interest considerations. Coillte is moving toward a position whereby only persons who have completed an approved competence assessment will be permitted to hunt on its lands. Currently this is a mandatory requirement for all those intending to hunt wild deer.

Coillte have produced codes of practice which establish minimum standards expected of all persons engaged in these activities alongside compliance with licence conditions and national legislation.

3.4 Community, Recreation BAU and Tourism Proposals

Coillte's proposed recreation priorities for the Mid West BAU between 2016 and 2020 include:

- engaging with local community groups and where possible agreeing partnership arrangements for the maintenance and enhancement of existing facilities and possible development of new ones.
- managing and maintaining all existing recreation sites including waymarked ways to the highest standards.
- managing unauthorised usage of the recreation infrastructure in line with best management practice and security policy.
- sourcing funding and developing new infrastructure including 'access for all' on a based on needs identified in conjunction with stakeholders and funding agencies, and to enhance local tourism potential.
- Continuing our exploration of the development of amenities with Clare/Galway County Council, Town Council, Heritage Council, Trails groups and Community Groups

Key Objective 6

In the Mid West BAU, Coillte aims to:

- **Provide a high quality recreation offering to the public.**
- **Maintain all existing recreation sites to the highest standards.**

3.5 Cultural Heritage and Archaeology Measures in the Mid West BAU

Coillte as manager of the State's forestry estate has a duty to respect the cultural heritage attached to it. With support and advice from the NPWS it has developed a code of practice in order to protect this archaeological and cultural heritage.

The BAU will continue to protect archaeological sites on its lands and to note any new sites located during surveys. All recorded archaeological monuments are highlighted during the planning stage of operations. They are identified and fenced off on site by the forest manager to ensure their protection. Pedestrian access from the nearest public road is provided for such sites. Unrecorded archaeological monuments when located are immediately protected and reported to the Environmental Officer. The Forest Service Archaeologist is also notified who advises accordingly. The BAU will continue to support sites of cultural and literary heritage and will identify, protect and record all new items of heritage which are discovered on our lands.

3.6 Environmental Enhancement Measures

The following environmental enhancement measures are proposed for the period 2016 -2020

- Create a linked series of Buffer/ Riparian zones along water courses .
- Continued work on Life sites, Millennium woods & Native Woodlands Sites
- Continue enhancement of Old Woodland Sites
- Protection of Hen Harrier nesting sites
- Continue to work with Statutory Organisations in relation to designated species and habitats

3.6.1 Diversification of Species

Coillte policy is to encourage species diversification in order to maintain and enhance the productive potential of its estate and to increase biodiversity in its forests. The company has a specific objective to increase the current percentage of broadleaved trees to 13.9% over the next rotation.

To reduce or eliminate the need for artificial fertilisation programmes, a more cautious species selection is being applied within the BAU, so that the species planted will not need supplementary fertiliser over its rotation. This effectively means we are pursuing a policy of planting lodgepole pine or pine/spruce mixtures on the low yielding sensitive sites. Diverse conifer species such as Scots pine can also be used in areas of shallow peat. Riparian zones are either left as open space or planted with suitable native broadleaf species.

3.6.2 Practicing Low Impact Silvicultural Systems (LISS)

The selection of a silvicultural system on a forest site will be based on a number of different factors. The decisions will be based on: site stability, the management objective of the site (i.e. timber production or biodiversity), and the surrounding landscape.

The list below explains the area where the various silvicultural systems that collectively are known as low impact silvicultural systems (LISS) are adopted. Low Impact Silviculture Systems such as Continuous Cover Forestry, are regarded as alternative methods of silvicultural management to clearfelling. The introduction of LISS systems can only be achieved gradually and can take up to a rotation length to complete. Currently 17% of the productive area of the BAU, is managed under LISS.

Sites on Coillte Estate managed under LISS

1. Old Woodland Sites (OWS)
2. All Broadleaf High Forest (BHF) stands are to be managed under CCF
3. Amenity sites
4. Agreed Biodiversity Areas where current or target habitat is woodland where appropriate according to Biodiversity Management Plan
5. Management Units currently listed for management under LISS, where silvicultural system equals Small Coup Felling (SCF), Continuous Cover Forestry (CCF), Long Term Retention (LTR), Natural Regeneration (NRE)
6. CCF demonstration sites
7. Scots pine stands, where stability and vegetation provides for Natural regeneration

Key Objective 7

In the Mid West BAU, Coillte aims to maintain the current percentage of broadleaves in the BAU, managed for biodiversity.

Biodiversity

At present 17% of the Coillte land area in the Mid West BAU is designated and managed for biodiversity.

Principal methods of retaining biodiversity in the BAU will include:

- **Retention of Old Woodland Sites.** (OWS) which have supported woodland cover since at least 1830 and which have particular importance as reservoirs of native biodiversity. The BAU has 2985 ha identified as old woodland. This represents 6% of the Coillte land in the BAU. The management of these areas will be in line with Coillte's old woodland sites policy which includes assessing the value of any OWS before felling and high impact operations for designation as high nature value forests, and reviewing all sites that received a good rating from ecologists in the biodiversity survey in 2001-2005 for HCVF potential.

- **Continuing the introduction of riparian buffer zones** as part of the planning process along all permanent watercourses, typically these will consist of a 10m unplanted strip on either side of the watercourse, and possible a narrow strip of broadleaves outside of this. Aquatic buffer zones are established primarily for water protection purposes, and not for timber production.

- **Long term retention** of some stands of timber is practiced to enhance environmental, landscape and social benefits of our holdings. The target for the period is to set aside 1% of the gross area of the BAU for long term retention. Stands designated for retention are in Mote Park, Mountbellew Demense , Castletaylor, Maghera, Pollagoona, Scalpnagowna, Ballygriffy & Attyslany. Scots pine is the only conifer tree regarded as a native species. This tree has limited distribution west of the Shannon and it is our policy to retain them long term where it's possible and safe to do so.

- **Retaining dead wood** in all forests managed by Coillte, consistent with health and safety requirements. Ecologically, dead trees are as important as live ones in natural forest ecosystems. They are important structural elements in forest, providing a wide range of decay classes, which support a wide range of invertebrate and vertebrate animals and epiphytic and saprophytic plants and fungi. Dead and decaying wood can provide habitats for more than one-fifth of the woodland fauna. In the UK, 34% of scarce invertebrates depend upon dead wood.

Dead and decaying wood also influences the flow rate and organic debris in forest streams and rivers. The intention is that the concentration of deadwood will be the highest in semi-natural woodlands (old woodland sites and broadleaved stands) where large trees will be allowed to grow old and die off on site. On all sites being surveyed by inventory staff, deadwood stems are being recorded.

- Carrying out survey and monitoring of important species and habitats, and of water quality to ensure that we are making progress.
- Participating in biodiversity action plans for priority species and habitats in partnership with others.
- Long term water quality improvement through changes in practice and the reduction in use of chemicals
- Monitoring sites that were the subject of EU LIFE projects during the period of the last BAU strategic plan, and engaging with partners in developing new habitat management projects.
- Controlling invasive species (such as Rhododendron) on the Coillte estate, through planting of appropriate species.
- Coillte are committed to implementing a maintenance program for the native woodland sites over the duration of the plan.

Key Objective 8

In the Mid West BAU, Coillte aims to review, manage and maintain the areas of biodiversity.

4. Sustainable Forest Management Policies and Proposals

Coillte manages its forests to FSC and PEFC Forest Certification Standards, ISO 14001 Environmental Management Standard and OHSAS 18001 Occupational Health and Safety Standard.

4.1 Using Forest Design

The BAU recognises its responsibilities to ensure that its forests are planned and managed in a manner that enhances the landscape. BAU team members have been trained in forest landscape techniques and design. All of the forests (and associated properties) have been given a landscape sensitivity designation of high, medium or low. Each forest therefore requires attention to a greater or lesser extent based on these ratings. The production and implementation of a landscape plan is a constantly evolving process which is under continuous review.

A number of factors will be addressed when drawing up a landscape plan. Felling coupe size is one of the most important of these. As a general rule felling coupes adhere to Forest Service regulatory guidelines, at the time of publishing is a maximum of 25ha. To this extent, BAU team members have identified coupes which were greater than 25ha and redesigned/restructured these areas as necessary. There may be situations where felling coupes of greater than 25ha will be necessary, and these will be treated on an individual basis, with the appropriate assessment and consultation process carried out prior to any felling taking place. Other factors and constraints which need to be considered are; age and structural diversity, limited species selection, soil type, windthrow risk, elevation, deer abundance and buffer zone management. These factors are by no means exhaustive. For example, in recent times the disease Phytophthora ramorum has spread in certain locations in Ireland. The disease can kill Larch species, which was always considered a valuable species in terms of providing colour in a landscape. While the disease has not been detected in the BAU as yet, it will have a major impact on species selection when planning landscape design.

Given the high occurrence of streams and waterways in the forests in this BAU, much of our forest design plan centres around buffer and riparian zone management. As current coniferous crops are clear felled, opportunities arise to create riparian areas both within and around the forest properties. These new areas will be managed as areas of open space.

4.2 Water Protection

Coillte's Policy on water protection and water monitoring is outlined in "Water Protection and Forest Operations Guidelines". This document outlines current best practice in minimising the impacts of forest operations on water quality.

Compliance with the Forest Service's Code of Best Forest Practice, which includes a series of Requirements, Guidelines and Notes, the following are the most relevant to water protection; Requirements on the Freshwater Pearl Mussel and Aerial Fertilisation, Guidelines on Water Quality and Harvesting and an Information Note on Appropriate Assessment Procedure is strictly adhered too.

Through the implementation of the Environmental Risk Assessment procedure under the Environment Management System, the most sensitive sites are identified and additional mitigation measures above and beyond to what is routinely adopted are recorded and implemented during the course of the forest operations.

Amongst the suite of mitigation measures that can be selected by the forest operations manager, one of the most important is the establishment of buffer zones on all significant watercourses within the forest. If not already in place from the time the forest was initially planted, a naturally vegetated buffer zone should be established either at thinning or clearfell & restock stage. On very sensitive sites, such as in the prioritised Top 8 Freshwater Pearl Mussel Catchments, the buffer zones are actively managed and small groups of native broadleaves are planted to hasten the development of a mixed open space/scrub woodland habitat.

Other routine measures, include the restriction of when operations can occur in the year, the provision of silt traps, the minimisation of machinery movement in the buffer zone, extraction route layout and use of brash and the design and location of temporary bridging over watercourses within the operations site. Furthermore, to address the risk of oil spillages from forest machinery, a pollution control plan is included in the Management Unit Site File (MUSF) and a pollution control kit is on site for all high impact operations.

Forest operations are actively managed and monitored. On the most sensitive of sites, daily visual monitoring is conducted of all watercourse exiting the operation's site and records kept. On a selection of these sites, short-term water sampling of 'high impact' forest operations described in Section 2.8 is carried out, including sites located in Derrybrien Forest (GY11) and Scarriff Forest (CE05) respectively. In addition, a network of long term fixed sampling sites on selected rivers has been established in each BAU. The purpose of this sampling is to determine the cumulative impact of forests and associated forest practices have on water quality. Sampling is conducted at least three to four times a year, increasing to at least 6 times in areas of intense forest activity is taking place.

Finally, the BAU when planning forest operations consults with regulatory, statutory and interested stakeholders on the topic of water, including the National Parks and Wildlife Service, the Inland Fisheries Ireland and Co. Councils.

4.3 Reducing Use of Chemicals

Pesticides

Coillte uses an integrated pest management approach; a core principle of Coillte's Environmental Management System and both the FSC and PEFC certification bodies. As such, Coillte is committed to reducing its pesticide usage and, where possible, to using non-pesticide methods to control pests and weeds. Pesticides are applied only when absolutely necessary due to environmental considerations and cost. The decision to apply a pesticide is based on a site assessment, and only taken where non pesticide control options are unlikely to give sufficient protection at a reasonable cost. When pesticides are required, only those approved for use in forestry by the Pesticide Registration & Control Division (PRCD) of the Department of Agriculture, Fisheries and Food (the regulatory body for pesticide use in this country) and FSC listing of Hazardous Chemicals are used. All spraying is targeted, using hand operated sprayers only.

Where pesticides are required, their storage, usage and disposal all comply with national pesticide legislation, EMS, FSC and PEFC guidelines and Health and Safety guidelines.

FSC Implications

Coillte is currently certified under the Forest Stewardship Council (FSC) forest certification scheme, a voluntary international forest certification scheme. Under this scheme cypermethrin is classed as 'highly hazardous' and can only be used in FSC-certified woodlands, under a derogation from FSC International. Coillte's cypermethrin derogation extended to October 2015. Therefore Coillte has applied to FSC international for the continued use of cypermethrin, for treating newly planted trees in the forest. Details of this application can be found at this link
http://www.coillte.ie/fileadmin/user_upload/pdfs/Application/Republic_of_Ireland-application_form_for_cypermethrin_derogation-2015.pdf

A public consultation process has been completed with stakeholders on the derogation for continued use of cypermethrin. This robust public consultation process included direct contact with five hundred stakeholders over a 45 day period, the derogation application was also publically available on Coillte's website for the duration of the consultation period. In addition, a representative from the FSC and Soil Association, visited Ireland to review the derogation process and met six stakeholders to discuss the issues around the use of cypermethrin. As part of this process, the use of cypermethrin in Coillte's nursery at Ballintemple and in the forest was also fully reviewed. In addition the representative looked at a number of trials on the use of alternatives to cypermethrin, which are ongoing in the forest. They also reviewed Coillte's environmental and safety procedures. FSC will in time make a decision on the application for the continued use of cypermethrin by Irish FSC forest management certificate holders and Coillte await that decision.

PEFC Implications

Coillte is currently PEFC certified and the PEFC Irish Standard allows use of cypermethrin, as it is legally registered for use in Irish forests by the Pesticide Registration and Control Division of the Department of Agriculture, Food and the Marine.

Fertilisers

Application of fertilisers to areas to be restocked is only carried out where site fertility is low. Where tree crops develop nutrient problems in later years, foliar analysis is undertaken to determine the quantities of fertiliser to be applied. Where required, aerial fertilisation is carried out on thicket stage crops. Approval from the Forest Service is required for aerial fertilisation. This requires the submission of detailed plans and consultation and agreement from the County Council, Fisheries Board and NPWS. Adherence to the Forest Service Guideline on aerial fertilisation is mandatory. A forest crop is described as 'in check' when tree growth is negligible or has ceased altogether. This usually occurs before canopy closure on nutrient poor sites, when the forest is still incapable of recycling the limited amount of available nutrients within the crop.

4.4 Working With People

Coillte's policy is to consult widely with stakeholders in formulating its management plans, policies and objectives. Examples of how Coillte consults with its stakeholders are outlined below:

- consultation on our BAU felling plans takes place on a formal basis with the Forest Service, Fisheries Boards, National Parks and Wildlife Service and County Councils within the BAU;
- Coillte consults at national level on new policies in relation to its forests, at BAU level on its BAU strategic plans and at forest operational level in advance of all high impact operations. The BAU strategic plans are currently reviewed on a five year cycle;
- Each BAU have a social and environmental panel which meets annually as part of Coillte's continuing consultation and engagement. This forum allows Coillte, and environmental, social and community interests to discuss issues of common interest. The minutes of these BAU panel meetings can be viewed at the BAU head office if required. For more information on the panels, click on http://www.coillte.ie/aboutcoillte/about_coillte/coillte_consultation/social_and_environmental_panels/
- Coillte continues to explore opportunities to improve public participation in forest management;
- a comprehensive stakeholder list is held in each of the BAUs. This includes names of local community groups, statutory organisations, non-governmental organisations, farm partners, contractors, customers, complainants, and many other stakeholders. Coillte carry out an annual update of our stakeholder list to ensure that our records are as accurate as possible;
- Coillte welcome any member of the community and stakeholders in general to view our website www.coillte.ie to find out more about what we do. Coillte also encourage stakeholders to make contact with us so that we can answer queries, consider views and respond to any issues raised.

Coillte's consultation process on our BAU strategic plans

It is Coillte's policy to consult widely with stakeholders in formulating its management plans. The BAU strategic plans set out a vision for the forests in each business area unit, and also, how Coillte policies and objectives will be implemented at Business Area Unit level during the period of the plan.

The purpose of Coillte's BAU strategic plans is to set out plans for forest management activities that take place in each of our BAU's. In compiling these plans Coillte apply principles of environmental impact assessment and risk management on potential interactions between forest activities and receptors such as water and soils, biodiversity, archaeology & cultural heritage, landscape, people and material assets.

Some of the topics covered in a BAU strategic plan include the following: commercial planning, timber harvesting, timber sales, community facilities and benefits, environmental enhancement measures etc.

During the consultation process on these BAU strategic plans, Coillte actively engage with stakeholders, in the following ways:

- national newspaper adverts
- regional newspaper adverts
- consultation via Coillte's website
- mail shots to our listed stakeholders
- flyers and notices about our consultation process at amenity site entrances
- forest office meetings (by appointment) which allow further feedback

The consultation process is carried out in two stages (scoping and draft plan stage) to take input from the public in relation to its BAU strategic plans. A map is produced as part of the consultation process, which reflects the areas targeted for clearfelling. This map forms the basis of public consultation and if concerns are raised about particular areas they are addressed at this time. Coillte endeavour to take on board inputs during this consultation process, while also balancing diverse opinions and contributions from the public in relation to these plans.

Stakeholders should note that Coillte on occasion have to make adjustments or amendments to our felling plans for reasons such as silvicultural, landscape design, restructuring, market conditions, forest disease and windblow. Any changes are consulted on in line with Coillte's consultation procedures.

Incorporation of results of consultation in this BAU

Following Coillte public consultation processes, submissions received are acknowledged, logged on our internal system, and assigned to the relevant BAU or team for consideration and possible incorporation into our plans.

The detail in the following table outlines incorporation of changes, responses following consideration of consultation submissions for this BAU strategic plan as a result of submissions received from stakeholders/public during Coillte's public consultation stages (scoping and draft plan) carried out during 2015.

Incorporation of changes, responses in this BAU plan	
Section reference in plan	**Detail incorporated**
Foreword	**Coillte agreed to make the following changes to its plans following consultation with Mr. Neil Foulkes** The following statement was added *"In practicing sustainable forest management Coillte's aim is to develop its forests in a way that is environmentally sustainable, socially sustainable and economically sustainable".*
1.2 Renewable energy	Following the many wind energy submissions received by groups and individuals, Coillte considered each submission and ultimately responded to each submission through the preparation of a detailed Frequently Asked Questions document that was issued to each respondent and uploaded onto the Coillte web site: http://www.coillte.ie/coillteenterprise/renewable_energy/wind_energy/wind_energy_faq/ Coillte also updated Section 1.2 through the addition of specific focused sections regarding fossil fuels, Coillte's approach to public participation and consultation, wind energy, biomass and other renewable technologies.
3.3.1 Renewable Energy Projects	In response to some of the wind related submissions received, most notably one received from Mr. Anthony Cohu, Coillte updated the text in each BAU Strategic Plan such that it provides information that is correct as at January 2016 regarding the number of planning permitted projects and proposed projects that concern the Coillte estate. The information is now presented in an easy to reference table that provides details regarding the status of each project at the time of writing in addition to the number of wind turbines/MW proposed as part of that renewable energy project. In addition, wherever relevant, information is also provided about wind energy projects where Coillte has a direct involvement and those projects include a Community Benefit Scheme and / or additional benefits for the host communities.
3.6.2 Practicing Low Impact Silvicultural Systems	Coillte considered the inclusion of areas managed under LISS in each BAU plan, however this data is currently being actively reviewed and will be completed in the coming months. When completed Coillte will upload this data to its website.
3.6.3 Biodiversity	Key objective 7 in the Midlands plan was reviewed and updated.
4.4 Working with people	A web link for further information on Coillte's Social and Environmental Panels was added to this section.
4.3 Reducing Chemicals	Additional data was added to section 4.3 concerning Coillte's application to FSC for a derogation for the use of Cypermethrin.

3.2 Clearfelling	**Following Coillte's consultation with WOI (Woodlands of Ireland) the following changes were made to Coillte's plans** Coillte agreed to change current text *"Clear felling is a natural part of forest management" to "Clearfell is the most common silvicultural system used in Ireland and the UK due to the prevailing forest culture and has predominated over the past century characterized by the establishment of new forest plantations".*
3.6.3 Biodiversity (Continuing the introduction of riparian buffer zones)	Coillte clarified the statement in its text referencing that *"Buffer zones will not normally have a timber production target"*.
Appendix 2, Column 5	Coillte amended a misprint *"Issues to be Assessed"*, now corrected to read *"Issues to be addressed"*.
2.9 Forest Management Issues	**Following public consultation and engagement with the Irish Farmers Association (IFA). Coillte are also involved in the National deer management forum, The Wicklow Deer Management Partnership and other deer management groups in BAU South East.** Coillte have included additional information in terms of how it manages its deer population and statistics on deer species abundance in each BAU.
3.3.2 Land Sales & Development	**The following text addition agreed with Property Registration Authority (PRA) following consultation** *"Coillte recognises the importance of having its property portfolio registered on the Land Register maintained by the PRA. Coillte will continue to work with the PRA and relevant parties in this regard."*
1.2 Renewable Energy 4.4. Working with people	**Following consultation with Mountaineering Ireland (MI)** Coillte's windteam propose to send Mountaineering Ireland a personalised notification about all wind farm projects that concern the location of wind turbines on the Coillte estate from February 2016 onwards. Coillte have agreed to hold an annual meeting between Coillte's head recreation team and MI to discuss any areas of concern, and any possible proposals which could provide mutual benefit.
Specific to BAU 4 – Mid West Appendix III	Following submissions from a number of stakeholders BAU 4 intend to look at the potential for further enhancement of the recreational values of Aghrane and Vandaluer Estate. This will be carried out in consultation with local groups.

4.5 Monitoring and Evaluation

Coillte continues to monitor the achievement of its objectives and targets using the porforma set out in Appendix IV. The results of this monitoring will be available in Coillte's sustainability reports which will be published on the Coillte website www.coillte.ie

Appendix I - Summary of Archaeological Sites in Mid West BAU

Type of Monument	No. In BAU	SMRS Number *
Barrow - bowl-barrow	1	GA083-067----
Barrow - ring-barrow	2	GA033-010----, CL023-036----
Barrow - unclassified	1	CL029-011----
Boundary mound	8	GA124-010----, GA124-009----, GA085-041----, GA085-026004-, GA085-026003-, GA085-26002-, GA085-002----, GA072-012----
Burial	2	GA098-142002-, GA098-142001-
Burial mound	1	GA097-021----
Castle - tower house	1	CL035-085----
Castle - unclassified	1	CL024-014----
Causeway	1	GA126-068----
Children's burial ground	4	GA126-028----, GA115-007----, GA045-001----, GA032-010----
Church	1	GA095-060----
Cist	2	CL044-066----, CL020-017----
Country house	3	GA126-052----, GA046-068----, GA033-006----
Crannog	1	RO039-049----
Designed landscape - folly	1	GA086-249----
Designed landscape - tree-ring	5	GA126-055----, GA126-054----, GA126-053----, GA096-136----, GA017-053----
Designed landscape feature	1	GA095-063----
Earthwork	3	CL047-011----, CL037-020001-, CL029-010----
Ecclesiastical enclosure	1	GA095-060001-
Enclosure	27	GA129-006----, GA126-070----, GA115-009----, GA114-141----, GA114-007----, GA097-025----, GA095-067----, GA086-248----, GA086-244----, GA073-157----
Fish-pond	2	GA086-242----, GA033-012----
Hilltop enclosure	1	CL019-030----
House - 18th/19th century	2	GA131-022----, GA129-022----
House - indeterminate date	3	GA126-083----, GA097-063003-, GA097-063002-
Hut site	3	CL025-153008-, CL025-151002-, CL025-147002-
Icehouse	1	GA071-066----
Kiln - corn-drying	1	GA131-016----
Kiln - lime	1	GA073-158----
Mass-rock	2	GA086-203----, CL036-044----
Megalithic tomb - court tomb	1	GA005-050----
Megalithic tomb - wedge tomb	3	CL044-068----, CL037-001----, CL036-038----
Monumental structure	2	GA124-006----, GA095-070----
Mound	1	GA097-024----
Quarry	9	GA131-021----, GA131-018----, GA131-017----, GA131-009----, GA126-061----, GA126-058----, GA115-020----, GA098-033----, GA086-134----

Type of Monument	No. In BAU	SMRS Number *
Redundant record	37	GA132-001----, GA131-019----, GA131-004----, GA131-002----, GA131-001----, GA126-066----, GA126-064----, GA126-063----, GA126-023----, GA116-044----
Ringfort - cashel	16	GA097-063----, CL035-099----, CL035-091----, CL034-117----, CL026-039----, CL026-034----, CL025-153003-, CL025-153002-, CL025-152----, CL025-151001-
Ringfort - rath	16	RO042-006----, RO042-005----, RO040-076----, GA126-082----, GA087-196----, GA086-247----, GA045-017----, GA033-009----, GA033-005----, GA033-001----
Ringfort - unclassified	15	GA125-117----, GA116-043----, GA115-050----, GA114-102----, GA114-101----, GA107-061----, GA086-245----, GA086-231----, GA086-228----, GA086-166----
Ritual site - holy well	5	GA131-010----, GA046-061----, CL043-021----, CL037-019----CL018-024----
Souterrain	4	GA097-063001-, GA086-231001-, GA086-166001-, GA045-017001-
Standing stone	2	GA116-090----, CL021-021----
Windmill	1	GA071-055----

* The SMRS numbers listed in the above table can be used to view and search for these monuments using The National Monuments Service Mapviewer available at www.archaeology.ie. When the number of monument types exceeds 10 only the first 10 SMRS numbers are listed.

Appendix II - Habitats and Species in Mid West BAU

Main Properties	Area (ha)	Habitat Quality	Management Strategy	Issues to be Addressed
Lesser horseshoe bat				
Ballykelly Ballyvroghaunroughter Rylane O'Brien's Castle Moyriesk	n/a	Within 600m of roost	Protect known roosts and maintain suitable foraging habitat within 20m radius of roost.	Continue to Liaise with NPWS. Carry out Habitat assessment when sale proposals are within 2.5km of a roost
Hen Harrier				
Slieve Aughty hills Slieve Aughty		Retention of existing open upland habitat and widening of Riparian zones which will enhance better foraging habitat for hen harrier.	To not affect the Breeding of Hen Harriers by our high Impact Operations	liaise with Forest Service and NPWS staff where appropriate
Raised Bog (PB1)				
Lough Lurgeen, Camdeery, Curraghelnanagh, Kilsallagh, Lough Ree, Lisnageeragh, Drumalough, Cloonshanville	245	Excellent	Monitor sites.	Control natural regeneration. Prevention of damage by Fire and trespass.
Aughrim Bog. Ballygar Bog. Monivea Bog. Lough Ree Curraghelnanagh Bog. Derrinlough Bog. Keeloges Bog	169	Excellent	Bog restoration	Complete life Nature project plan by 2015.
Planted Raised Bogs in SACs and not in Life Project Kilure.	87	Fa	Retain existing raised bog habitat. Consult with N.P.W.S.	Decision on future management.

Habitats and Species in the Mid West BAU

Alkaline fen (PF1)				
Portumna	35	Good	Maintain existing fen	Deer herd.
Turlough (FL6)				
Portumna	23	High	Remove non native species	Seek funding.

Dry calcareous heath (HH2)				
Castletaylor	10	v. Good	Retain existing semi natural habits and expand through removal of conifers	Seek funding
Narrow Leaved Helleborine				
Rosturra		Recorded at a number of locations throughout this old woodland site	Protect known locations to plant population	

Protected or Rare Species

Main Properties	Area (ha)	Habitat Quality	Management Strategy	Issues to be Addressed
Dogs Mercury (mercurialis perennis) R				
Woodlawn	94	Fair	Identify and protect Habitat. Retain shade **or** hedge rows.	Poisonous to life stock.
Birds nest orcid (Neottia nidus-avis)				
Ballindereen, Clonbrock Mote Park.	60	Fair	Identify and protect habitat.	Removal of conifers.
Water Rail (Rallus Aquaticus)				
Doon,	35	Good	Retain Habitat.	Native woodland.
Silver Washed Fritillary (Argynnis Paphia)				
Derrydonnell	12	Fair	Retain Habitat.	Gradually remove conifers.
Alder Buckthorn (francula alus)				
Correen	745	Good	Include in Biodiversity Management.	Monitor threats**.**
Otter (Lutra lutra)				
Dunammon, Cooley, Adrergoole North,	3	Good	Protect riparian Zones.	Follow N.P.W.S. Guidelines.
Red Squirrel (sciurus vulgaris)				
Portumna Demesne, Mote Park. Mount Talbot	1,309	Good	Plan Harvesting for Autumn.	Control of Grey Squirrel Population.
Aghrane				
Badger (Meles Meles)				
Portumna Demesne Ballindreen Moniea Doon Mote Park		Fair	Put measures in place to protect Badger sets. Follow guidelines.	Keep locations confidential.
Pine martin (Martes Martes)				
Portumna Demesne Clonbrock	74	Fair	Enhance semi- natural woodland.	Keep locations confidential.

Frog (Rala Temporia)				
New Forest Cloonivihony Mountbellew Demesne Clonbrock Portumna Demesne.	26.7	Fair	Prevent further drainage and allow development of wet woodland.	Retain Habitat.

Native and Mixed Woodlands in the Mid West BAU

Main Properties	Area (ha)	Habitat Quality	Management Strategy	Issues to be Addressed
Oak-birch-holly Woodland (WN1)				
Cloonivihony Mount Talbot Cahircon, Rosturra, Derrygill, Kylebrack & Derryvet	4.4 1.4	Good Good	Habitat Restoration Develop Broadleaves under Story Habitat Restoration Habitat restoration & protection	None Control rhododendron Control of invasive species
Oak-ash-hazel Woodland (WN2)				
Cloonkeenleanode	2.5	Good	Protect and enhance esker woodland. Habitat Restoration	Control of Cherry, Laurel, Beech and Sycamore.
Castlefrench	1.3	Good	Habitat Restoration Replant with native Broadleaves	Protect from trespass.
Portumna Demesne	4.2	Good to Very Good	Habitat Restoration Remove conifers Allow natural regeneration Allow S.P. to mature naturally	Control of Beech and Sycamore.
Ballygriffy		Well developed pockets of WN2 woodland occur here.	Retain existing WN2 habitat with long term expansion of WN2 after harvesting of current conifer crop	Control invasive species
Cahircon		Well developed pockets on WN2 present.	Retain existing WN2 habitat with long term expansion of WN2, after harvesting of current conifer crop.	
Ballyeighter		Large area of well developed WN2 on limestone	Retain beech woodland	
Ballinderreen	12.1	Very Good	Habitat Restoration	Control of Beech and Sycamore

Yew Woodland (WN3)				
Castletaylor Attaslany	12.0	Good	Habitat Restoration / Retention	Control of natural regeneration of none native Species.
Wet Pedunculate Oak-Ash Woodland (WN4)				
New Forest	1.3	Very Good	Habitat Retention Gradually remove conifers. Allow natural regeneration of Native Species	Control of regeneration of exotic species.
Cloonlyon	.6	Very Good	Habitat Retention	Control of none native regeneration Control of Deer stock grazing.
Rosturra, Pollagh & Kilrush		Very Good	Habitat Retention	Control of none native regeneration Control of Deer stock grazing
Wet Willow –Alder –Ash Woodland (WN6)				
Brackloon	7.8	Good	Retain Habitat	None
Cloonbrock	2.4	Good	Restore Habitat	Control of Rhododendron, Laurel Gorse
Kylenamelly & Lough Cutra		Good	Restore & retain Habitat	Control invasive species
Bog Woodland (WN7)				
Kilteevan	.8	Good	Retain Habit	Control of Laurel and Rhododendron
Mixed broadleaved Woodland (WD1)				
Dundsandle	5.3	Good	Retain Habitat	Control of non-native regeneration.
Ballygriffy		Beech dominated canopy with WN2 understory on limestone	Retain Beech Woodland.	
Mixed broadleaved/conifer Woodland (WD2).				
Clonbrock	26.2	Good to Very Good	Retain Habitat	Control of Rhododendro n, Cherry Laurel and Gorse.
Portumna Demesne	27.0	Good	Retore Habitat	Control of non-native broadleaves.
Castletaylor	18.7	Good	Restore Habitat Gradually remove conifers Allow and encourage natural regeneration	None
Dundsandle	8.7	Good	Retain Habitat	Control of non-native regeneration.

Appendix III – Recreation Facilities in the BAU

Name	Nature of facility	Proposed work
Portumna Forest Park	Forest park	Maintain/Develop
Monivea	Looped walks/Path	Maintain/Develop
Carrowbane	Looped walk	Maintain/Develop
Woodlawn	Forest roads	Maintain/Develop
Correen	Forest roads	Maintain/Develop
Mountbellew	Looped walks/Path	Maintain/Develop
Aghrane	Looped walks/Path	Maintain/Develop trails and possible footbridges
Mote Park	Forest Walks	Maintain/Develop
Kilcornan	Forest Walks	Maintain/Develop
Dunsandle	Looped Walks	Maintain/Develop
Cratloe Woods	Recreation Area	Maintain/Develop
Vandaluer Estate	Forest Walks	Maintain/Develop trails
Gragans Woods	Forest Walks	Maintain/Develop
Cahermurphy	Forest Walks	Maintain/Develop
Ballycuggaran	Forest Walks	Extend walk to Moylussa, high point in Clare

Appendix IV – Monitoring

Economic Parameters		
No.	**Parameter**	**Measure**
Establishment		
1	Afforestation	area established (hectares)
2	Afforestation - Farm Partnerships	area established (hectares)
3	Restocking	area restocked (hectares)
4	Establishment Area Aerially Fertilised	hectares
5	Later Manuring Area Aerially Fertilised,	hectares
6	Total kg/ha aerial fertiliser	
Harvesting		
7	Clearfelled area	hectares
8	Clearfell areas greater than 20ha in Upload areas.	no. of Sales Proposals
9	Clearfell areas greater than 5ha in Lowland areas.	no. of Sales Proposals
10	Thinning area	harvest area (hectares)
Silvicultural Systems		
11	Alternative to Clearfell sites	number of LISS sites
12	Alternative to Clearfell area	area of LISS sites (hectares)
Forest Design		
13	Forest Design Plans required	area of BAU where plan needed (hectares)
14	Forest Design Plans developed:	number of plans
15	Forest Design Plans: blocks restructured	number
Species Composition		
16	Primary species	% area of BAU
17	Secondary species	% area of BAU
18	Broadleaves	% area of BAU
19	Open Space	% area of BAU
Chemicals		
20	Chemical usage	Kgs active ingredient/ha
Land Transactions		
21	Area sold by BAU	hectares
22	Area acquired by BAU	hectares
Environmental Parameters		
No.	**Parameter**	**Measure**
Biodiversity		
23	Biodiversity area identified	% area of BAU
24	Biodiversity sites identified	number
25	Biodiversity management plans completed	number
26	Biodiversity features recorded	number
27	Long term retentions,	% area of BAU
28	Deadwood: Standing.	stems/ha in BAU
29	Deadwood: Fallen	stems/ha in BAU
30	Deadwood: Volume	total (m^3) in BAU

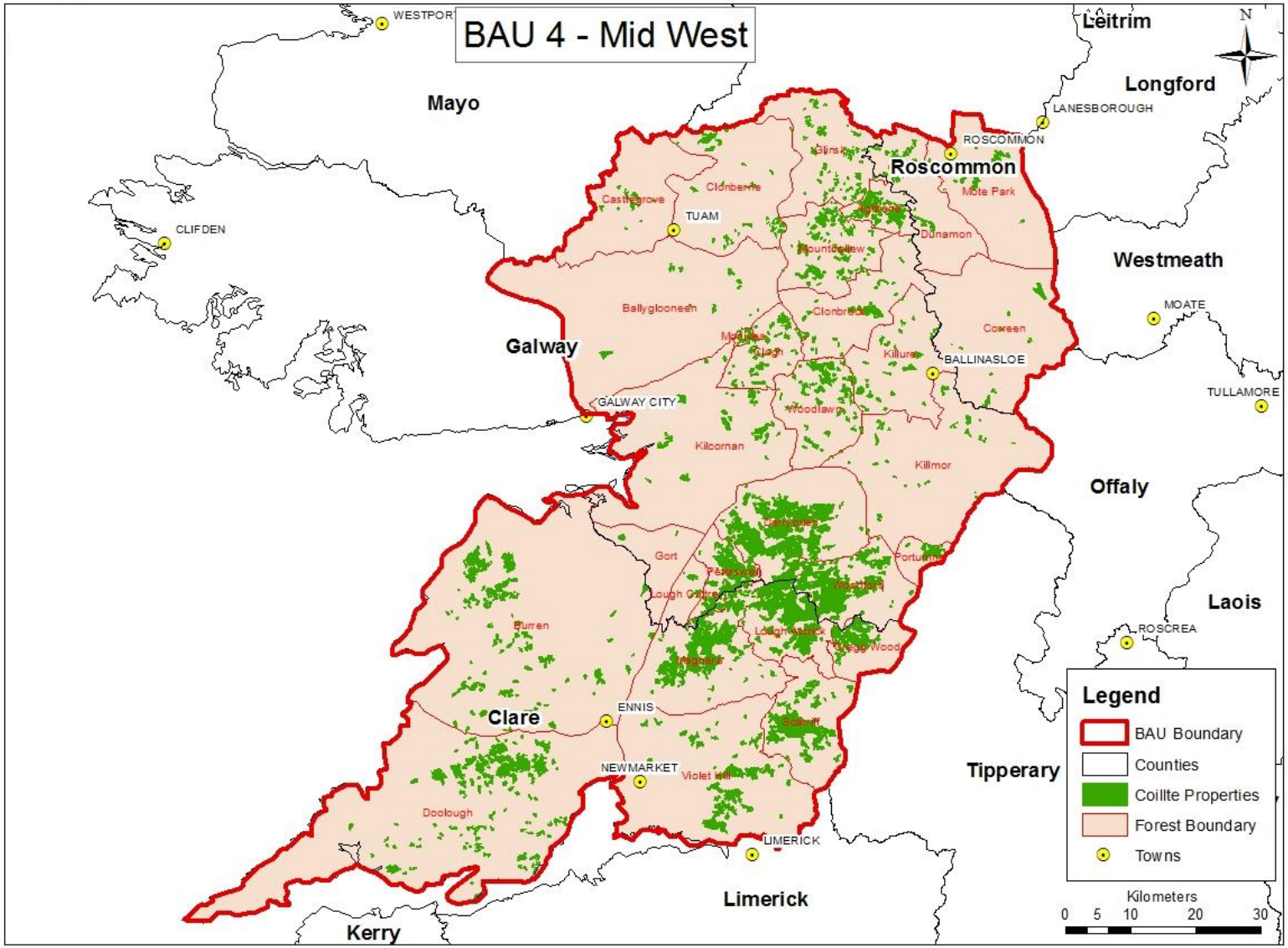
Water Monitoring		
31	Site Preparation,	no. of operations monitored
32	Aerial Fertilisation - Establishment	no. of operations monitored
33	Manual & mechanical fertilisation - Establishment,	no. of operations monitored
34	Aerial Fertilisation - later manuring	no. of operations monitored
35	Manual & mechanical- later manuring,	no. of operations monitored
36	Harvesting	no. of operations monitored
37	Roading	no. of operations monitored
Forest Health		
38	BAU Forest Health Survey results	any damage recorded [y/n]
39	BAU Forest Health Survey:	any action required to be taken [y/n]
Abiotic Damage		
40	Fires – stocked area damaged	hectares
41	Fire break production	meters
42	Windthrow area	hectares
Deer Culls		
43	Current deer cull return figures	number culled
Social Parameters		
No.	**Parameter**	**Measure**
Cultural Heritage		
44	Protected archaeological monuments identified	number
45	Local features/folk heritage recorded on GIS	number
Recreation		
46	Paintball	number licences issued
47	Car rallying	number licences issued
48	Pony trekking	number licences issued
49	Orienteering	number licences issued
50	Community walks/projects	number licences issued
51	Fishing	Number licences issued
52	Hunting	number licences issued
53	Other	number licences issued
54	Visitors to forest parks in BAU	Number estimated
Complaints		
55	Complaints received	number registered
56	Complaints addressed	number signed off
Community		
57	Community partnerships	number
Health and Safety		
58	Notifyable accidents	number

Appendix VI – Forest Details

Forest	Forest Gross Area (ha)	Clearfell Volume m³					Thinning Volume m³					Clearfell Area (ha)				
		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
CE01 - Burren	3,537	15,131	3,969	2,692	15,625	16,938	10,971	1,600	1,984	1,142	1,172	47	9	5	45	51
CE02 - Maghera	5,000	22,490	46,346	44,513	46,525	31,385	5,219	9,026	16,242	6,977	8,599	54	103	91	95	84
CE03 - Lough Atorick	5,056	48,542	37,099	27,897	34,380	37,314	7,892	10,795	9,457	6,283	7,906	127	98	68	67	59
CE04 - Cregg Wood	1,602	7,400	9,345	26,033	13,105	16,721	635	1,415	3,235	3,979	1,332	26	22	41	21	34
CE05 - Scarriff	3,276	39,007	21,281	23,149	22,620	20,611	1,958	3,952	3,523	3,766	2,757	120	43	46	47	45
CE06 - Violet Hill	2,691	10,642	12,893	29,154	30,405	12,929	1,386	7,450	6,324	7,864	7,780	34	25	59	75	50
CE07 - Doolough	4,565	22,964	20,168	16,994	21,377	30,080	3,381	2,719	2,915	1,012	2,064	60	39	28	47	58
GY01 - Castlegrove	226	-	-	-	861	-	1,489	117	850	36	2,804	-	-	-	2	-
GY02 - Clonberne	775	-	5,963	-	-	-	-	1,268	1,784	535	2,331	-	15	-	-	-
GY03 - Glinsk	864	3,621	-	6,271	2,519	2,305	3,326	1,971	3,272	1,620	2,434	10	-	22	5	6
GY04 - Aghrane	1,484	7,512	5,555	7,372	13,206	4,446	1,815	5,404	4,676	5,143	2,751	24	16	17	27	6
GY05 - Mountbellew	1,722	-	10,661	1,770	513	957	2,684	6,177	3,674	6,646	2,231	-	21	3	3	4
GY06 - Clonbrock	661	1,456	7,564	3,828	4,969	-	1,156	578	1,129	583	348	6	17	7	9	-
GY07 - Killure	748	5,412	-	-	-	-	4,981	908	749	2,992	712	17	-	-	-	-
GY08 - Killmor	437	4,871	-	-	823	-	-	1,214	-	1,445	62	15	-	-	4	-

Forest	Forest Gross Area (ha)	Clearfell Volume m³					Thinning Volume m³					Clearfell Area (ha)				
		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
GY09 - Portumna	442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GY10 - Woodford	4,899	28,777	36,642	27,805	32,549	34,013	3,874	10,887	12,709	11,421	12,008	105	80	60	57	73
GY11 - Derrybrien	7,739	42,267	39,777	28,788	25,297	52,610	9,124	25,580	16,421	16,723	24,097	124	82	53	51	123
GY12 - Peterswell	2,567	23,128	8,978	26,271	21,484	12,076	5,817	15,735	8,886	8,727	9,922	73	18	53	59	44
GY13 - Lough Cultra	131	4,091	3,050	1,875	-	3,501	-	20	-	-	-	8	7	4	-	5
GY14 - Gort	67	-	4,946	-	-	-	-	-	-	-	-	-	11	-	-	-
GY15 - Kilcornan	1,088	15,844	6,497	3,631	2,902	-	3,080	1,531	2,056	1,102	1,729	108	16	8	6	-
GY16 - Woodlawn	1,487	-	11,939	863	1,791	8,808	5,581	2,697	4,054	3,136	6,377	-	29	2	9	43
GY17 - Clogh	916	4,202	-	4,517	1,957	1,940	3,621	1,254	1,409	1,346	1,756	14	-	7	3	3
GY18 - Monivea	240	-	996	-	2,808	-	2,066	1,349	510	-	1,184	-	3	-	6	-
GY19 - Ballyglooneen	319	-	1,568	3,199	-	-	-	476	104	1,005	820	-	4	5	-	-
RN11 - Dunamon	762	-	-	2,571	3,169	4,910	1,915	837	984	1,300	1,089	-	-	4	4	7
RN12 - Correen	412	2,332	-	-	-	-	-	298	332	101	608	6	-	-	-	-
RN16 - Mote Park	541	-	2,481	5,378	264	2,529	-	1,107	630	135	883	-	11	7	-	4

Appendix VI – BAU Map

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