Midlands Five Year Forest Plan
2021-2025

Foreword

I have great pleasure in publishing Coillte's Midlands Five Year Forest Plan for our forests. The purpose is to set out plans for the forest and non-forest business that will take place in the BAU (Business Area Unit) during the plan period. In practicing sustainable forest management Coillte's aim is to develop its forests in a way that is environmentally, socially and economically sustainable. A key part of our business is sharing our plans with our neighbours, communities and stakeholders and endeavouring to incorporate their views where possible.

The topics covered in the five year forest plan include:

Commercial Forest Planning:

- Tree Planting
- Timber Harvesting
- Timber Sales
- Forest Roads and Access
- Licenses and Lettings
- Recreation
- Land Acquisition and Property Sales
- Non Forest Business such as Renewable Energy

Forest Planning for public benefits and public use:

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

Forest 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

Ger Buckley , Midlands BAU Team Leader

Gerard Buckley

[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.

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 from all of our operations and activities associated with our forestry, property sales and energy businesses.

Our objectives are to:

1. Implement an organisation-wide system for managing environmental issues. The Director of Stewardship, Risk and Advocacy has responsibility for managing the implementation of 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, to Coillte staff and stakeholders, contractors and their employees and the communities within which we operate.

Ger Buckley

BAU Team Leader

[2] FSC licence code FSC- C005714

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1. Coillte and Five Year Forest Plans

1.1 Coillte

Coillte is Ireland's leading forestry company and largest supplier of timber in Ireland with operations in timber panel production, renewable energy and land management. Our core purpose is to manager our forests sustainably and enable a vibrant forestry sector in Ireland. As the largest landowner in Ireland we enable the development of renewable energy projects on our lands in order to address climate change.

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 and management of the Irish State's forests.

Coillte Today

The company is a forestry and forest products business, with interests in renewable energy. The company has three operating divisions - Coillte Forest, who manage all aspects of the forestry business, a Land Solutions business and Medite Smartply, a leading manufacturer of sustainable timber construction panels.

The company employs approximately 800 people across Ireland and the UK. Our business supports and enables a vibrant forestry sector in Ireland which is estimated to provide over 12,000 jobs, mostly in rural Ireland.

The Forest Service (Department of Agriculture, Food and the Marine) is the forest authority in Ireland and regulates the forest industry. 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.

Nature Conservation and Biodiversity

The Coillte estate consists of a varied tapestry of different habitats, ranging from conifer forests and mixed or broadleaved forests, to open bogs and heathlands, to lakes and rivers. Independent ecologists have identified the areas on our estate with the best value for biodiversity. These are then mapped and managed by Coillte as biodiversity areas. Currently, 90,000 hectares of our lands (about 20% of the estate), in more than 2,300 sites, are mapped as biodiversity areas where nature conservation and biodiversity enhancement are the primary management objective. We work with and respect nature across all of our forest lands, identifying, mapping and protecting important features of biodiversity. A list of important wildlife and their habitats and species in this BAU can be found in Appendix II of this five year forest plan.

Outdoor Recreation

Coillte operate an open forest policy and welcome all visitors to our lands according to the 'Leave no Trace' principals. As Ireland's leading provider of outdoor recreation we have more than 260 forest recreation sites for you to enjoy. For more information on how to get out and enjoy the outdoors and for details of all our recreation sites see http://www.coillte.ie/our-forests/explore/

1.2 Renewable Energy

Coillte is committed to the development of renewable 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 2030 target of achieving 70% of its electricity consumption from renewable sources. Coillte is fully aligned with government and EU policy in terms of the role we play 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 five year forest 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 2030 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 in renewable energy projects 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 for renewable energy projects

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 currently 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.

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 do not hesitate to contact us at info@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 continues to play a key leadership role in delivering sustainable biomass energy solutions to the Irish biomass industry through its regional processing hub 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 processing hub now support 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

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

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

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 Five Year Forest 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 to the public

As the largest provider of timber and timber products in Ireland Coillte enables a vibrant forest sector employing c.12,000 people, mostly in rural Ireland. In addition to these 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 operate an open forest policy and welcome over 18 million visitors to our lands each year. We provide over 260 forest recreation sites, twelve forest parks, six dedicated mountain bike trails and more than 3,000 km of walking trails on our lands. We are members of Leave No Trace Ireland and work closely with them to promote responsible use of the outdoors. Coillte also manage over 20% of our forest estate exclusively for nature conservation and biodiversity protection. Our forests are multi-use and commercial timber management and recreation are not exclusive of each other and can and do exist side by side on the Coillte Estate. Habitat restoration projects such as Coillte's EU funded LIFE Projects, and recreation partnerships like the Dublin Mountains Partnership are showcase projects that demonstrate best practice in natural resource management.

1.4.1 Trees, Carbon and Climate Change

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. Carbon dioxide is perhaps the main gas responsible for climate change and trees are key to the battle against it.

As they grow, trees remove carbon dioxide gas from the air. They convert this carbon into wood while at the same time releasing pure oxygen back into the atmosphere. This is incredibly valuable, ensuring forests, with thousands of trees are both an effective carbon store and carbon sink.

The quicker a forest grows, the more carbon it removes from the atmosphere. Conifers grow at a faster rate than other trees, which is why they are perfect for carbon sequestration. Our fastest growing conifers have an average growth rate of 18 cubic metres per year compared to an average of 4 cubic metres for slower growing broadleaf tree.

If managed appropriately, commercial forests can have an advantage over natural forests in terms of removing and storing carbon.

Maturing trees in a natural forest can lose as much carbon to the atmosphere through decay as they absorb through growth. A managed forest however will continue to absorb carbon over multiple generations, as trees are harvested at maturity and replaced with new young trees. This maintains a rapid rate of carbon sequestration.

The timber products made from forest wood also lock carbon away, which means that using timber products for construction in place of more conventional materials such as bricks, concrete and steel also leads to further net reduction of carbon emissions.

In summary, well managed plantation forests have a triple benefit in combating climate change:

1) Tree absorb carbon from the atmosphere.

2) This carbon is then stored in timber products after harvesting.

3) Timber products can substitute carbon heavy products like concrete and steel.

And finally, trees are always replanted after harvesting to restart the cycle of absorption again.

Coillte consult with local communities in a number of ways, for example through planning consultation process, through direct liaison via annual BAU consultation meetings, through our online portal and directly through operational consultation. Coillte endeavour at all times to accommodate the requirements of stakeholders where possible.

1.4.2 Coillte Nature

Coillte Nature is the not-for-profit branch of Coillte that is dedicated to the restoration, regeneration and rehabilitation of nature across Ireland. Our mission is to deliver real impact on the climate and biodiversity crises through innovative projects-of-scale across four strategic themes:

- Reforesting our landscapes by planting new native woodlands on un-forested land
- Restoring important biodiversity areas by investing in major habitat improvements
- Regenerating urban forests for the benefit of people and nature
- Rehabilitating ecosystem services by bringing sensitive or degraded lands into better health

For more information, see **www.coillte.ie/coillte-nature/**

1.5 Meeting external challenges and constraints

Coillte and all of its forests, lands and operations 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 five year forest plans will each contribute to meeting these challenges and constraints.

1.5.1 Statutory and non-Statutory regulation and certification of forestry

	Response
National Forestry Programme 2014-2020 "To develop an internationally competitive and sustainable forest sector that provides a full range of economic, environmental and social benefits to society and which accords with the Forest Europe definition of sustainable forest management ."	In response to the National Forestry Programme: Coillte will set and meet targets for the national timber supply. Coillte will seek to increase the recreational value of some of its forests. Coillte will continue to manage 20% of all its forests exclusively for nature conservation and biodiversity
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 20% of its forest estate overall for nature conservation and biodiversity management. Coillte initiated a partnership with the National Biodiversity Data Centre based in Waterford which currently holds more than 85,000 records of different species of animals and plants from Coillte lands.

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.
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, EPA 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 the 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, FSC and PEFC). Furthermore, compliance will be assessed by way of independent audits by the Forest Service, 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. Compliance with forest certification standards is assessed annually by independent auditors.	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.

1.5.2 Pests and Diseases

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 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.

In addition, Coillte carry out forest health surveys of its estate and assist in the monitoring of nationally important forest pests such as Ips typographus, the eight-toothed bark beetle, where appropriate.

1.5.3 Societal Expectations

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.
- 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.

1.5.4 Illegal Dumping

Due to the vast and rural nature of the Coillte forest estate, illegal dumping has become a major issue for Coillte with sites close to urban centres being particularly prone to this criminal activity.

Illegal dumping in our forests is not just an unpleasant eyesore, it is an environmental hazard and causes serious problems to habitats, species, and human health. It can pollute rivers and drinking water sources, damage biodiversity and is a threat to both the people who live in the area and recreational users. In addition, it poses a health and safety risk to those staff and contractors who are tasked to remove this illegally dumped litter.

In order to deter illegal dumping Coillte install CCTV cameras and signage in illegal dumping

blackspots and investigate all reports of dumping on our forest lands. When evidence is found at dumping sites, litter wardens issue fines and pursue prosecutions. Coillte also work closely with local authorities to seek prosecutions against those who are responsible for illegal dumping.

Coillte also participate in a number of community and local authority initiatives. Coillte would ask the pubic to be vigilant and report any suspected cases of illegal dumping to the authorities.

1.5.5 Forest Fires

Forest fires as can be seen on the cover page can have a number of serious impacts for Coillte. These include financial losses as well as having an impact on the wider forest industry by disrupting timber supplies from Coillte to the saw mills. There are significant re-establishment cost following a forest fire. There is also potential health and safety risk to emergency personnel, staff and contractors involved in fire control and to members of the public. In addition, environmental impacts include damage to recreation facilities and endangered species.

It is Coillte's policy to minimise areas damaged by fire with effective prevention and fire control measures. Forest fires can occur through the year but the risk is greatest during dry spells from March to June when ground vegetation is dormant and dry. Fire Plans are developed for all forest properties including a map showing access routes and assembly points for fire-fighting personnel, equipment and potential sources of water. As part of Coillte's health and safety programme all Coillte personnel and selected volunteers involved in fire-fighting duties must attend a one day Coillte fire training course. The one day course aims to equip everyone with the skills and knowledge required to carry out forest fighting duties in a safe and effective manner. On completion of training they will receive a certificate and a fire grab bag containing personal supplies relevant to firefighting. BAU Team Leaders have the authority to avail of helicopter services based on input from Operations Managers, and in consultation with National Estates Risk Manager, if necessary. Helicopters will be equipped with bambi buckets. A helicopter could be considered for a number of uses:

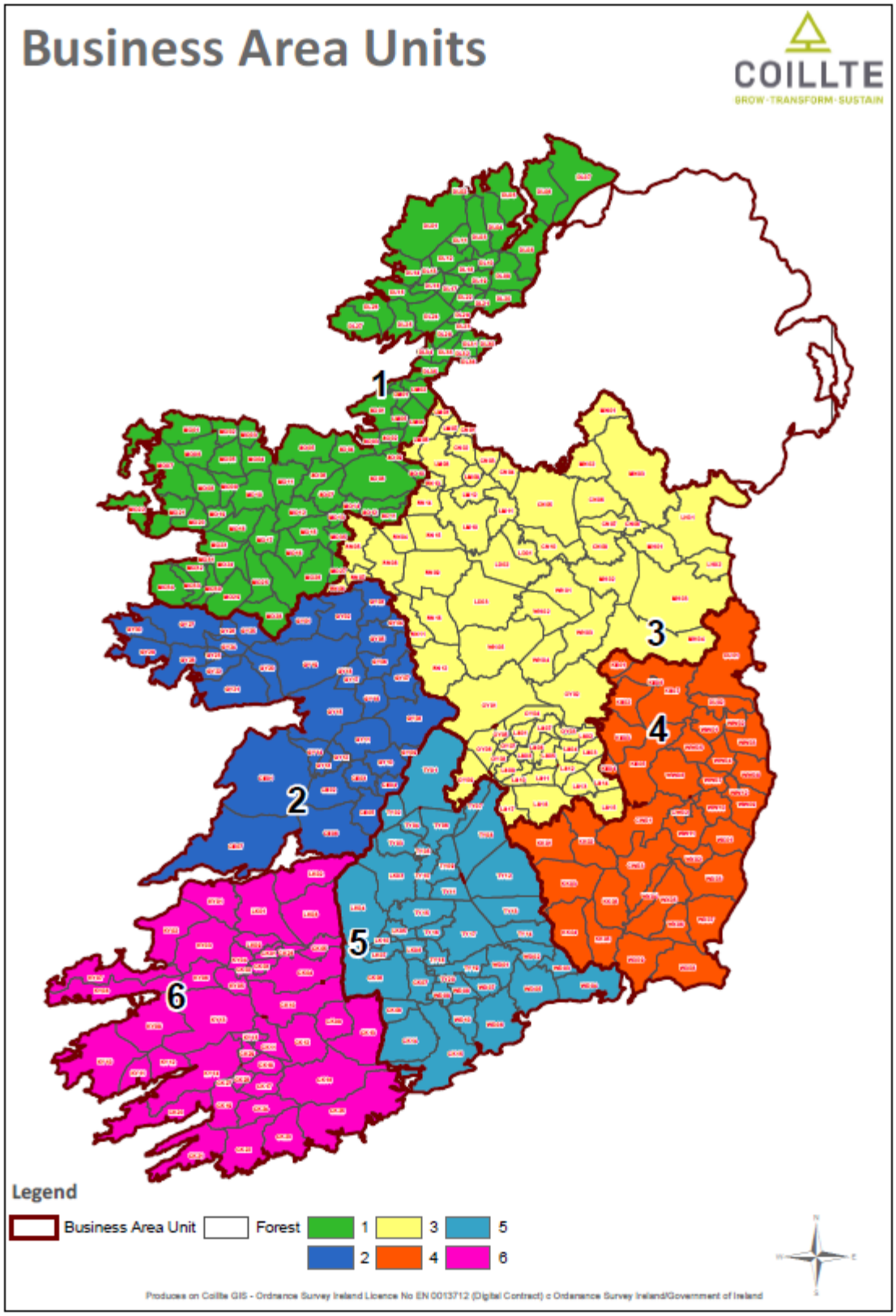
- Surveillance of fire
- Transportation of staff and equipment
- Fire fighting

Coillte would ask for vigilance from the public in relation to Forest fires and action if required by

1. Reporting directly to the emergency services any sightings of a fire
2. Reporting any suspicious activity in relation to fire or any knowledge of attempts to light a fire
3. Not lighting campfires or charcoal barbecue sets on Coillte property.

1.6 Coillte BAUs

Coillte's estate is divided into 6 Business Area Units (BAUs)



Coillte has developed plans for each of these BAUs, called Five Year Forest 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 2016-2020. This plan refers to the incoming planning cycle 2021-2025.

Coillte also convenes annual consultation meetings* for each of its BAUs. Plans are discussed with stakeholders to help Coillte to understand social, recreational and environmental issues as well as opportunities and concerns in each BAU.

*Due to health crisis in 2020, BAU consultation meetings could not be held. This will be reviewed in 2021 in line with government health advice

1.7 Summary on the Various Levels of Coillte Forest Management Planning

The **BAU Five Year Forest 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.

An **Activity Pack** is created when site-level planning is initiated for 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 V 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. Midlands BAU

2.1 The Midlands BAU

All BAU's play important roles in achieving Coillte targets and objectives. The Midlands BAU of Coillte Forest encompasses 10 Counties of Cavan, Longford, Louth, Meath, Monaghan, Offaly, Westmeath, Laois, Roscommon along with a large area of county Leitrim.

It is Coillte's largest BAU covering 1,675,019 hectares or nearly 25% of Ireland. Within this area, Coillte owns 71,318 hectares (4.26%) of which just over eighty percent is forested with the remainder mostly moorland, marsh and lakes.

The population within the BAU is approximately 850,000 people. As expected many large towns are located within the midlands BAU all of which are considered within our management operations.

Given the geographical spread of the BAU, geology and landform vary from drumlin rich soils to the north, the low lying plains in the midlands where peat is the dominant soil type to the slopes of the Slieve Bloom in the South where varied soil types occur. There is a high proportion of lakes dispersed throughout the BAU all of which are mapped and recognised fully within our management prescriptions.

The low lying plains typically found within this midlands BAU are frequently affected by late spring frosts which limit the use of Sitka spruce but are suitable for Norway spruce and other diverse species production. Ravensdale forest in north Louth is capable of producing high quality Douglas fir. One of the largest broadleaf plantations in Ireland, extending to 362ha, is located in the midlands BAU in Mullaghmeen and Half carton on the Westmeath/Meath border.

2.2 Forests and Forest Products in the Midlands BAU

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

During the 2016-2020 period the BAU produced approximately 1.65 million cubic metres of wood products. Coillte's timber production supports the Irish sawmilling sector with our major customers in the period 2016-2020 primarily being ECC, Glennon's, Murrays, Balcas, Laois and Coolrain sawmills. Our BAU is also a major source of wood fibre for Coillte's board mills in Clonmel and Waterford. During the last 5 year period we have also worked with BNM to provide wood fibre for chipping to offset Peat production. Within the BAU we also support both the stake industry as well as the provision of Firewood material to both merchants and the general public in the region.

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 when required. 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 (partnership) by agreement whereby Coillte plants and manages the plantation for the life of the crop. At all times ownership of the land remains with the farmer. Currently we have 119 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 fully support our existing partners.

2.3 Community, Recreation and Tourism Facilities in the Midlands 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.

A number of recreational facilities are the result of a joint initiative between Coillte and local communities. Examples of this collaborative effort are developments such as:

- **The Burren, Cavan –** A cross-border UNESCO designated Geopark, encompassing the mountainous areas of West Cavan and Fermanagh developed in partnership with Cavan County Council.
- **Deer Park, Virginia** – The Golden Way Heritage Walk was developed with the Virginia Heritage Society and Cavan County Council.
- **Rossmore Forest Park** was upgraded in partnership with the Monaghan County Council led Peace II Task Force. In 2015 the walks were upgraded in cooperation with the Monaghan Phoenix Athletics Club.
- **Black Island** was upgraded in partnership with Hope Heritage Group and funded by the Monaghan County Council Led Peace II Task Force.
- **Dartrey Forest** – Car parking facilities and a number of trails were upgraded in association with Monaghan County Council.
- **Brittas Lake** is a community partnership between Coillte and Clonaslee Community Development Association for the development of Brittas Lake.
- **The Slieve Bloom Eco Walks** were developed in partnership with the Slieve Bloom Rural Development Society.
- **Ballynagall South/Scragh Bog Nature Walk** – this was a joint venture between Coillte and the National Parks and Wildlife Service.
- **Killykeen Cycle Trail** – Developed recently with Cavan County Council.
- **Rathcline Native Woodland walk** – developed in association with Lanesborough Tourism Group and Longford County Council.
- **Knockatallon Walking Trails** were developed through the INTERREG IIIA Programme operated by the Blackwater Regional Partnership. These trails were developed in partnership with Monaghan County Council, Tydavnet Group Water Scheme, Knockatallon Rambling Club and Coillte to create 4 walks of 32km varying in length from 6.5km to 10km.
- **Drewstown Woods - Girley Bog Loop –** developed in association with Meath County Council.
- **Creeve Property Native Woodland Arboretum, Co Longford** – developed in association with Cullyfad Local Community.
- **Mote Park, Co Roscommon** – Native woodland developed in association with Mote Park Conservation Group, supported by Forest Service funding.

Many Coillte forests in this BAU are expansive and offer multiple activities such as walking, hiking, multi access, fishing, picnicking, watching wildlife, canoeing, field archaeology or simple enjoyment of the outdoors.

This BAU has a number of designated areas for recreational activity, and these are detailed on the Coillte website http://www.coillte.ie/our-forests/explore/ and are also listed in 'Discovering Irelands Woodlands' (Coillte) booklet under counties Cavan, Longford, Louth, Meath, Monaghan, Offaly, Westmeath, Laois and Leitrim. A table describing the recreational values of the BAUs sites is available in Appendix III.

There are also a number of Waymarked Ways passing through Coillte property in the BAU. These include the Slieve Bloom Way, The Cavan Way, The Westmeath Way, The Monaghan Way and the Tain Trail, Offaly Way.

Coillte has also developed a number of looped trails in conjunction with Fáilte Ireland, under their Looped Walks Programme including, Brittas, Mullaghmeen, Ravensdale, Killeshandra Castle Lake & Forest Walk, Bailieborough, and there are 4 looped walks in Monaghan in the Bragan mountains.

Coillte welcomes the opportunity to work with local groups and authorities to develop further recreational facilities including loop walks subject to the availability of funding.

Currently a dedicated Mountain Bike Trail is being developed in the Slieve Blooms in Counties Laois and Offaly. Once completed forest operations will have to be managed to ensure the safety of the MTB trail users.

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 Midlands BAU

Coillte is aware of some 387 archaeological sites and sites of cultural significance in its landholdings in the Midlands BAU. These monuments include megalithic tombs of different kinds, Cashel's and other enclosures along with crannogs. A summary of archaeological sites in the BAU is provided in Appendix I

With support and advice from the National Monuments Service (NMS), Coillte has developed a Code of Practice in order to protect this archaeological and cultural heritage.

Many land acquisitions contained 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 has always and will continue to support sites of cultural and literary heritage within its estate. Examples within the BAU are Kinnitty Castle property, the Temple in Dartrey and Dartrey Monument and the Burren in Co. Cavan. On an ongoing basis our staff will continue to identify, protect and record all new items of heritage which are discovered on Coillte lands.

2.5 Coillte Biodiversity within the Midlands BAU

Habitats and features of biodiversity value on the Coillte estate are protected during forest operations.

The table below shows that approximately 14,441 ha of Coillte land in the Midlands BAU is protected during operations or enhanced to increase its biodiversity value. This equates to approximately 20% of all Coillte land in the BAU.

Areas protected or managed for biodiversity are spread across the BAU area and vary widely, both in terms of their size and in terms of the habitat type present.

Broadly, there are three main types of site protected for their biodiversity value: Biodiversity Areas, Biodiversity Features and Riparian Buffers. Biodiversity Features and Riparian Buffers can occur anywhere on the estate, including within Biodiversity Areas, so there is some overlap between these three categories.

Bio Ref	Description	Area (ha)
Biodiversity Areas	Habitats that have particular value for nature or biodiversity.	11,801
Biodiversity Features	Small features (usually <2ha) that add biodiversity value to the forest stand, protected during forest operations	1,173
Riparian Buffer Strips	Strips of land that adjoin streams, rivers and lakes, and are managed for their protection.	2,465

Biodiversity Areas

Biodiversity areas are essentially habitats of nature conservation value that occur on the Coillte estate. They vary widely in terms of the habitat type present and in terms of their ecological value.

They are widely spread across the BAU . Examples of some of the areas within our Bioclass management are

- Mount Jessop Bog – Co. Longford
- Lough Rynn – Co. Leitrim
- The Island – Co. Laois
- Ravensdale – Co .Louth

Coillte began the process of identifying and mapping habitats of nature conservation value on the estate in 2000. During 2001-2005, freelance ecologists were commissioned to complete this work.

During 2014 and 2015, Coillte developed a procedure called BioClass, which is used for classifying biodiversity areas according to their habitat type and overall ecological value. The BioClass procedure is based on national research on biodiversity in Irish forests. Freelance ecologists were once again commissioned to review all biodiversity areas across the estate and apply the BioClass procedure. The benefits of BioClass are that the biodiversity information is summarised and provided to Coillte staff in a more accessible manner.

Approximately 50% of Coillte's biodiversity areas are forest habitats: native forests, broadleaves forests, mixed conifer-broadleaves and conifer forests. The balancing fifty percent are open habitats: mostly bogs and heaths, with some specialised habitats such as limestone pavement and coastal habitats.

Some biodiversity areas have very high ecological value and are significant at national or international level, while others are of moderate value and are significant at a more local level.

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.

Biodiversity Features

Biodiversity features are small features that have value for biodiversity. They occur across the whole estate and are protected wherever they occur.

The types of biodiversity features that occur on Coillte sites include: small pockets of open habitat within the forest (usually heath, bog or small wetland); small stands of scrub (broadleaved scrub or open stands of poorly-grown conifers); locations of particular species of flora and fauna; veteran trees or deadwood. Often called "Biodiversity hotspots" our BAU staff and contractors are trained to protect them during all operational works.

Coillte staff and contractors continue to find, record and protect biodiversity features on operations sites through our field collection collector app. This locally collected data is automatically transferred to our spatial mapping system and accessible to all staff.

Riparian Buffer Strips

Riparian buffer strips are portions of Coillte sites that run alongside watercourses (rivers, streams or lakes). In all forest operations, the standard width of buffer strips is 10-15m. This width may be increased on certain site types. The creation and management of riparian buffer strips is described in guidance documents produced by the Forest Service of the Department of Agriculture, Food and the Marine.

The purpose of buffer strips is to protect watercourses from any damage that may arise during forest operations. Conifer trees that were planted in riparian buffer strips in the long-distant past (when forestry policy was were very different to today) are removed and the strip is either left open to revegetate naturally. Sometimes, clumps of native broadleaves are manually planted in the buffer strip.

Over time, the buffer strips develop into open habitat or scrub alongside the watercourse or lake, and have considerable wildlife value. As with the biodiversity features, the area of riparian buffers increases over time, as more are mapped on operations sites and converted to open habitat and/or scrub. The creation of the buffer zones offers real long term benefits for the protection of future

water quality.

2.6 High Conservation Value Forests (HCVF) within the Midlands BAU

Coillte's certification process requires that we identify areas of high conservation value forests (HCVF) across the 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.

In Ireland, HCVF is defined as sites that have a statutory designation for nature conservation, either nationally under the Wildlife Act as Natural Heritage Areas (NHA) or under European Law (Habitats Directive) as Special Areas of Conservation (SAC) or Special Protection Areas for birds (SPA).

HCVF areas may be quite large, such as Special Protection Areas. One such SPA is located within the Slieve Blooms for hen harrier conservation. They may also 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 Midlands BAU. Areas shown are in hectares (Ha).

Designation	Area (ha on Coillte lands)
HCVF	18,367
NHA* – Natural Heritage Area	842
SAC* - Special Area of Conservation	3,041
SPA* – Special Protection Area	13,426
Nature Reserve	184
pNHA	4,243

(*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.

2.7 Species and Habitats in the Midlands BAU

Conifers dominate the species profile in this productive BAU, with Sitka spruce being the core species at 60%. Diverse conifers make up 17% of the canopy with a further of 8% of Lodgepole pine being utilised on the poor marginal areas or as a nurse species. The balancing 15% is Broadleaf species adding further to the BAU species diversity and habitat enhancement. Our midlands BAU contains other special habitats including excellent oak/birch/holly woodlands and mixed broadleaf

woodlands.

Notable animal species in the BAU include the lesser horseshoe bat, Pine Marten, Badgers, Red Squirrel, Fresh Water Pearl Mussel, Hen Harrier, Otter, Wood Ants, Badger and Bats. Our Cover page depicts a Red Squirrel heading for the canopy within a Beech woodland at Emo Park in County Laois.

The BAU aims to maintain and where possible enhance the habitats of these species. Management plans have been prepared and activity packs along with pre commencement walks before high impact operations occur to ensure that our forest operations will not interfere with the habitat of these species where they exist on Coillte land.

Detailed tables have been provided in Appendix II highlighting examples of our approach to the management of areas designated for biodiversity under each of the more important habitat types identified during the ecological surveys and also showing notable species of flora and fauna. The forest management plans for each forest contain details on the entire list of biodiversity areas involved.

2.8 Invasive Species

Within the BAU there are a number of species that are not native to Ireland and which are capable of having a very negative effect on native biodiversity. Most notable of these species is that of Rhododendron which is a significant issue within some of our properties. Other invasive species found in the BAU include Laurel and Japanese knotweed which are now of equal concern. Annually the BAU undertake work to help eliminate these species.

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).

Sites within Business Area Unit 3 are prioritised according to the above criteria. Most recent control of Rhododendron during 2020 was at 3 properties Castlesheane, Kilronan and Dun a rí. The following sites are prioritised for control of invasive species; Knockdrin, Castletown, Derrycarne, and Glassderry.

2.9 Water Quality and Protection in the Midlands BAU

In terms of water, while there are numerous water bodies the main river bodies in the BAU are the Shannon, Suck, Erne , Boyne , Barrow and the Nore. The rivers and lakes of the area support important salmon and trout fisheries and this is also important to the local economy.

Coillteactively plays its part in protecting the water bodies water quality. Prior to the commencement of all high impact forest operations, an environmental risk assessment (ERA) 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 adherence to 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.

2.10 Forest Management Issues

Coillte's Midlands BAU faces a number of issues while aspiring to managing its forests effectively not only for production but also for their recreational and social benefits through our open forest policy. Over the past five years these main issues have included:

- Illegal dumping at both household and commercial scale
- Deer poaching
- Illegal use by motorised vehicles within our estate lands
- Inappropriate recreational area usage and anti-social behaviour
- Theft
- Forest fires
- Domestic Animal trespass to include Horses , Goats , Sheep , Cattle
- General security breaches including entrance barrier damage.

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

2.10.1 Deer Management

Wild deer on Coillte's estate managed 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 achieving viable deer populations across the Coillte 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 here **Deer Management Policy**.

Wild deer are present on over 60% of the Coillte estate. Through browsing and bark-stripping trees, deer can have a considerable negative impact on any tree crop and 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 and can be a major health and safety hazard, particularly on public roads.

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 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 to ensure the effective management of the deer utilising their lands.

Coillte have demonstrated considerable commitment and leadership 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 (a group which has been disbanded

since the retirement of its Chairperson and which Coillte wish to re-instate). At Regional and local level Coillte are active participants in a number of deer management partnerships and groups.

The impacts to Coillte's crops are generally localised, predominately in areas with high deer density. A breakdown of deer species abundance has been gathered countrywide coupled with damage inflicted on crops. Damage is mainly confined to the browsing of broadleaved trees and some more palatable conifers such as Scots pine, Douglas fir, Larches and Norway spruce.

Deer populations are principally controlled through the issue of hunting licences managed centrally within each BAU.

Deer management in Coillte is coordinated nationally through a new deer oversight group which was established in 2020. This group is comprised of staff from Estates, Operations, Public Relations and Recreation.

Coillte's summary deer management policy can be viewed here **Deer Management Policy.** As part of planned work for 2021, Coillte's Deer Oversight Group will review and update our current deer management policy and all supporting documentation

3. The Midlands BAU Five Year Forest Plan

We are very fortunate in this 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 one of forestry management at an intensity and scale 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 Forests, habitat restoration in other, along with recreational usage being prioritised in many woodlands close to urban areas we will maximise the benefits to the environment, local communities and the timber processing industry.

This vision includes:

- forestry as a vibrant industry in the area, integrated into the local economy, providing employment opportunities in the forest, the timber industry and in many downstream activities;
- an increasing diversity in the range of species;
- 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

Our BAU is committed to managing our resource sustainably. In this regard we must ensure that our forest continue to grow at a rate greater than our timber harvesting operations. Doing so ensure that timber revenues are available for continuous re-investment into replanting and establishment maintaince operations.

The Coillte Estate

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

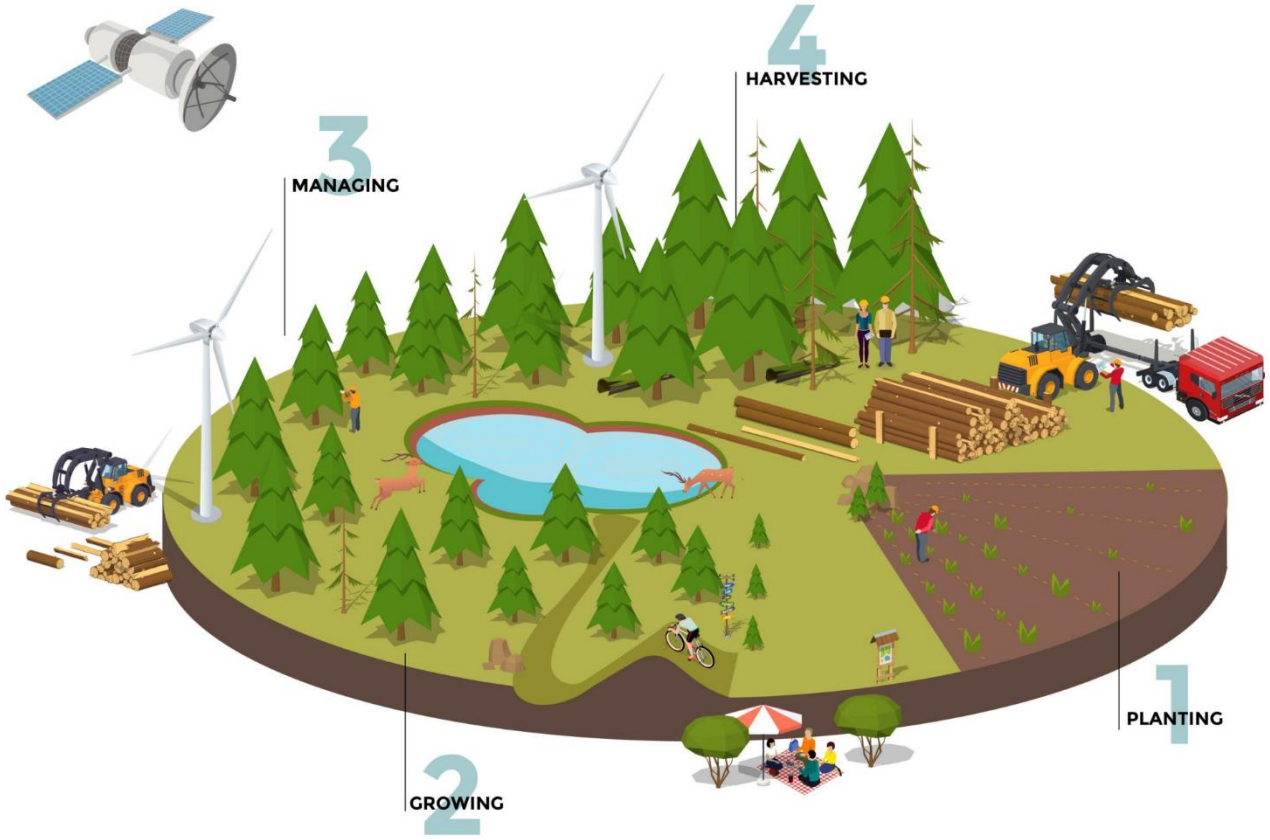
Key Objective 1

In the Midlands BAU, Coillte aims to produce approximately 2,560,000 cubic metres (m3) of wood from its forests between 2021 - 2025.

Of this 2,122,000 m3 will be through felling and 438,000 m3 through thinning.

Where the opportunity arises we will acquire new lands for forest planting in the Midlands BAU during the 2021-2025 periods.

Figure 1: The Forest Cycle



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

- **Clear fell** 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 suitable forests in our 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 clear fell time considerable effort is now put into restructuring by 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 all in practice within 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 in certain areas. As such 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 max 3 interventions. The experience in the BAU to date is that thinning in excess of 3 interventions more often results in wind blow and are therefore the benefit does not outweigh the risk.

All felling is controlled by the Forest Service which issues felling licences as appropriate under the Revised 2014 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, maintained on the Coillte website, of the clear fell and regeneration plans for the following year and notifies stakeholders annually. In addition, Coillte provides a Web map which is accessible by the public from the Coillte website which shows indicative forest areas where harvesting will occur during the five year plan.

New planting and replanting

Under the terms of felling licences, Coillte will fulfil its obligations to replant clear fell areas within the required licence time lines.

Key Objective 2

In the Midlands BAU, Coillte aims to replant approximately 7,644 ha by 2025.

Forest Roads

Forest Roads are an essential element of forest infrastructure. Within the midlands we have c.3000 km of a road infrastructure invested into our forests. They provide access for management, harvesting and transport of timber and enhance the recreational potential of forests. Each year a number of kilometres of new road are constructed in our Midlands BAU. Along with these new roads 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 61km of new roads in our forests (approx. 12km each year)
- 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 Midlands BAU, Coillte aims to construct approximately 61 km of new roads by 2025.

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 condition and nature of county council roads/bridges etc.). To address the access issues a list of all difficult areas is currently compiled and prioritised on the basis of timber supply and a plan put in place to address these issues by assigning relevant personnel to work with our engineering teams. The BAU has to be agile in many of these difficult cases and 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 our local County Councils in the BAU with a view to improving access.
- **Nutrient deficiencies** - The Midlands BAU overall is a fertile BAU. However as expected when managing a land asset of some 71,000 hectares across 10 counties there are always going to be areas of lesser nutrient quality. It is our aim to increase the productivity of our estate in line with our strategic policies but only where correct to do so environmentally. Foliar analysis will be carried out in these larger areas often deemed to be "in check" to determine the correct nutrient prescriptions. In the larger areas of pre thicket crops the application is done aerially using helicopters fitted with GPS mapping and a remotely operated hopper. The process is highly regulated and requires a grant of approval from the Forest service in advance of any works. Extensive buffer zones are created along with digital GPS files provided to the aerial crew to ensure safeguarding of our watercourses. Ongoing proactive restock species reviews occur in this BAU to evaluate these potentially poorer areas after the clear fell event. Appropriate species selection and nurse mixtures are now actively considered in an aim to lessen nutrient deficient crops in the future.
- **Meeting increasingly challenging environmental standards:** requires Coillte to review its practices and assess the risks on a regular basis. Coillte has achieved Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification Schemes (PEFC) forest management certification and is committed to ensuring there is continual professional development and refresher training for all staff, personnel and contractors to ensure a high environmental awareness and work standards are continuously improved. This will incorporate a wide range of training days and courses on all environmental issues and continued co-operation with all statutory stakeholders.
- **Infrastructure:** The provision of a harvesting infrastructure of a scale and quality is key to successful and efficient timber supply management. Our BAU manage this through the awarding of Long term harvesting contracts. These contractors gain valuable forest knowledge within their operating areas and can respond to the environmental challenges , attend ongoing training and engage in all relevant updates on developments in harvesting technology and understanding of their machines capabilities. This is seen as a central requirement for all contractors wishing to operate in this Midlands BAU.

- **Recreation:** Sometimes the popularity of forests for recreation affects our capacity to fell timber. At all times through good advance planning we will consider how best to manage public safety . This may require an adjustment to harvest timing (suspend weekend works) to partial trail closures and diversions. Ultimately if the risk cannot be safely managed we will close the woodland for a period of time.

- **Diseases** can also have a potential impact on timber supply. In 2010 the plant disease *Phytophthora ramorum* was detected in Japanese larch on the Coillte estate, with subsequent findings also in Noble fir and Beech. *Phytophthora ramorum* is a fungus that can infect a variety of tree and shrub species causing loss of foliage, resin bleeding and ultimately plant death. As there is no known cure for this disease, Coillte will have to fell diseased trees as they are identified, to comply with EU plant health legislation. In an effort to ensure disease symptoms are detected early, thus minimising the spread of the disease, we will continue to monitor our forests. Presently a case has been confirmed within this BAU and we are working with our regulator the Forest service to comply with their felling requirements.

- **Deer damage** is an issue in a number of properties in the BAU and special deer fencing is required, at the time of establishment, to ensure these areas are established successfully. Deer management plans exist to monitor and control deer, e.g. implementation of deer lawns

- **Hen Harrier** habitats are present within this BAU in the Slieve Bloom and Bragan Mountain areas. Seasonal restrictions apply to the awarded felling licences to protect the bird in its nesting season. Our BAU will comply with all requirements in the period of the plan to ensure the protection of the Hen Harrier. There is ongoing consultation between Coillte , Birdwatch Ireland , Forest Service and NPWS with regard to the Hen Harrier.

Farm partnerships

In relation to existing farm partnerships Coillte will:

- Work with all our Farm Partners to maximize their Forest potential
- Hold annual management meetings with farm partners to keep them informed.
- Ensure all Farm Partnerships are planned as required in our annual timber programmes.
- Thin farm partnership sites regularly as silviculturally appropriate
- Carry out an inventory on farm partnership sites so records are accurate.

Key Objective 4

In the Midlands BAU, Coillte manages 119 Farm Partnerships.

Overall production targets in the Midlands BAU 2021- 2025

Coillte's proposed operating targets for the Midlands BAU for the period of the plan 2021-2025 are summarised in the table below.

Midlands BAU main Coillte production targets 2021 – 2025[4]

Annual Totals					
Year	**2021**	**2022**	**2023**	**2024**	**2025**
Establishment					
Planting (ha)					
Regeneration planting (r/f) (Replanting after felling)	1214	1550	1650	1615	1615
Harvesting Programme					
Harvest categories (000m3)					
Thinning's	84	89	88	88	88
Regeneration felling (P,C,W) felling	413	423	430	431	426
Total	**497**	**512**	**518**	**519**	**514**
Felling area (ha)	871	887	914	882	903
Roading Programme					
Roading (km)					
New	18	12	11	11	9
Upgrading	44	42	41	39	36
Total	62	53	52	50	44

3.3 Coillte's Non-timber Businesses in Midlands 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 land rights from Coillte in order to facilitate developments. 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

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

the surrounding area.

Coillte has been exploring a range of partnerships and/or joint venture models in relation to its future renewable energy ambitions. Having considered its strategic options in 2018, Coillte has now decided to establish a formal development partnership with ESB, in the form a new standalone renewable energy company. It is expected to establish this development company (DevCO) in 2021.

Coillte adopts a best in class approach to the estate screening for its wind energy projects. This includes a holistic overview of a proposed site and its suitability to accommodate a potential wind farm. At a very early stage an environmental impact appraisal is undertaken. All third party energy interests for the sale/lease of turbine areas or access requirements also follow a screening exercise approval process.

It is important to note that 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 to continue to investigate wind farm proposals and where appropriate continue to facilitate third party requests. Coillte's interests in projects developed by Coillte or in partnership will transfer to DevCo once that company is established.

The following projects are planned for progression on the Coillte estate within this BAU*:

Proposed Coillte / Co Development projects on Coillte estate in BAU 3 – correct as at January 2021			
Name of Project	**Location**	**Status**	**No. of wind turbines/(MW)**
Croagh	Leitrim	In Planning	10
Cullenagh	Laois	Planning Granted	18
Total			**28**

Proposed third party planning permitted wind turbines on Coillte estate - correct as at January 2021			
Name of Wind Farm	**Location**	**Status**	**No. of wind turbines**
Moanvane	Derrycoffey Forest, Co. Offaly	Planning Permitted	4
Coole	Castlepollard Forest, Co. Westmeath	Planning Permitted	1
Total			**5**

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

Proposed projects that will seek / are seeking planning permission for wind turbines on Coillte estate – correct as at January 2021			
Name of Wind Farm	**Location**	**Status**	**No. of wind turbines**
Knockroe	Frenchpark Forest, Co. Roscommon	Pre-planning	1
Coole	Castlepollard Forest, Co. Westmeath	Pre-planning	1
Fossy	Cullenagh and Rossmore Forests, Co. Laois	Pre-planning	TBC
Total			**TBC**

Over the course of this BAU period, Coillte and at a later point DevCo 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. Coillte will also continue to facilitate third party developments where appropriate. In all instances, Coillte will avoid significant 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.

* Please note project details provided are subject to change and will be updated if required during completion of final plans.

Key Objective 5

In the Midlands BAU, Coillte aims to develop/facilitate the development of 7 renewable energy projects in the period to 2025 and will continue to investigate and pursue other opportunities in this area during that period

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

Coillte allows permissive access to all of its lands for walking, except those areas closed from time to time for operational purposes. Cycling is allowed on trails and in areas specifically designated for cycling. And all other recreational activities are managed under a licencing process. These activities can be undertaken by groups or individuals for both recreational purposes and as a commercial activity. Examples of such activities are mountain-bike events, shooting, pony trekking, off-road driving, orienteering and others as requested. Fees may be applied to licenced events and activities.

The position in relation to these activities 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 requirements for insurance cover and some of these conditions are specific to the activity and the particular location. Responsibility for issuing the licence, management, processing and safekeeping, rests with the manager at each location. A fee based on the activity is charged for each licence. All the information is available at this location Coillte Recreation Permits

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. 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 a Code of Practice which establishes minimum standards expected of all persons engaged in these activities alongside compliance with licence conditions and national legislation. All of the necessary information on hunting is located here Coillte Hunting Licences

3.4 Community, Recreation and Tourism Proposals

Coillte's proposed recreation priorities for the Midlands BAU between 2021 and 2025 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 of our 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. The key projects in this BAU over the period of this plan are:
- Continuing our exploration of the development of amenities with County Councils including:
  a. Cycle route at Killykeen Forest Park, Co Cavan
  b. Slieve Bloom Mountain Bike Trail, Co Laois and Co Offaly

Key Objective 6
In the Midlands BAU, Coillte aims to:

- **Provide a high quality recreation offering to the public**
- **Maintain all existing recreation sites to the highest standards**
- **Work in partnership with proactive communities to upgrade amenity sites**

3.5 Cultural Heritage and Archaeology Measures in the Midlands 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 National Monument Services it has developed a code of practice in order to protect this archaeological and cultural heritage.

Our 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 where required 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 such as that at the Temple in Dartrey and the Dartrey Monument and will identify, protect and record all new items of heritage which are discovered on our lands.

The BAU will also protect all other cultural features during its operations works . Examples of these would include old walls , embankments and old ruins . There are many other types and our staff and contractors have been trained to ensure all are protected for future generations.

3.6 Environmental Enhancement Measures

The following environmental enhancement measures are proposed for the period 2021-2025.

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. 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 their rotation. This effectively means within this BAU 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 especially where there is a high late spring frost Risk. Riparian zones are either left as open space or planted with suitable native broadleaf species. Old woodland sites within our area will also be assessed prior to clear felling, with suitable restock species agreed based on an field audit procedure.

3.6.2 Practicing Low Impact Silvicultural Systems (LISS)

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

Listed below are areas within our midlands BAU where the various silvicultural systems ,collectively known as low impact silvicultural systems (LISS) may be adopted. One such system is Continuous Cover Forestry, regarded as alternative methods of silvicultural management to clear felling. Not all areas are suitable for immediate change and the introduction of LISS systems can only be achieved gradually and can take up to a rotation length to complete. Continuous Cover Forestry is carried out in many sites and continuously assessed. A few examples are Emo Park, Mullaghmeen, Killykeen, Rossmore, Dun A Ri, Knockbarron, Black Island, Carrick Wood and Ravensdale.

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 Midlands BAU, Coillte aims to maintain and enhance the current level of broadleaves in the BAU.

3.6.3 Biodiversity

At present 14,441 hectares or 20% of the Coillte land area in the Midlands BAU is designated and managed for biodiversity.

Principal methods of retaining biodiversity in the BAU will include:

- **Retention of Old Woodland Sites (OWS)** 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 5,514 ha identified as old woodland. This represents 8% of the Coillte land in the Midlands BAU or 21% of the old woodland identified on Coillte's estate nationally. 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. The results of these assessments determine future management and restocking species.

As a result of Phase 1 of our public consultation in relation to updating our plans Coillte will, during the course of the current plan period, include in our plans the completion of the inventory of ancient woodlands on the Coillte estate, and of assessing those sites in terms of their nature conservation value.

- **Continuing the introduction of riparian buffer zones** as part of the planning process along all permanent watercourses, typically these will consist of a 20m unplanted strip on either side of the watercourse. Depending on the location additional broadleaf planting for a further 10m behind the bare strip , however often more favoured is allow the area to regenerate naturally with native species and shrubs. 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. Glendine property known locally as the Ministers Hut has been designated for long term retention as has a block of Douglas Fir within Emo Park and some areas within the Cavan Burren. Scots pine is the only conifer tree regarded as a native species 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 is policy, 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. We also record Dead wood both fallen and standing after harvesting events and when completing 4 year old crop assessments.

- 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.

- **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 n**ative woodland sites** over the duration of the plan.

Key Objective 8

In the Midlands 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 this BAU as yet, it will have an impact on species selection when planning landscape design.

Given the overwhelming 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 a mixture of open space and native broadleaf species such as Rowan, Birch, and Willow.

4.2 Water Protection

Coillte's approach in protecting water quality and other environmental receptors is outlined in our SOP-023 ERA Procedure for Site Operations. This document sets out our standardised procedure in minimising the impacts of forest operations on water quality.

This procedure incorporates adherence to the Forest Service – Department of Agriculture, Food and Marine, Code of Best Forest Practice, which includes a series of Requirements, Guidelines and Notes. Relevant water protection guidelines include Environmental Requirements for Afforestation, December 2016, Standards for Felling & Reforestation (Interim), October 2019, Draft Plan for Forests & Freshwater Pearl Mussel and updated Information Notes on Appropriate Assessment Procedure and completion of Natura Impact Statements (NIS) and regulatory licence/permit conditions pertaining to specified forest operations.

Through the implementation of the ERA 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 Activity Pack 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 2.9 is carried out. 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. Either water sampling and/or aquatic surveys are conducted on a periodic basis throughout the year.

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.

Details of any further relevant work completed or being carried out within the BAU will be included in the final plans.

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 schemes. 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.

In 2021, as part of our Chemical Use Policy all necessary ESRA's were produced, copies of which can be made available if requested to info@coillte.ie.

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 Sharing our plans and consultation

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 in relation to its forests, at BAU level on its Forest Five Year plans and at forest operational level in advance of all high impact operations. The Forest Five Year plans are currently reviewed on a five year cycle;
- Each BAU hosts consultation meetings with stakeholders annually as part of Coillte's continuing consultation and engagement. This allows Coillte to discuss issues of common interest with stakeholders.
- 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, and many other stakeholders. Coillte carries out an annual update of our stakeholder list to ensure 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. Those who wish to be added to our stakeholder register can do so by completing and submitting the contact form on our website.

Coillte's stakeholder engagement process on our Five Year Forest Plans

It is Coillte's policy to engage widely with stakeholders in formulating its management plans. The Five Year Forest 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 forest plans is to set out plans for forest management activities that take place in each of our BAU's. In compiling these plans Coillte applies 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 our forest plans include the following: commercial planning, timber harvesting, timber sales, community facilities and benefits, environmental enhancement measures etc.

During the consultation process on these forest plans, Coillte actively engages with stakeholders, in the following ways:

- national newspaper adverts
- regional newspaper adverts
- consultation via Coillte's website
- emails or letters to our listed stakeholders
- BAU annual consultation meetings
- forest office meetings (by appointment) which allow further feedback

The stakeholder engagement process is carried out in two stages (scoping and draft plan stage) to take input from the public in relation to its forest plans. A map is produced as part of the consultation process, which reflects the areas targeted for clear-felling. 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 engagement 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 stakeholder engagement in this BAU

Following Coillte public consultation processes, submissions received are acknowledged, logged on our Stakeholder Call Log and assigned to the relevant BAU or business area for consideration, response and possible incorporation into our plans.

Details of incorporated changes and responses issued by Coillte to stakeholder submissions during

Phases 1 and 2 of public consultation received for this Five Year Forest Plan will be published in the final versions of our plans which are due to be completed during 2021.

4.5 Monitoring and Evaluation

Coillte continues to monitor the achievement of its objectives and targets using the proforma set out in Appendix IV. The results of this monitoring will be available at the end of the plan period and published on the Coillte website when our final plans are completed.

Appendix I - Summary of Archaeological Sites in Midlands BAU

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

BAU	Type of Monument	No. In BAU	SMRS Number *
B3	Barrow - bowl-barrow	2	LA007-004----, LH011-001001-
B3	Barrow - stepped barrow	1	WM011-150----
B3	Barrow - unclassified	4	LA006-007----, LA006-008----, RO015-016----, WM038-013----
B3	Bawn	5	CV017-038----, CV017-039----, CV028-009002-, LE025-061002-, OF030-005003-
B3	Boundary mound	2	LE016-005001-, LE016-005002-
B3	Building	1	LE025-060004-
B3	Bullaun stone	3	LA007-012----, LE025-060003-, LF019-068002-
B3	Burial	1	RO002-038----
B3	Burial ground	1	LE009-006002-
B3	Burnt mound	1	CV004-065----
B3	Cairn - boundary cairn	7	LA010-001002-, LE016-002001-, LE016-002002-, LE016-002003-, LE016-002004-, LE016-002005-, OF039-060003-
B3	Cairn - unclassified	9	CV004-003002-, CV007-003----, LE016-004----, LE035-029----, LF005-018----, MO015-007----, OF039-060004-, RO017-089002-, RO029-153----
B3	Castle - motte	1	OF036-044003-
B3	Castle - motte and bailey	1	ME006-027----
B3	Castle - tower house	1	OF030-005001-
B3	Castle - unclassified	7	CV028-009001-, CV035-011----, LE025-061001-, LF015-033----, OF036-044001-, OF036-045----, RO010-033----
B3	Church	4	LE016-020----, LE025-060001-, RO006-059001-, RO029-152----
B3	Cist	1	LH011-001002-
B3	Crannog	5	CV019-034----, RO003-010----, RO006-051----, RO006-052----, RO039-049----
B3	Designed landscape - folly	1	LA005-010002-
B3	Designed landscape - tree-ring	2	CV039-038----, OF016-037----
B3	Designed landscape feature	2	LA009-007----, LA009-016----
B3	Earthwork	7	LE013-004----, RO017-134----, RO036-006----, WM007-067----, WM012-128----, WM026-101----, WM038-026----
B3	Ecclesiastical enclosure	2	LA029-046002-, WM020-038002-
B3	Ecclesiastical site	1	LA029-046001-

B3	Enclosure	52	CV001-010----, CV001-011----, CV002-013----, CV002-028001-, CV002-028002-, CV004-002----, CV004-037----, CV009-006----, CV011-005----, CV017-060----, CV019-036001-, LA002-016----, LA006-002----, LA006-004----, LA006-010----, LA007-003----, LA013-057----, LA014-044----, LA015-009----, LA015-011----, LA015-012----, LE008-010----, LE009-006001-, LE015-108002-, LE015-134----, LE015-150----, LE015-153----, LF015-028----, LH005-026----, LH008-005----, LH008-029----, LH022-045----, MO009-064----, MO014-002----, MO017-045----, MO023-004----, OF003-004----, OF012-009----, OF035-004----, OF036-047----, OF039-015----, OF039-015001-, OF039-015002-, OF039-015003-, OF039-015004-, OF039-015005-, OF039-018----, OF039-028----, RO006-041002-, RO011-054----, RO029-032----, WM017-116----
B3	Field system	4	CV004-050----, LA011-001----, LA013-064----, LH008-055002-
B3	Fulacht fia	4	LH008-001----, LH008-092----, RO014-077001-, RO014-077002-
B3	Graveslab	1	OF036-044005-
B3	Graveyard	2	LE025-060002-, RO006-059002-
B3	Hermitage	1	LA007-008----
B3	Hillfort	1	LA007-002----
B3	Hilltop enclosure	1	RO017-089001-
B3	House - indeterminate date	4	CV001-028----, LE017-004002-, RO002-019001-, RO003-035----
B3	House - medieval	2	CV001-027----, LA009-015----
B3	Hut site	9	CV001-025----, CV001-026----, CV002-042----, CV004-024----, CV004-025----, CV004-026----, CV004-066----, LH005-021002-, LH005-023002-
B3	Icehouse	3	CV028-010----, CV035-008----, WM011-004----
B3	Inscribed stone	1	LE012-031----
B3	Kiln	1	LE025-061003-
B3	Kiln - corn-drying	1	CV007-012----
B3	Linear earthwork	1	LE005-014----
B3	Mass-house	1	LA014-056----
B3	Mass-rock	2	LE019-015----, RO024-012----
B3	Megalithic tomb - court tomb	5	CV019-035----, LE015-062----, LE015-108001-, MO013-007----, RO004-062----
B3	Megalithic tomb - portal tomb	2	CV004-001----, CV004-004----
B3	Megalithic tomb - unclassified	4	CV004-027----, LA006-001----, MO009-051----, MO009-063----
B3	Megalithic tomb - wedge tomb	4	CV004-003001-, CV004-005----, CV007-001----, RO004-063----
B3	Millstone quarry	1	CV009-026001-
B3	Mound	3	LA023-018----, OF030-005002-, OF037-011----
B3	Promontory fort - inland	3	CV004-036----, RO002-002----, RO003-008----

B3	Quarry	2	LA029-027----, RO004-013001-
B3	Redundant record	16	CV007-018----, LA003-013----, LA009-011----, LA029-046----, LE009-005----, LE009-006----, LE011-104----, LE012-034----, LE015-117----, LE016-009----, LE016-019----, OF038-032002-, RO006-059004-, RO010-121----, RO012-001001-, WM001-054----
B3	Religious house - unclassified	1	RO006-059003-
B3	Ringfort - cashel	10	CV001-020----, CV002-029----, CV002-038----, CV006-004----, LE011-106001-, LE012-033001-, LE013-001----, LF019-119----, RO006-009----, RO006-040----
B3	Ringfort - rath	101	CV005-014----, CV005-016----, CV007-008----, CV009-005----, CV017-034----, CV017-047----, CV017-066----, CV019-022----, CV025-085----, CV028-015----, LA006-006----, LA015-007----, LA015-013----, LE011-065----, LE012-018----, LE014-025----, LE014-029----, LE015-050----, LE015-126----, LE015-130----, LE015-152----, LE017-001----, LE017-004001-, LE018-011----, LE025-054----, LE025-066----, LE031-122----, LF006-036----, LF006-047----, LF006-051----, LF011-021----, LF011-022----, LF015-029----, LF015-040----, LF019-063----, LF019-064----, LF019-072----, LF019-100----, LF027-020----, LH004-096----, LH005-017----, LH005-021001-, LH005-023001-, LH005-025----, LH008-002----, LH008-023----, LH008-055001-, ME002-001----, ME002-002----, ME002-005----, ME003-014----, ME015-043----, ME022-016----, ME032-025----, MO009-050----, MO010-013----, MO013-006----, MO017-075----, MO022-020----, MO023-005----, OF030-007----, OF037-007----, OF038-032001-, OF039-017----, OF042-029----, OF043-062----, RO002-019----, RO003-031----, RO003-064----, RO004-012----, RO006-015----, RO006-041001-, RO006-042----, RO006-043001-, RO006-044----, RO006-045----, RO006-055----, RO006-061----, RO006-090----, RO010-061----, RO011-053----, RO012-001----, RO012-024----, RO020-023----, RO021-017----, RO021-018----, RO024-002----, RO029-112----, RO036-007----, RO040-076----, RO042-005----, RO042-006----, WM001-026----, WM003-032----, WM007-060----, WM011-003----, WM011-067----, WM011-070----, WM011-109----, WM012-068----, WM017-028----
B3	Ringfort - unclassified	5	LE008-007----, LE015-146----, LE017-010----, RO022-100----, RO034-029----
B3	Ritual site - holy well	1	CV039-037----
B3	Road - class 2 togher	2	LF018-084007-, LF018-084039-
B3	Road - class 3 togher	2	LF018-084010-, LF018-084011-
B3	Road - road/trackway	1	OF037-022----
B3	Road - unclassified togher	2	LA009-008----, OF003-002----

B3	Rock art	15	CV004-005001-, CV004-051----, CV004-052----, CV004-053----, CV004-054----, CV004-055----, CV004-056----, CV004-057----, CV004-058----, CV004-059----, CV004-060----, CV004-061----, CV004-062----, CV004-063----, CV004-064----
B3	Souterrain	6	CV019-036002-, LE012-022----, LE012-033002-, LH022-021----, ME032-021----, RO006-043002-
B3	Standing stone	7	LE016-003----, LH004-002002-, LH004-002003-, LH004-002004-, LH004-002005-, RO032-051----, WM011-075----
B3	Stone circle	1	LH004-002001-
B3	Stone row	1	CV021-073----
B3	Sweathouse	23	CV003-009----, CV003-021----, CV005-013----, LE008-031----, LE009-010----, LE012-053----, LE012-055----, LE012-056----, LE015-165----, LE016-023----, LE016-025----, LE016-028----, LE016-034----, LE018-066----, LE018-077----, LE021-010----, LE021-011----, LE021-013----, LE021-014----, LE021-015----, RO002-003----, RO002-021----, RO004-013002-
B3	Water mill - unclassified	1	WM006-073----
B3	Well	4	CV035-007----, CV039-088----, LA006-009----, RO021-016----
B3	Windmill	1	WM002-033----

Appendix II - Habitats and Species in Midlands BAU

Special habitats in Midlands BAU

Main Properties	Habitat Quality	Management Strategy 2021-2025	Issues to be Addressed
Raised Bog (PB1) --- LIFE project, Life Nat/IR/000121			
Killyconny bog, Fartagh, Cavan (11.6 ha)	Includes areas of good quality active raised bog and associated habitats.	Retain high water table to enable peat forming mosses to grow	Monitor and control regeneration of exotic tree species and fire prevention
Ardgullion Bog, Coolamber, Longford (25 ha)	Includes areas of good quality active raised bog and associated habitats.	Retain high water table to enable peat forming mosses to grow	Monitor and control regeneration of exotic tree species and fire prevention
Carn Park Bog, Westmeath (132.2 ha)	Includes areas of good quality active raised bog and associated habitats. Rare sphagnum pulchrum present.	Retain high water table to enable peat forming mosses to grow	Monitor and control regeneration of exotic tree species and fire prevention
Crosswood Bog, Creggan, Westmeath (42.7 ha)	Includes areas of good quality active raised bog and associated habitats.	Retain high water table to enable peat forming mosses to grow	Monitor and control regeneration of exotic tree species and fire prevention
Mount Hevey Bog, Ballasport/Kilwarden, Meath/Westmeath border (58.2 ha)	Includes areas of good quality active raised bog and associated habitats.	Retain high water table to enable peat forming mosses to grow	Monitor and control regeneration of exotic tree species and fire prevention
Shanderry (Coolrain Bog SAC)	Coolrain Bog is excellent habitat.	Retain high water table to enable peat forming mosses to grow	Monitor and control regeneration of exotic tree species and fire prevention
Raised Bog (PB1) --- LIFE 09			
Lough Ree, Tonagh and Mucknagh (21ha) SAC	Includes areas of good quality active raised bog and associated habitats.	Raise water table	Removal of Conifers
Lough Forbes complex, Cloondara (16.1ha) SAC	Includes areas of good quality active raised bog and associated habitats.	Raise water table	Removal of Conifers
Moneybeg and Clareisland Beg, Goreport (15.7 ha) SAC	Includes areas of good quality active raised bog and associated habitats.	Raise water table	Removal of Conifers
Lough Kinale and Derragh Lough,	Includes areas of good quality active raised bog and associated	Raise water table	Removal of Conifers

Tonymore (37ha) NHA	Habitats.		
Mount Jessop Bog, Mount Jessop (71.9ha) NHA	Includes areas of good quality active raised bog and associated habitats.	Raise water table	Removal of Conifers
Girley Bog, Drewstown (32.2 ha) NHA	Includes areas of good quality active raised bog and associated habitats.	Raise water table	Removal of Conifers
Lough Derravaragh, Derrya (25.6ha) NHA	Includes areas of good quality active raised bog and associated habitats.	Raise water table	Removal of Conifers
Wooddown Bog, Wooddown (50.7ha) NHA	Includes areas of good quality active raised bog and associated habitats.	Raise water table	Removal of Conifers
Cangort Bog (13.45ha)	Includes areas of good quality active raised bog and associated habitats.	Raise water table	Removal of Conifers
Millennium Forests			
Lacca, Co Laois	17ha	Establish native woodland	
Derrgorry, Co Monaghan	42ha	Establish native woodland	
Portlick, Co Westmeath	52ha	Establish native woodland	Owned by Westmeath County Council and managed by Coillte
Blanket Bog (PB2)			
Doon, Seltan, Leitrim	Extensive expanse of blanket bog over undulating ground	Maintain heath	To control grazing
Slieve Bloom Mountains, Offaly and Laois: Gorteen, Glenconra, Tulla & Crumlin 2, Tinnahinch/Glendine, Barrow Valley, Baunreagh 2, and other properties	Extensive >600 ha, Excellent quality, usually within SAC/NHA	Maintain and enhance quality; using some adjacent areas (e.g. 'red areas') to enhance bog (and hen harrier) habitat.	prevent drainage; protect from fire; prevent and remediate encroachment by self-seeding conifers; consider
Wet Heath (HH3)			
Seltan	Rare species	Follow SAC Guidelines	Control grazing

Petrifying springs (FP1)			
Offaly, on Camcor River: Glinsk/Glenregan	Relatively large example with the alluvial woodland characteristic *Crateneuron* moss. Priority Habitat Tufta Spring Part of a stream-beech-alluvial woodland complex.	Protect and enhance removal of all conifers. Maintain quality by maintaining existing conditions	
Dystrophic lakes (FL1)			
Doon, Leitrim	Rare species	Follow SAC Guidelines	Protect lakes
Turlough (FL6)			
Knockbarron, Offaly	Unusual turlough-like hollow in esker complex	Prevent drainage; protect from adjacent forestry operations	Follow guidelines
Alkaline fen (PF1)			
Lough Boora, Offaly	Peatland contains a small excellent orchid-rich site	Removal of remaining conifers	Follow guidelines
Important orchid site			
The Long Derries, Offaly	Grassland degraded by scrub encroachment	Restore to orchid-rich grassland.	Follow guidelines
Hen Harrier			
Eshbrack, (Barratitoppy, Bragan, Knockanearla,, Stramackilroy), Co. Monaghan	Extensive area of bog, heath and lake habitat. Associated with riparian habitat and conifer woodland (young plantations and open mature heather used for nest sites). Rare species present. Part NHA.	Retain existing unplanted blanket bog, lake and heath habitat. Follow SAC management guidelines. Avoid disturbance due to forestry operations during breeding season.	Follow SAC management guidelines. Ensure adequate age class distribution of conifer crop where hen harrier breeding sites are located.

Slieve Bloom Mountains, Offaly and Laois	Open blanket bog for hunting; pre- thicket plantation for nesting and hunting.	Follow Biodiversity Action Plan to ensure the availability of these habitats. Restructuring in the Slieve Bloom should ensure a continuous availability of pre-thicket plantation Any lowland winter roosts (where identified) will be protected	Follow SAC management guidelines. Ensure adequate age class distribution of conifer crop where hen harrier breeding sites are located.
Red Grouse			
Doon, Seltan, Tulleyvella, Co Cavan Co Leitrim	Extensive open Peatland	Boleybrack Red Grouse Habitat Management Project in association with NPWS	Enhance habitat of Red Grouse
Golden Plover			
Cuilcagh, (Commas, Bellavalley Lower, Altachallion) Cavan	Extensive area of bog, and heath. Associated with riparian habitat. Rare species present. Part SAC. *Note: Nests in short vegetation on bog or heath.*	Retain existing unplanted blanket bog and heath habitat. Follow SAC management guidelines. Retain woodland as natural reserve.	Protect habitat and follow SAC guidelines.
Common Wintergreen			
Knockdrin, Westmeath	Extensive wetland. Good quality lake with native and mixed broadleaf woodland habitat. Part OWS. Good flora and rare species. NHA.	Maintain water levels. Restore wetland habitat. Restore native woodland. Maintain mixed woodland. Control invasive non- native species.	None.
Balrath, Meath	Moderate sized mixed broadleaf woodland with rare plants. Part OWS. NHA.	Maintain mixed woodland habitat. Protect rare species.	Maintain fenced area.
Leisler's bat *Nyactilis leisleri* and other bat species (*Myotis nattereri*)			
Castletown and Carrick Wood, Offaly and Laois	Oak stands/mixed woodland Some of the breeding sites are not Coillte owned	Maintain, expand and develop broad-leaved feeding corridors	Conserve roosts and bat boxes

Red Squirrel			
Carn Park Jamestown Co Westmeath Knockbarron Co Offaly Derrycassan Woodville Co Longford Mote Park Co.Roscommon Emo Park Co Laois Ravensdale Co Louth	Cone species such as Scots Pine and Norway Spruce.	Retain some of these species where possible.	Maintain the habitat.
Great Spotted Woodpecker			
Erne Head, Co Longford	Mature Broadleaves	Retain broadleaves and standing deadwood	Maintain habitat.

Native and Mixed Woodland in Midlands BAU

Main Properties	Habitat Quality	Management Strategy 2006-2010	Issues to be Addressed
Oak-birch-holly Woodland (WN1)			
Higginstown, Westmeath	Extensive oak-birch-holly woodland over bog. Rare plants. Small area of oak-ash-hazel on mineral soils. OWS.	Retain existing oak woodland. Increase area of oak -ash woodland habitat.	Monitor site.
The Slip Co Laois	Small	Removal of cherry laurel Manage as natural reserves	Monitor site.
Oak-ash woodland rich in species (WN2)			
Blackwood, Offaly	Core area (70ha) of good native woodland	Strategy to restore to WN2	Restore to broadleaf woodland
Glinsk Co Offaly	Adjacent to alluvial woodland NHA. Good core areas; remainder needs restoring	Manage as broadleaf plantation	Removal of conifers over time
Wet willow-alder-ash woodland (WN6)			

Lough Rynn, Leitrim	Rare Flora	Restore Native Woodland	Control laurel/ Rhododendron
Dromore Lough (Bellamont, Dartrey and The Island), Cavan/Monaghan Border	Very extensive area of diverse habitats including lakes and wet woodland. Good diverse flora. OWS and NHA	Maintain mixed broadleaves. Increase native woodland. Control deer and non-native invasive species.	To control deer by annual deer cull.
Mixed Woodland (WD1)			
Erne Head, Longford	Good quality mixed woodland with some wet woodland. Associated with lake habitat. OWS. NHA.	Maintain existing mixed broadleaf woodland. Restore/increase native woodland. Await the re-introduction of the NWS grant.	Monitor site.
Balrath, Meath	Moderate sized mixed broadleaf woodland with rare plants. Part OWS. NHA.	Maintain mixed woodland habitat. Protect Wintergreen. Await the re-introduction of the NWS grant.	Monitor site.
Highly modified broadleaved Woodland (WD1)			
Dysart, Laois	Extensive mixed woodland	Maintain beech wood with native species	
Mixed broadleaved/conifer Woodland (WD2, WD3)			
Colt (42.9ha) Laois	Large, mature site with diverse native species and good structure	Increase the native element; maintain the good structure. Gradual removal of many of the non-native tree species	
Conifer Woodland (WD4)			
Cornagillagh, Leitrim	Good plant diversity	Restore native woodland	Control laurel/Rhododendron
Lough Rynn, Leitrim	Diverse habitats	Restore native woodland	Control laurel/ Rhododendron

Species

In terms of species, notable species identified in the BAUs forests are listed below

Notable Species	Notable Species	Notable Mammals
Daboecia cantabrica Lathraea squamaria	Platanthera bifolia Thelypteris limbosperma, Carex acuta	Lesser Horseshoe Bat (Rhinolophus hipposideros) Pine

Neottia nidus-avis Thelypteris palustris Listera cordata Saxifraga spathularis Rhynchospora fusca Rhamnus cathartica Eriocaulon aquaticum, Eriophorum gracile, Arctostaphylos uva-ursi,. Juniperus communis Erica Erigena	Cephalanthera longifolia Carex limosa Vaccinium oxycoccos Empetrum nigrum Vaccinium oxycoccos Cladium masiscus Carex lasiocarpa, Ranunculus lingua	Marten (Martes martes) Badger (Meles meles), Red Squirrel Birds, Hen Harrier Great Spotted Woodpecker

Appendix III – Recreation Facilities in the BAU

Location	Description
Rossmore Forest Park (Monaghan)	There are 4 signposted walks in Rossmore: The Nature Trail, The Lake Walk, The Castle Trail and the Access for All Trail. There is a picnic area in the Forest Park.
Senator Billy Fox Memorial Park (Monaghan)	The park consists mainly of old broadleaf woodland and a few open areas of lawn ideal for a picnic. The park has many natural walkways and a river running through it with a new bridge crossing at one point.
Mullaghmeen (Westmeath)	The area has an extensive network of way marked trails for varying levels of fitness including an Access for All Trail. There are a number of historical features in the forest including archaeological monuments, a Booley Hut and Flax pits.
Ravensdale Forest (Louth)	There are 3 way marked trails in the forest, the Tain Trail, the Ring of Gullion and the short but interesting Ravensdale Loop. The forest is rich in archaeological features such as the standing stones just a short detour off the Ravensdale Loop and has many interesting features such as bridges and old driving roads
Townley Hall (Louth)	There are two suggested trails in the wood ranging in length from 1 to 2 kms. There is a picnic area and car park facility.
Slieve Foye Woods (Louth)	There are a number of walks in the wood. Picnic areas in the forest offer panoramic views.
Dún A Rí Forest Park (Cavan)	There are 4 signposted walks in Dún a Rí: The Nature Trail, The Village Walk, The River Walk and the Access for All Trail. There is a picnic area on site.
Killykeen Forest Park (Cavan)	There are several trails and a picnic area in the forest park. A family friendly cycling trail has been completed in partnership with HNR (Harnessing Natural Resources) – a cross border funded agency.
Newcastle Wood (Longford)	There are 28km of walking routes throughout the mixed woodland. There are 4 trails including a multi access trail.
Derrycassan (Longford)	There is a picnic area and several viewing points by the lake. There are three suggested walks in the wood, the "Nature Trail", the "Walled Garden Walk" and the "Main Avenue Walk".
Derrycarne (Leitrim)	The woodland provides a very pleasant walk along the shore of Lough Boderg. The remains of an ice house can be seen along the shore. The trail passes through a variety of mixed woodland.
Burren (Cavan)	The Midlands BAU is home to the world's first cross- border UNESCO designated Geopark, encompassing the mountainous areas of West Cavan and Fermanagh. Burren occupies 124ha and within it are in excess of 30 tombs dating from Neolithic times to the early bronze age, old field systems and some 19th century artefacts. Most of the present forest was planted in mid 1950's and helped to protect the archaeological and geological features of the site. Burren is a 'rocky' relict landscape of significant archaeological and cultural importance. The site contains monuments, habitation sites and fields surviving from prehistoric times and some are older than the pyramids There is an interpretative centre and a network of roads with paths which offer scenic views of the surrounding landscape in addition to the archaeological and geological resources.
Durrow Abbey (Offaly)	Car park and looped walk through a variety of mixed woodland adjacent to Durrow Abbey.

Location	Description
Garryhinch (Offaly)	Garryhinch Forest is part of the old Warburton Estate. The woodlands consist of mixed conifer and broadleaf and lies on both sides of the river Barrow. There is a picnic area and a car parking facility.
Glasderry Wood (Offaly)	This wood, part of an old woodland site, was formerly part of the Lloyd estate and was acquired by the State in the late 1950's. It is approx 100 metres above sea level. A feature of this site is Lough Roe, an artificial lake. This lake was created for the estate to ensure a plentiful supply of water for the domestic needs, the gardens and recreational needs of the Lloyd family who lived in nearby Gloster House. There are a number of viewing points around the lake on this walk. While there are no way marked trails here, woodland and lakeside walk. The forest road and paths do provide a very pleasant.
Glenafelly Forest Recreation Area (Offaly)	This recreation area takes visitors into the more remote parts of the Slieve Bloom Mountains and allows walkers to explore the geology and former uses of this upland area.
Glenregan Forest Recreation Area (Offaly)	The forest envelopes both sides of the Camcor valley and offers great views over the valley onto west Offaly and the River Shannon. There is an extensive network of forest roads for walking and trekking.
Golden Grove (Offaly)	This is part of an old woodland site on mineral soil over limestone. From the car park, there is a beautiful view of the countryside. The main tree species in this wood are Beech, Scot's Pine, Ash and Norway Spruce. There is an abundance of animal and birdlife here. The most striking aspect of the flora is the profusion of bluebells that carpet a large area of the woodland in the spring. The Golden Grove River is to the south-east of the car park. While there are no waymarked trails in Orange Hill Wood, the loop of forest road and paths does provide a very pleasant walk.
Knockbarron Wood (Offaly)	This site is an area of old woodland with much ecological interest at whatever time of year you visit. There is an ecological walk with notable features of a Turlough and Eskers.
Brittas (Laois)	Brittas is adjacent to the village of Clonaslee, Co. Laois at the foothills of the Slieve Bloom mountains. The first section of the Brittas Loop follows the path of the River Clodiagh through mature stands of Douglas fir. The trail passes by Brittas lake and car park. The lake is a very popular spot for picnics and quiet relaxation as it is very secluded. There is a stand of large mature Scots pine on the lakeside which is the ideal backdrop to the lake.
Carrick Wood (Laois)	This is a reasonably small site with a picnic area and forest walk. The beautiful broadleaf woodland features a prominent local landmark, the 18th century Spire. It is set on a high point in the wood and has a striking architectural presence. It can be seen from several miles away. Restoration work on the Spire was completed in 2005. The main tree species are beech with some Scots pine and European larch.
Glenbarrow (Laois)	Glenbarrow is one of the most scenic parts of the Slieve Bloom area with its waterfalls and steep valley. The area has four way-marked marked trails with car parking facilities.

Location	Description
Monicknew (Laois)	The site is a trailhead for a section of the Slieve Bloom Way (a National Waymarked Way) and also has a number of other walking and hiking trails. Adjacent to the Slieve Bloom Way trailhead is Monicknew Bridge through which the Glen river flows. Pleasant picnic sites adjacent to stream with car parking facility.
The Cut – Glendine (Laois)	The Cut is located at an elevation of 430 metres in the Slieve Bloom Mountains. Extensive viewing from car park.
Deerpark, Virginia, Co Cavan	Forest trails including a heritage walk (multi-access). Car parking facilities.
Black Island, Co Monaghan	This is an island of 50 ha adjacent to Castleblaney. There is a looped walk around the island and car parking facilities.
Castle Lake, Bailieborough, Co Cavan	Looped walk around lake and car parking facilities.
Mullrick, Co Longford	Car park fishing facilities and lake side walk.
Summerhill, Co Meath	Looped walk with car park.
Littlewood, Co Meath	Looped biodiversity walk with car park.
Bawnboy, Co Cavan	Looped walk with car park.
Emo Park, Co Laois	Multi forest walks. Adjacent to Emo Court.
Oughaval, Co. Laois	Car park, picnic area, looped walks
Dunmore, Co. Laois	Car park, 'Leafy Loop Walk' along River Nore
Kellavil, Co. Laois	Lakeside walk. Fishing.
Glenfarne Co. Leitrim	Picnic Site, Boat launch, Walking Trails, cycle trail, Viewing Points, fishing platforms

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	Notifiable accidents	number

Appendix V – Forest Details

Forest	Forest Gross Area (ha)	Clearfell Volume m^3					Thinning Volume m^3					Clearfell Area (ha)				
		2021	2022	2023	2024	2025	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
CN01 - Macnean East	583	7,579	422	6,302	3,678	6,142	46	0	1,570	1,248	2,848	14	1	13	9	10
CN02 - Glangevlin	1,010	0	2,770	1,639	1,646	3,867	2,879	1,004	388	3,907	2,048	0	7	4	3	8
CN03 - Swanlinbar	1,019	20,774	221	7,516	7,413	2,137	2,280	1,893	2,589	1,572	1,733	54	1	18	16	6
CN04 - Bawnboy	1,734	18,895	12,843	10,752	13,419	19,707	5,013	5,659	11,017	7,466	5,162	43	36	33	41	57
CN05 - Cavan	1,459	11,190	8,519	5,526	10,423	13,318	789	1,390	1,415	734	4,245	26	17	12	18	23
CN06 - Cootehill	633	9,162	1,875	7,099	8,059	5,402	213	2,243	176	929	679	18	4	12	14	12
CN07 - Baillieboro	342	4,761	633	2,141	0	4,508	0	0	0	842	106	13	1	5	0	11
CN08 - Dunari	211	0	2,479	0	0	0	75	0	0	0	128	0	5	0	0	0
CN09 - Virginia	431	288	82	0	476	330	0	0	0	472	0	0	0	0	3	3
CN10 - Foxfield	123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LD01 - Gowna	316	1,067	0	0	311	4,356	0	328	0	0	0	2	0	0	0	7
LD02 - Ballinalee	1,556	3,355	4,204	0	2,490	3,780	467	524	604	593	644	6	8	0	7	5
LD03 - Ballymahon	1,564	4,633	2,521	7,546	3,825	4,057	1,687	1,394	397	365	1,108	12	6	16	13	7
LH01 - Dundalk	1,572	13,318	17,990	9,998	14,897	11,167	347	753	257	157	861	23	44	18	28	20
LH02 - Drogheda	133	0	1,400	0	2,475	772	0	0	0	0	0	0	3	0	3	1
LM03 - Kiltyclogher	1,409	14,788	7,252	24,036	6,894	5,502	2,501	1,414	2,871	2,053	1,391	33	15	46	10	11
LM06 - Killargy	3,020	2,066	12,287	17,863	1,524	29,476	5,690	3,643	3,901	7,441	7,554	4	25	42	3	63
LM07 - Macnean West	812	7,969	11,958	1,308	16,606	3,004	451	625	910	783	702	14	18	2	27	4
LM08 - Lough Allen	4,092	26,641	42,192	9,221	39,090	29,349	10,458	6,879	8,768	3,454	8,624	62	103	22	95	70
LM09 - Garadice	2,148	8,356	5,128	13,633	2,617	12,853	1,458	3,489	144	1,378	2,571	16	11	29	5	21
LM10 - Mohill	613	5,788	186	7,507	12,815	3,904	3,326	1,513	2,398	1,858	804	11	0	17	29	12
LM11 - Newtowngore	299	0	0	220	0	11,445	466	3,319	2,809	1,000	1,046	0	0	0	0	52
LM12 - Crummy	463	3,654	795	3,565	1,545	14,300	1,240	5,158	4,851	1,809	1,096	9	4	12	3	41

LS01 - Clonaslee	2,113	7,298	7,390	997	30,428	13,312	2,875	4,684	3,597	2,646	4,176	13	15	3	68	29
LS02 - Emo Park	603	568	519	381	0	0	741	0	652	0	0	1	1	1	0	0
LS03 - Derries	618	10,120	1,875	2,401	5,404	0	0	0	0	0	0	22	4	6	12	0
LS04 - Straboe	437	0	324	74	1,531	6	0	0	0	0	0	0	1	0	3	0
LS05 - Ballyfin	181	553	4,159	0	0	1,883	0	237	0	0	0	1	13	0	0	3
LS06 - Glenbarrow	1,622	6,130	1,274	29,263	4,640	21,556	2,412	905	2,809	6,714	2,012	16	2	80	12	40
LS07 - Tinnahinch	1,008	305	21,664	2,054	5,982	0	0	0	0	0	0	1	44	4	11	0
LS08 - Baunreagh	2,006	28,214	7,003	10,987	57,166	35,668	1,607	1,453	861	6,497	2,818	49	13	22	89	52
LS09 - Glendine	2,511	22,822	26,089	19,647	35,401	19,430	9,540	5,142	6,562	8,050	5,098	48	49	40	70	38
LS10 - Lacka	496	0	857	2,871	1,317	943	1,265	608	679	0	1,269	0	2	5	4	1
LS11 - Mountrath	239	0	0	1,856	4,859	961	1,030	0	0	0	0	0	0	6	18	2
LS12 - Portlaoise	645	2,239	2,303	8,567	1,014	2,074	450	61	38	474	468	5	4	14	3	4
LS13 - Cullenagh	1,262	6,512	13,141	23,757	13,151	10,072	2,309	2,009	1,295	1,714	4,581	12	24	49	23	25
LS14 - Stradbally	468	340	510	2,175	5,082	601	0	131	0	481	656	1	1	5	11	2
LS15 - Rossmore	1,098	13,053	0	8,790	264	0	1,319	2,061	1,807	2,116	5,914	26	0	24	1	0
LS16 - Durrow	776	115	0	3,142	0	0	534	328	0	805	0	0	0	6	0	0
LS17 - Erril	439	8,345	6,535	1,783	0	653	0	0	0	0	0	19	14	4	0	2
MH01 - Nobber	157	0	0	0	334	852	0	0	788	105	0	0	0	0	1	1
MH02 - Kells	308	1,331	314	6,675	48	2,357	0	0	214	0	70	2	1	10	0	3
MH03 - Navan	430	0	0	1,013	55	362	0	0	0	0	0	0	0	2	0	0
MH04 - Summerhill	539	933	0	5,323	1,318	11	0	0	0	0	0	2	0	11	3	0
MN01 - Bragan	1,948	4,583	8,809	3,747	6,021	5,817	2,396	2,623	3,150	4,438	4,906	7	17	7	22	14
MN02 - Clones	644	1,861	2,788	1,909	3	22,085	1,467	2,215	832	377	486	6	7	5	0	54
MN03 - Monaghan	726	854	6,188	330	3,950	428	0	72	0	278	2,022	2	12	1	5	1
OY01 - Ballydaly	2,208	2,993	16,187	29,236	6,806	6,504	0	1,131	229	543	142	6	33	57	11	13
OY02 - Derrycoffey	2,991	4,688	3,549	18,580	5,273	24,449	548	2,128	371	169	0	13	7	39	13	52
OY03 - Garryhinch	301	5,491	1,382	136	0	4,655	525	0	0	0	0	9	3	0	0	10
OY04 - Killeigh	234	1,869	0	0	0	1,185	111	0	305	0	0	4	0	0	0	1

OY05 - Knockbarron	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OY06 - Birr	283	1,503	0	4,999	0	3,395	0	0	0	0	0	4	0	10	0	9
OY07 - Kinnitty	1,489	19,958	17,064	8,713	14,510	16,317	545	119	1,463	473	722	37	32	16	29	29
OY08 - Glenafelly	1,088	14,575	43,367	22,344	13,126	4,755	957	566	956	54	629	29	84	42	24	6
OY09 - Shinrone	765	7,705	7,376	14,623	6,247	707	0	182	0	0	1,118	16	16	30	14	2
RN04 - Frenchpark	973	9,052	18,473	13,257	1,824	1,124	709	1,380	272	635	1,238	15	38	28	2	3
RN05 - Carrowbehy	1,110	4,888	3,408	930	2,042	0	1,769	1,206	1,478	249	0	11	7	3	5	0
RN06 - Derrylahan	549	1,241	0	0	0	0	1,673	2,743	1,999	1,881	1,533	2	0	0	0	0
RN07 - Stonepark	630	2,900	1,344	2,018	169	661	599	268	467	1,454	1,248	7	3	5	1	3
RN08 - Loughglinn	1,211	3,098	5,687	4,770	8,932	1,344	2,629	1,977	1,714	3,207	329	6	12	9	26	2
RN09 - Doughill	1,351	5,993	15,016	8,296	8,959	2,894	3,015	6,060	5,026	3,718	971	20	38	18	20	8
RN11 - Dunamon	742	6,786	3,521	0	0	6,793	1,258	573	1,234	335	186	22	6	0	0	11
RN12 - Correen	411	3,047	0	183	0	0	57	1,234	267	1,026	458	6	0	0	0	0
RN13 - Kilronan	450	4,742	0	1,483	1,277	0	0	393	1,649	393	163	8	0	4	2	0
RN14 - Oak Port	1,085	4,051	7,533	3,503	1,346	2,816	816	1,932	1,840	1,539	1,114	10	14	6	2	4
RN15 - Rockville	519	8,451	437	5,198	5,140	1,856	3	0	182	0	599	18	1	11	9	3
RN16 - Mote Park	539	3,649	361	4,858	8,582	328	1,402	1,484	670	0	0	7	1	7	12	2
WH01 - Castlepollard	1,610	2,282	8,173	384	2,628	1,197	0	790	0	0	0	5	18	1	3	1
WH02 - Ballynafid	1,282	3,146	15,050	7,379	7,366	10,082	128	126	13	0	113	6	27	12	11	15
WH03 - Downs	1,225	7,220	4,853	2,366	3,306	5,312	0	475	0	0	0	12	9	5	6	12
WH04 - Lough Ennell	614	737	0	2,091	0	732	0	0	0	0	0	1	0	3	0	1
WH05 - Ballymore	776	2,205	2,266	686	5,098	834	0	0	0	0	0	4	5	2	9	1

Appendix VI – BAU Map