



Mid-West Five Year Forest Plan 2021-2025

Foreword

I have great pleasure in publishing Coillte's Mid-West 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, and to deliver the multiple benefits from our forests for climate, nature, wood and people. A key part of our business is sharing our plans with our neighbours, communities and stakeholders and endeavouring to incorporate their views wherever possible.

The topics covered in the BAU Five Year Forest Plan include:

Forest Planning for Climate, Nature, Wood and People

- 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
- Community facilities and benefits
- Recreational and tourism infrastructure and partnerships
- Access to our forests
- Environmental enhancement measures such as biodiversity and nature conservation
- Sustainable Forest Management
- Long Term Retention of Trees
- Low impact silvicultural systems
- Water quality
- Forest design
- Use of chemicals



Mark O'Loughlin,
Mid-West BAU Manager.

Statement of Compliance with Principles of Sustainable Forest 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 Council¹ (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.



Mark O'Loughlin

Mid-West BAU Manager

¹ FSC[®] licence code FSC[®]- C005714

² PEFC licence code PEFC/17-23-042

Table of Contents

1.	Coillte and our Five Year Forest Plans	5
2.	Mid West BAU	57
3.	The Mid West Five Year Forest Plan	266
4.	Sustainable Forest Management Policies and Proposals	366
	Appendix I - Summary of Archaeological Sites in Mid West BAU	44
	Appendix II - Habitats and Species in Mid West BAU.....	47
	Appendix III – Recreation Facilities in the BAU.....	52
	Appendix IV – Monitoring	53
	Appendix V – Forest Details	55
	Appendix VI – Catchments and Sub-Catchments in BAU 2.....	57
	Appendix VII - BAU 2 Map.....	60

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 deliver the multiple benefits from our forests for climate, nature, wood and people 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 1963-1986. 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, Food and the Marine. 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 (insert link to Appendix II).

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 site, 12 forest parks, six dedicated mountain bike centres and over 3,000 km of waymarked walking trails 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 80% of its electricity consumption from

renewable sources². Coillte has applied for and recently achieved ISO 50001 Certification. This also provides a framework for the Coillte Group to deliver on the Government's planned energy reduction targets to 2030; namely a 51% carbon reduction and 50% energy efficiency improvement. Coillte has successfully completed its Stage Two ISO 50001:2018 Certification Audit of its Energy Management Systems (EnMS) demonstrating that Coillte is compliant with the requirements of the Standard.

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 Ireland's reliance on fossil fuel imports, reducing our greenhouse gas emissions and improving domestic fuel security are key pillars for developing a green economy.

In November 2021, Coillte and ESB unveiled a new joint venture company, FuturEnergy Ireland (FEI). The aim of FuturEnergy Ireland is to materially help the country deliver on its green energy targets, achieving net zero emissions by 2050, as set out in the Government's Climate Action Plan and legislated for under the Climate Action Act. The Coillte-ESB joint venture is looking to actively drive Ireland's transition to a low carbon economy by developing 1GW of wind energy projects by 2030, enough to power more than 500,000 homes.

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 through FEI, and as a landowner, 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 through FEI 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.
- Conducting our business in an environmentally friendly and responsible 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 FEI renewable energy projects must afford appropriate protection to the social, environmental and economic pillars of sustainability. FEI's aim is to develop best-in-class wind farms with the support of local communities thereby enabling Ireland, and its people, to combat climate change.

² <https://www.gov.ie/en/publication/774e2-national-development-plan-2021-2030/>

FEI and other third party developers will 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 FEI provide a Community Benefit mechanism as part of the project.

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. For any queries relating to the development of FEI or third party projects on Coillte lands we can be contacted at lsinfo@coillte.ie.

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 SEAI Energy in Ireland 2020 Report, wind generation accounted for 32% of all electricity generated in 2019³. 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"⁴ to meeting Ireland's energy needs.

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 will continue to assess potential opportunities for other renewable technologies on the Coillte estate such as solar energy and energy storage along with any other emerging technologies.

1.3 Coillte's Resource Management Approach

In recent years, 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 to deliver the benefits from our forests for climate, nature, wood and people. More recently this project moved into implementation phase and, after a successful pilot programme, has now been adopted as the primary planning tool for Coillte forest.

³ <https://www.seai.ie/publications/Energy-in-Ireland-2020.pdf>

⁴ <https://www.gov.ie/en/publication/550df-the-white-paper-irelands-transition-to-a-low-carbon-energy-future-2015-2030/>

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 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, constraints and opportunities are reflected into the model and form the basis of 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 tree harvest activity levels are publicly available to view on our online 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 national forestry sector employing around 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. In addition, Coillte recognises the important and unique role that its trees and forests can play in helping to address climate change.

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 have multiple uses and deliver multiple benefits and 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 Coillte's BioClass programme along with recreation partnerships like the Dublin Mountains Partnership and the Dublin Mountains Makeover Project are showcase projects that demonstrate best practice in natural resource management and managing forests to deliver benefits for climate, nature and people.

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, productive 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 Irish forest wood also lock carbon away, which means that using Irish 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. A recent report shows that, on average, for every cubic metre of local Irish wood that is harvested, to substitute more carbon intensive building materials, we save on average 0.77 tonnes of CO₂ equivalents. Currently about five million cubic metres of wood products are produced on the island of Ireland per year, and this means that if we can avoid using more 'carbon heavy' products there can be an enormous benefit of 3.7 million tonnes of CO₂ equivalents each year!

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

1. As a carbon sink: trees absorb carbon from the atmosphere.
2. As a carbon store: Carbon is stored in timber products after harvesting.
3. As a carbon substitute: Timber products can substitute carbon heavy products like concrete and steel.

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

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, constraints and opportunities

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 are key to contributing to meeting these challenges and constraints.

1.5.1 Statutory and non-Statutory regulation and certification of forestry

	Response
National Forestry Programme 2023-2027 The Department is currently preparing for the development of the next forestry programme. The current National Forestry Programme 2014-2020 is 100% exchequer funded, comprises an investment of approximately €482 million over its lifetime, and received approval to be	In response to the National Forestry Programme: • Coillte will manage its forests and lands to increase the amount of carbon stored. • Coillte will set and meet targets for the national timber supply and continue to promote the use of wood and wood products. • Coillte will seek to increase the recreational offering of its forests.

extended to the end of 2022 by the European Commission, in accordance with CAP and State aid transition requirements. A new National Forestry Programme is therefore required from January 2023 for a period to the end of 2027.	• Coillte will increase the area of its forests managed 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, and is committed to increasing this overall total. 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 (WFD) 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. European Union Member States implement the Water Framework Directive through River Basin Management Plans (RBMPs) in six-year cycles. This process allows for assessment, planning, implementation, and review at regular intervals. Ireland's approach to water quality management has developed over the first and second RBMPs and will continue to evolve into the third cycle RBMP 2022 to 2027 to protect and improve water quality nationally and locally. The draft River Basin Management Plans for 2022-2027 were put out to public consultation for 6 months, which ended on the 31st March 2022. Following	National Surface and Drinking Water Regulations have been enacted since 2007, including subsequent amendments, 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 (WFD). 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 Programmes of Measures 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 standards, including all relevant regulations and requirements, and the Forest Management Standards for Ireland (National, FSC® and PEFC). To further progress the implementation of the goals of the WFD, Coillte is an integral member of the National Technical

consideration of this feedback, it is envisaged the finalised plans will be issued in Q4 2022.	Implementation Group for WFD, regional WFD Operational Committees and the Blue Dot Steering Committee.
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 is now widespread across the island of Ireland.

Coillte liaise closely with Forest Service with regard to significant potential threats to our 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.

There are four main elements to our Plant Health strategy:

1. Survey/Monitoring

Coillte carries out surveys and health monitoring in order to make an early detection of a major pest or disease outbreak.

BAU surveys

Forest health BAU monitoring is conducted annually in Coillte properties since 2007 with samples sent to the Coillte laboratories for follow up identifications. The process was reviewed and updated in 2019 and the information is now collected directly in the field. BAU annual health surveys are carried out using a standardised forest health assessment form which asks the observer to record any details of ill health observed in the property under survey. The form directs the observer to note any unusual signs and symptoms of ill health, what part of the tree they occur in and what the likely cause may be, including both biotic and abiotic sources.

Coillte supports the Forest Service in carrying out all mandatory surveys required under legislation and specific surveys necessary to support Protected Zone status. Coillte has added seventeen new observation sites to assist in the national monitoring for the bark beetle *Ips typographus*. A recent review was carried out to ensure that extra traps were placed at locations close to possible points of entry for bark beetles.

Forest health observations are also recorded during daily forest operations and noted in the Health Survey form and followed up through sampling where required. Inventory staff provide information on forest health through aerial or remote sensing carried out through their daily work.

2. Education and Training

Pest and disease staff training days are held in conjunction with the Forest Service Inspectors. These training days increase staff awareness of risks from pests and disease. Specific training is carried out in relation to particular diseases such as *P.ramorum*, *H.fraxinea*, (Ash dieback).

Staff awareness information notes are issued in the event of a significant finding that is a potential serious threat such as *Ips typographus* findings in Kent 2019 and 2021.

3. Notification and Communication Procedures

Coillte have a clear plan in place in the event of an insect pest or disease outbreak in the forest. An action plan is developed on how to eradicate or contain the infestation or infection and a communication plan is prepared. Following a suspected outbreak of a significant pest or disease the Outbreak Management Group (OMG) in Coillte are notified and a meeting is convened. The group is made up of the key personnel to deal with the specific outbreak. The OMG meet as required to discuss threats that arise through our outward horizon scanning.

4. Outbreak management

An action plan is developed to identify the extent of the outbreak (via specific surveys as required, assessment of the impact of the outbreak, sanitation or containment protocols, monitoring etc.) In the case of an insect pest or disease outbreak a specific sanitation plan is immediately prepared. Measures are put in place to ensure the infestation or infection outbreak is managed properly and ends quickly.

Sanitation action plans are guided by, agreed and discussed with the Forest prior to implementation. (The Forest Service may inspect sites pre and post sanitation actions being taken.)

The supporting elements to the strategy plan are -

Diagnostic services

The laboratory provides technical support to pest and disease samples. Samples are examined under the microscope for the presence of insect pests or fungal pathogens. Sample pieces are plated out on agar growth media and plant pathogens are isolated and identified from the diseased plant material.

Knowledge transfer and Collaboration

Coillte actively cooperates with other organisations within Ireland and abroad in relation to risk anticipation and is involved in many scientific projects involving different institutions.

Hylobius working group

This group provides a forum for communication and sharing of best practice and key issues associated with *Hylobius* management. (The group represents England, Scotland, Wales, Northern Ireland, Ireland).

This group collaborates, between countries, and actively progresses elements of *Hylobius* management to provide cost effective and sustainable protection to planting stock.

1.5.3 Societal Expectations of Forestry

Irish society, the wider public and local communities continue to remain engaged with our forest management:

- A greater awareness of environmental issues continues to grow amongst the public and local communities.
- Coillte has responded to an increased appreciation of for example, landscape design and of the place of forests in the landscape with policies and practices in relation to forest design and with new approaches to tree felling decisions.
- 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. Coillte has an ambition to increase its current recreation offerings nationwide.

1.5.4 Dumping / Litter Management

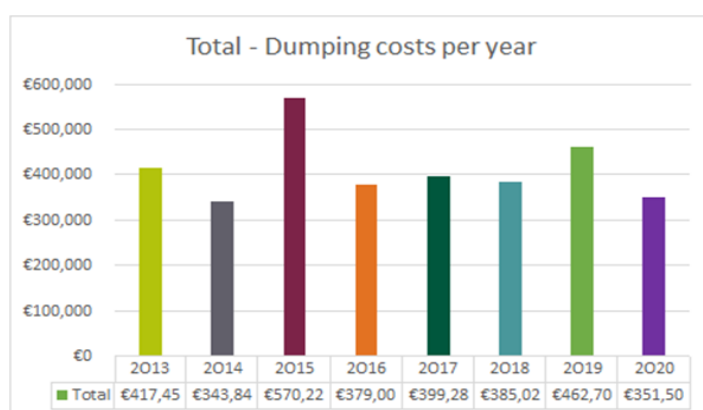
Indiscriminate, illegal dumping is a major problem for Coillte. The large extent of Coillte's estate makes it a target with regard to the illegal disposal of waste. Coillte does not have any control over indiscriminate dumping of rubbish by persons unknown but works closely with Co Councils to seek prosecutions and enforcements where possible.

Coillte manages 440,000 hectares of lands nationwide, equivalent to approximately 7% of total land of Ireland. It has been the practice of the company and its predecessor since the 1970s to operate an Open Forest Policy, whereby the general public are permitted and welcome to use forest lands for non-commercial, informal, recreational purposes. Formal permission is not required in such cases but access is subject to visitors taking due care for their safety, having consideration for other forest users and respecting the nature of Coillte's operations and following the principles of Leave no Trace.

However, the problem of the illegal dumping / fly tipping on Coillte's estate persists. Coillte endeavours to dispose of the waste as promptly as possible, in a controlled way from both a safety and environmental perspective. The intensity of dumping presents a significant financial and management challenge for Coillte. The fly tipping affects the beauty of the countryside and forestry. It is unsightly for local residents and visitors alike.

It is Coillte's policy to try to prevent illegal dumping in its forest estate. This is achieved by:

- Keeping forest entrances continuously locked at inactive sites, where appropriate,
- Locking gates outside work hours on active sites,
- Staff keeping vigilant for dumping during visits to forest properties,
- Periodic CCTV surveillance of dumping black spots – to date we have had only limited success in this area , but will be trailing new equipment in the near future in some of the black spots,
- Assisting the Gardai and Co Councils in prosecuting those caught dumping,
- Partnering with anti-dumping initiatives such as the PURE Project,
- Raising awareness of anti-littering with our partners Leave no Trace Ireland,
- Working with local NGO's and community groups.



1.5.5 Forest Fires

Forest fires pose a serious health and safety risk to the public and to people working in the forest sector. They are very difficult to control and put firefighters and forest personnel at great risk in their efforts to extinguish them. They cause widespread ecological and environmental damage to wildlife and to habitats that can take years to recover from especially at this time of the year when many birds and other animals are raising their young. They also cost significant amounts of money to Coillte and private forest owners; in the costs of operations to control the blaze, in the loss of the value of the standing timber and the additional costs in managing and replanting the burnt areas.

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:

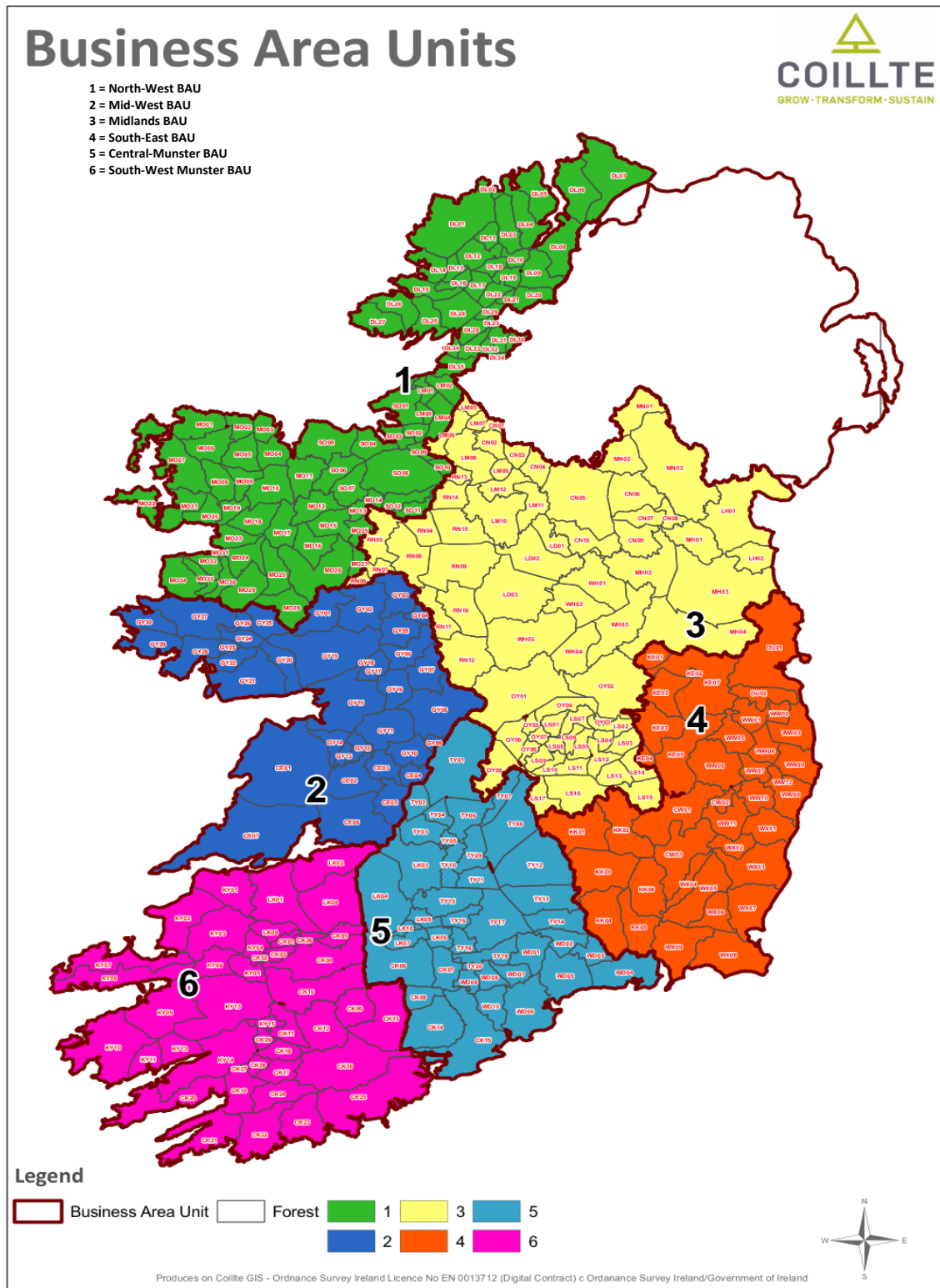
- Surveillance of fire
- Transportation of staff and equipment
- Fire fighting

Coillte ask for vigilance from the public in relation to Forest fires and to act 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, except in designated areas

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. These plans refer to the incoming planning cycle 2021-2025, which were delayed due to the Covid-19 pandemic.

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 the health crisis in 2020 and 2021, BAU consultation meetings could not be held. Plans are underway to host consultation meetings during 2022 (in line with government health advice).*

1.7 Summary on the Various Levels of Coillte

Forest Management Planning

The **BAU Five Year 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 five 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 Five Year Plan process.

An Activity Pack is built when site-level planning is initiated for activity within each Harvest Unit and describes how the plan will be implemented for the operation managers, workers and contractors. Social and environmental impacts, including consultation, are assessed through Coillte's environmental impact appraisal process and measures are written into 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 personnel) required.

The BAU is the Forest Management Unit and is built from smaller spatial entities, the largest of these being the Forest Unit. Key activity levels within each Forest Unit are further broken down in [Appendix V](#). Further to the appendix, a Webmap is publicly available online to view areas with proposed tree felling in the review period. [Click here](#) to access the Webmap.

2. About the Mid-West BAU

2.1 The Mid-West BAU

All BAU's play important roles in achieving Coillte targets and objectives and delivering the multiple benefits from our forests for climate, nature, wood and people. BAU 2 covers all areas of County Galway and County Clare. The BAU consists of 69,939 ha (7.45% of Coillte land in the BAU area) of a variety of habitats including productive lands, raised and blanket bog, lakes and open space.

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

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

Soil types of our forests comprise mainly of peat (69%), gleys (18%), podsols (7%), brown earth (6%). There is also small areas of marl.

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

The largest biodiversity project to be undertaken to date in this BAU was the Raised Bog Restoration Project. This project was jointly funded by DG- Environment and Coillte. Project number was LIFE 04 NAT/IE/00121 and focused on the restoration of 12 raised bog sites within the EU Natura 2000 network, with a total national project area of 571 Hectares. The raised bogs sites were selected on the basis of being within Special Areas of Conservation (SACs) as well as their potential for restoration. Ireland still retains some of the best examples of raised bog sites in Europe and many fine examples occur within the BAU.

In a continuance of the policy of raised bog restoration, the BAU will be focusing on future potential sites and seeking funding to support such worthwhile projects.

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

There is an extensive spread of lakes and river catchments located within the BAU. The main lakes being Lough Corrib, Orid Lough, Lough Shindilla, Lough Bofin, Ross Lake, Lough Derg, Lough Graney, Doolough, Lough Cutra and Lough Rea.

Within the rural areas of the BAU there has been a decrease in population of at least 50% since 1926. The area falls into the Western region and has attracted significant attention in the National Development Plan due to economic and structural disadvantage. The Connemara part of the area contains Ireland's largest Gaeltacht area.

Coillte will continue to work in collaboration with County Councils and other development agencies to contribute to the development of projects that have the potential to deliver strategic benefit to the area e.g. job creation, recreation, culture and heritage.

2.2 Forests and Forest Products in the Mid-West BAU

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

During the 2016-2020 period, the BAU produced approximately 1.68 million cubic metres of wood. This wood was primarily sold to our customers in ECC, Murray's, Glennons, Woodfarm, Connolly, Curran, Laois, and Coolrain.

Pulp wood is supplied to 2 of our own boardmills - Medite in Clonmel and Smartply in Waterford.

Forest Products

Private timber

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

Farm Partnerships

This scheme is where Coillte and a farmer form a joint venture by agreement whereby Coillte plants and manages the plantation for the life of the crop; ownership of the land remains with the farmer. Currently we have 130 farm partnerships within the BAU and we will continue to support our existing partners.

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

Coillte has an open forest policy and welcomes all walkers to visit its forests according to the principles of Leave no Trace. Coillte has a long association with the communities, clubs and individuals who use our extensive forest network. The development of recreational facilities and activities in line with Coillte's Recreation policy are some of the many ways Coillte can contribute towards the "public good" value of the estate. This can be achieved through partnerships, permits and ongoing relationships that respects the sustainable use of our forests for future generations. The BAU recreational activities contribute to the social, environmental and economic life within the BAU boundaries.

Many Coillte forests in this BAU are expansive and offer multiple activities such as walking, hiking, multi access and cycling on new bike trails, fishing, picnicking, watching wildlife, canoeing, field archaeology or simple enjoyment of the outdoors. A number of submissions were made from a variety of local organisations as part of the consultation on the BAU Five Year Forest Plan 2021-2025. The BAU team engage with these organisations and consider all submissions for the development of recreational areas across the BAU. All submissions will need to be carefully assessed to determine the potential usage of any such area and the availability of funding (internally or externally) for the development of any infrastructure.

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

Portumna Forest Park is situated on the northern shore of Lough Derg. It strands 436 Hectares of Coillte property and provides an ideal setting for forest and lake side walks with observation points and a viewing tower. Within the site are the remains of a Cistercian Abbey dating to 15th Century. Over the past three years with 15 Km of surfaced trails suitable for family cycling and walking, have been upgraded with the help of funding from Fáilte Ireland. The multi access walkway which was developed in the park some years ago, was also linked to the town of Portumna by upgrading one of the existing roads within the park, with funding from Galway County Council and the local community. The facilities also include parking for 60 cars and toilets. Coillte are part of the Portumna 2030 vision in partnership with Galway County Council, Waterways Ireland, Fáilte Ireland, OPW where the group plan to revitalize Portumna as a major tourism destination in the future.

Coillte have been at the forefront in developing Ireland's first off-road cycle trails over recent years. The Derroua Mountain Bike Trail in North Connemara is another significant amenity in the BAU which has become very popular and is attracting record numbers of bikers.

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

The BAU has also entered in to a number of partnership arrangements that have provided recreational facilities for local communities and restored old buildings. Examples of this would be the Walled Garden in Mountbellew, Playground in Cratloe and the recreational facilities at Cong/Clonbur Woods

Coillte actively engages with local communities and other partners to resource the management and maintenance of this valuable recreational offering. A number of submissions were made from a variety of local organisations as part of the consultation on the BAU Strategic Plan 2021-2025. The BAU team engage with these organisations and consider all submissions for the development of recreational areas across the BAU. All submissions will need to be

carefully assessed to determine the potential usage of any such area and the availability of funding (internally or externally) for the development of any infrastructure.

2.4 Cultural and Archaeological Heritage in the Mid-West BAU

Coillte is aware of some 262 (monuments) archaeological sites and sites of cultural significance in its landholdings in the Mid-West BAU. These monuments include megalithic tombs of different kinds, Ringforts, Cashels and other enclosures and crannogs. A summary of archaeological sites in the BAU is provided in Appendix 1.

With support and advice from the NPWS, the National Monuments Service and National Inventory of Architectural Heritage, Department of Arts, Heritage & the Gaeltacht, Coillte has developed a Code of Practice in order to protect this archaeological and cultural heritage.

Many historical land acquisitions contain farmsteads and features representing rural life in the 19th and early 20th century such as vernacular built heritage, traditional field boundaries, dry- stone walls, gate houses, cultural landscape features and historic farming patterns. 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, heritage and historical value and a plan implemented for their preservation.

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

2.5 Coillte Biodiversity within the Mid-West BAU

Habitats and features of biodiversity value on the Coillte estate are identified, mapped and protected during forest operations. The table below shows that approx. 14,094 ha of Coillte land in the Mid-West 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 biodiversity: 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 ecological value as identified and mapped by ecologists	10,602
Biodiversity Features	Small features (usually <2ha) that add biodiversity value to the forest stand, protected during forest operations	1,415
Riparian Buffer Strips	Strips of land that adjoin streams, rivers and lakes, and are managed for their protection.	3,167

(*Overlap occurs between categories)

Biodiversity Areas

Biodiversity areas are essentially areas that contains habitats and species of nature conservation value that occur on the Coillte estate. They vary widely in terms of the habitat types present and their ecological value. Between 2001 and 2005, Coillte undertook a major ecological survey, aimed at identifying habitats throughout the estate that had some particular value for nature conservation. A preliminary review of Coillte's forest inventory, along with the extensive knowledge of Coillte's foresters, revealed the location of potential biodiversity areas within a broad range of site types. Ecologists surveyed the potential biodiversity areas, and assessed their habitat value, based on standard scientific principles. Following consultation with Coillte forest managers, most of the sites identified in this survey were adopted as Coillte biodiversity areas. Also recorded are riparian buffers, which are

mapped along streams and rivers and converted to open habitat and/or scrub, in order to protect water quality. The biodiversity areas were incorporated into the forest management planning for the BAUs.

Coillte have since developed BioClass, a science-based procedure for assessing the ecological value of biodiversity areas within the Coillte estate. This system categorises biodiversity areas into four BioClasses. These range from BioClass 1, the areas of highest ecological value, to BioClass 4, areas that currently have low-to-moderate value but may have potential to develop in future into habitats of high ecological value. In general, sites that most closely resemble natural habitats have the highest value for biodiversity. Based on a review of biodiversity indicators, published in the scientific literature, we have worked with experienced consultant ecologists to define "naturalness" in terms of a series of natural values and biodiversity features which indicate the value of the site for biodiversity. The benefit of BioClass is that the biodiversity information is summarised and provided to Coillte staff in a more accessible manner.

Approximately half of Coillte's biodiversity areas are forest habitats: native forests, broadleaf forests, mixed conifer-broadleaf and conifer forests. Also, half of the biodiversity areas 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 Coillte Ecology Team works with the BAU to prioritise biodiversity areas for management action using a biodiversity register of all the biodiversity areas within the BAU. These sites are identified on a rolling programme each year.

Old Woodland Sites

Coillte recognises that woodland sites with a long history of woodland cover have potential ecological value. Old Woodland Sites (OWS) are sites that have been wooded since the 1830s. Old woodland sites are variable in terms of their biodiversity value – some show no remaining evidence of the former (pre-plantation) forest cover. However, there are sites where remnants of a former, ecologically mature forest remain clearly in evidence, e.g. veteran trees, large-dimension dead wood and well-developed woodland ground flora. These old woodland sites have the best biodiversity value, and as such, they are identified and managed as biodiversity areas.

Coillte policy is to assess and survey all OWS in advance of clear felling or high-impact operations. Any site identified as having many natural features present is brought to the attention of the company's ecologists for assessment and, based on the findings of the ecological assessment, is then mapped and managed as a biodiversity area.

Biodiversity Features

Biodiversity features are small features (usually <2ha in area) 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.

Coillte staff and contractors continue to find, map and protect biodiversity features on operations sites.

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 standard 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 potential 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 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.

2.6 High Conservation Value Forests (HCVF) within the Mid-West BAU

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

1. Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (HCVF 1);

The main focus of this HCVF criterion is protection of species (plants and animals), and the objective is to protect sites that contain important locations for species considered to be endangered.

2. Forest areas that are in or contain rare, threatened or endangered ecosystems (HCVF3).

The main focus of this HCVF criterion is protection of habitats that are considered to be rare or endangered. The objective is to protect sites that contain these habitats.

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). The selection, mapping and designation of sites for nature conservation is conducted by the National Parks and Wildlife Service.

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

There is some overlap between HCVF and Coillte biodiversity areas. Some of the large SPAs contain extensive habitats that have low intrinsic ecological value, but that form part of the territory of the bird(s) for which the SPA is designated (hence the large areas of HCVF that doesn't overlap with Coillte biodiversity areas).

Under Article 6(3) and 6(4) of the EU Habitats Directive, all forestry operations throughout the Coillte estate undergo Appropriate Assessment screening to determine if there are any likely significant impacts on the Qualifying Interests (QIs) of SACs and SPAs (i.e. HCVF). If it is concluded that significant impacts are likely, then a full Appropriate Assessment is required which identifies the mitigations required to ensure there are no impacts on these designated sites and their QIs.

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

Designation	Area (ha on Coillte lands)
NHA* – Natural Heritage Area	1,252
SAC* - Special Area of Conservation	3,949
SPA* – Special Protection Area	27,400
Nature Reserve	107
pNHA	2,560
Total HCVF	41,809

(*Overlap occurs between categories)

Coillte also recognises that woodland sites with a long history of woodland cover have potential ecological value.

Old Woodland Sites (OWS) are sites that have been wooded since the 1830s. Old woodland sites are variable in terms of their biodiversity value – some show no remaining evidence of the former (pre-plantation) forest cover. However, there are sites where remnants of a former, ecologically mature forest remain clearly in evidence, e.g. veteran trees, large-dimension dead wood and well-developed woodland ground flora. These old woodland sites have the best biodiversity value, and as such, they are identified and managed as biodiversity areas.

Coillte policy is to assess and survey all OWS in advance of clear felling or high impact operations. Any site identified as having a 'high score' (i.e. ecological value) is brought to the attention of the company's ecologists and their advice acted upon.

2.7 Species and Habitats in the Mid-West BAU

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

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

To date a total of 1,167 ha has been restored in BAU 2 under the EU LIFE-Nature Programme (bog / native woodland).

The BAU aims to maintain and where possible enhance habitats of ecological value and those that support species of ecological interest. Where species and/or habitats are a Qualifying Interest for a Special Area of Conservation (e.g. freshwater pearl mussel, blanket bog) or a Special Protection Area (e.g. hen harrier), the Appropriate Assessment process determines if any potential significant impacts on these species or habitats, and if so mitigation measures are detailed in a Natura Impact Statement. Biodiversity Action Plans which were developed by Coillte for the hen harrier and the freshwater pearl mussel continue to be drawn upon. Close communication will be maintained with the NPWS on matters relating to species and habitats of nature conservation concern.

Appendix II details the main habitats and species of interest within the BAU (some occur within designated sites such as SACs, SPAs and NHAs i.e., HCVF, while others incorporate habitats and species of wider ecological value). The management approach is described in brief.

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 negative effect on native biodiversity. Most notable from a Coillte point of view are Rhododendron which is a significant issue on our properties.

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

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

2.9 Water Quality and Protection in the Mid-West BAU

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

The main Water Management Units (WMU) in the BAU are the Clare River, Clarinbridge, Corrib Fergus, Galway Coast, Inagh, Killary Harbour, Kinvara, Lough Derg, Mask, South Clare/Shannon Estuary, Suck and West Galway WMU. The identification of these Management Units within the BAU will be an effective tool in liaising with the relevant Statutory Authorities on water management under the water framework directive.

There is an extensive spread of lakes and river catchments located within the BAU. The main lakes being Lough

Corrib, Oorid Lough, Lough Shindilla, Lough Bofin, Ross Lake, Lough Derg, Lough Graney, Doolough, Lough Cutra and Lough Rea.

In terms of rivers, the BAU is located within the Western and Shannon River Basins Districts, with the WRB having the largest impact. The main rivers are, Corrib, Ballinahinch Owenriff, Owenboy, Owengarve, Graney, Derrywee, Boleyneendorrish, Woodford, Fergus, Doonbeg, Hind, Suck, Dunkellin and Clare. The rivers and lakes of the area support important salmon and trout fisheries and this is important to the local economy.

There are four catchments designated SACs for the fresh water pearl mussel (*Margaritifera margaritifera*), Bundorragha, Corrib, Dawros and Cloon with the first three being currently rated amongst the Top 8 in Europe in terms of the pearl mussel habitats.

A list of all catchments and sub-catchments located in BAU 2 is provided at Appendix VI and all relevant maps and water quality status are publicly available at www.catchments.ie (select 'View Data and Dashboards').

Coillte abides by all Forest Service Guidelines, Regulations and Requirements regarding protecting water quality, and in particular Standards for Felling and Reforestation (2019) and Environmental Requirements for Afforestation (2016), which detail sound and practical measures for handling forest operations in proximity to waterways. As the largest landowner in counties Donegal, Mayo and Sligo Coillte has a responsibility to ensure that its actions do not negatively impact on water quality. Within the BAU the following are the most significant issues relating to water:

- Water abstraction for domestic use
- Presence of the rare freshwater pearl mussel species
- Presence of important salmonoid rivers

When planning forest operations all the issues listed above are considered. During this process, Coillte will liaise with a wide range of environmental regulators, including the Forest Service, Inland Fisheries Ireland, Shannon and North-West River Basin Districts, NPWS, LAWPRO and local authorities, particularly with regard to the potential impact of forest operations in proximity to environmentally sensitive waterways.

Coillte actively plays its part in protecting the water bodies water quality. Prior to the commencement of all forest operations, an Appropriate Assessment (AA) screening is conducted in order to determine if there is any potential impact on aquatic Qualifying Interests (QIs) for European sites that are hydrologically linked to the project area. If a full AA is required, a Natura Impact Statement (NIS) is produced, which outlines the mitigations that will be applied to protect aquatic QIs. These mitigations include the standard measures that are applied to protect water quality (DAFM 2019) such as exclusion zones adjacent to aquatic zones during clear-felling operations and establishing setbacks at the reforestation stage. Reference is made on how the trees are to be removed and prohibition of machinery movement in the exclusion zones during forest operations. Additional non-standard mitigations are applied as required, depending on the nature of the operations, the site characteristics and the sensitivity of any receptors. These may include restricting the timing of operations, establishing wider setbacks or low impact cultivation methods.

If the proposed forest operations site is judged to be water sensitive (as identified in the ERA process), 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 Challenges

Coillte's Mid-West BAU faces a number of challenges in relation to managing its forests effectively for production and for their recreational, environmental and social benefits. Over the past 5 years these have included:

- Poaching of deer; The increased level of poaching in the recent period has put greater emphasis on security.
- Illegal use by motorised vehicles, inappropriate recreation with quads and motorbikes
- Security; risk of major losses through theft, vandalism of property, and crop damage. To minimise this loss the BAU has commenced the implementation of the Company's security policy, in the BAU we have a contractor assigned to security of the estate.
- Litter and waste dumping; The majority of illegal dumping of domestic waste occurs where forests adjoin public roads and at forest entrances. The problem is extenuated in rural and remote areas but in close proximity to large urban areas. Coillte work closely with available Litter wardens to try combat this increasing problem.
- Anti-social behaviour; Coillte are investigating the most appropriate methods of security including the development of cameras in order to reduce this problem and lead to prosecutions.

Coillte implemented by-laws for access to and use of Coillte managed lands. Recreation sites where there are ongoing issues such as illegal access on motorised vehicles, dumping, anti-social behaviour etc. will be prioritised as candidate sites for installation of the relevant signage. These bye-laws may be enforced by the Garda Síochána and offences may be liable to a fine and/or imprisonment. Coillte have supported the development of new national enforcement powers which will make it an offence to use a scrambler or quad bike on public or private lands, including Coillte lands, without the permission of the landowner. These new laws will afford Gardai the power to seize scrambler bikes and other off-road vehicles.

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**. 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.

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 of the Hunter Competence Assessment programme and the Irish Deer Management Forum. This group went into abeyance following the retirement of its Chairperson but moves are afoot to re-convene this forum shortly. In addition, Coillte have been central to the roll-out and adoption of a new on-line Hunter Area Management System (HAMS) within the hunting community in Ireland. 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, larch and Norway spruce. Deer populations are principally controlled through the issue of hunting licences.

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 Coillte's Estates, Operations, Public Relations and Recreation teams.

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 Five Year Forest Plan – Mid-West BAU

We are very fortunate in the BAU in the richness and pristine quality of much of our environment, our wild natural resources and the presence of habitats and landscapes that are cherished both at home and internationally. We aim to maintain and enhance these natural assets and our overall goal is to deliver the multiple benefits of our forests for climate, nature, wood and people.

3.1 Vision

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

This vision includes:

- forestry will be a vibrant industry in the area, integrated into the local economy, providing employment opportunities in the forest, the timber industry and in many downstream activities;
- natural and semi-natural habitats are protected and enhanced through appropriate management;
- there is continuity of forest habitat for rare and threatened species;
- provide a range of recreational activities in our forests to support societal health and well-being;
- forest recreational sites will be a part of the tourism infrastructure and will be an important contributor to the tourism economy;
- sharing our plans with local communities, NGO's and interested stakeholders.

3.2 The Forest Resource and Wood Production

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

The Coillte Estate

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

Key Objective 1

In the Mid-West BAU, Coillte aims to produce approximately 2.3 million m³ of wood from its forests between 2021 and 2025.

2 million m³ of this will be provided through felling and 0.32 million m³ will be achieved through thinning.

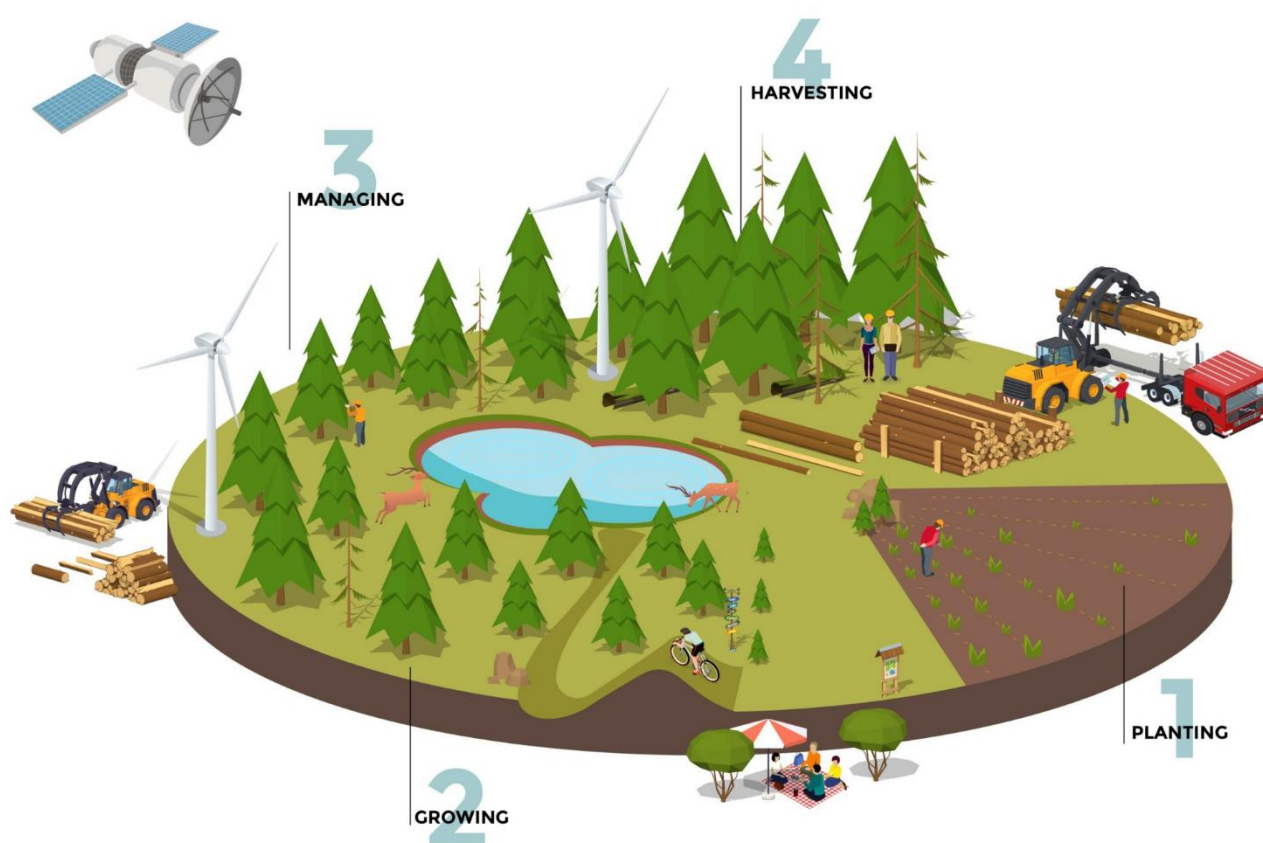


Figure 1: The Forest Cycle

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

- 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 forests in the area. The clear fell system will, however, remain the dominant silvicultural system in the BAU during the plan period. This involves the removal of all marketable trees from an area at the end of the rotation (usually at between 35 to 45 years of age). Due to the poor fertility and the exposed and unstable nature of our sites there is very little scope for alternative systems that remove mature trees more gradually. At clear-fell time considerable effort is now put into adjusting felling coupe size and shape to satisfy both environmental and landscape design purposes. Low Impact Silvicultural Systems (LISS) such as 'Small Coupe Felling', 'Change to Broadleaf' and 'Continuous Cover Forestry' are in use in the BAU and it is intended to expand this level where possible during the plan period.
- Thinning is also a natural part of forest management and it involves staged removals of a proportion of trees in a forest over a rotation, and it is a necessary part of standard forestry practice worldwide. Thinning improves the quality of the forest by regulating the space and light provided to trees as they grow. In line with international best practices, Coillte aims to thin where possible all forests to maximise the quality and volume returns from the estate. Thinning will only occur where the practice can be sustained, namely in forests with

no stability threat from high winds. High winds and exposure in the BAU is a limiting factor to thinning and consequently thinning is effectively concentrated in certain areas of the BAU where it is not as exposed and deemed to be more stable. Historically, because of stability concerns, there is limited standard thinning prescriptions used in this BAU with most thinning events having 2 or 3 interventions. The experience in the BAU to date is that thinning interventions of 3 or more often result in wind blow and are therefore not recommended in certain areas of the BAU.

All felling is controlled by the Forest Service which issues felling licences as appropriate under the Forestry Act, 2014; an act which provides for the development and promotion of forestry in a manner that maximises the economic, environmental and social value of forests within the principles of sustainable forest management. 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. In addition, Coillte's felling plans are also made available to the public via Coillte's online mapviewer hosted on the Coillte website [here](#) and updates to these plans are notified to registered stakeholders on an annual basis. If you wish to register as a stakeholder which ensures you are notified please refer to the contact page on our website for further information.

New planting and replanting

Under the terms of felling licences, Coillte will fulfil its obligation to replant felled areas.

Key Objective 2

In the Mid-West BAU, Coillte aims to replant approximately 7,160 hectares of forest by 2025.

Forest Roads

Forest Roads are an essential element of forest infrastructure. They provide access for management, harvesting and transport of timber and enhance the recreational potential of forests. A number of kilometres of new road are constructed each year in the Northwest BAU and there is also the need for maintenance of the existing road network. Where required, we engage with each local authority in relation to areas for harvesting, associated timber volumes and designated haulage routes for the current plan period. Our engineering staff have 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 approximately 18 km annually of new roads in our forests
- maintain the existing road infrastructure
- ensure the roading infrastructure complements and supports harvesting access to the forest
- develop road access to areas that are currently inaccessible
- Where required licences to construct the new roads will be obtained from the relevant regulator who consults with regulatory stakeholders as part of the licencing process

Key Objective 3

In the Mid-West BAU, Coillte aims to construct 89 km of new Forest 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, county council roads/bridges etc.). To address the access issue a list of all relevant areas is currently compiled and these will be prioritised on the basis of timber supply and a plan put in place to address potential issues by assigning relevant personnel. The BAU will consider the use of partnerships to help resolve/contribute to access difficulties on a site by site basis. In addition, a review of the road infrastructure will occur and all new haulage routes will be identified in conjunction with Clare and Galway Co Councils with a view to improving access.
- **Nutrient deficiencies** The Mid-West BAU has a large area of Sitka spruce which is 'in check', much of which was planted in the 1980's. In many cases these crops were planted in anticipation that site nutrition would be supplemented with fertiliser applied from a helicopter. The Northwest BAU is currently reviewing these areas in check and their suitability for fertilisation. This encompasses environmental sensitivities and an economic cost/benefit analysis along with the necessary foliage analysis. If the silvicultural argument is strong in terms of fertilisation we will proceed to apply for a licence to aerial fertilise those areas and conduct consultation with all relevant bodies with regard to safeguarding watercourses and comply fully with Forest Service guidelines on aerial fertilisation. Coillte will continue to evaluate other ground based alternatives on an ongoing basis.
- **Coillte's commitment** to sustainable forest management and environmental protection requires Coillte to review its practices and assess potential risks on a regular basis. Coillte has achieved sustainable forest management certification and is committed to ensure that there is continual professional development and refresher training for all staff, personnel and contractors to ensure a high environmental awareness and work standard is maintained. This will incorporate a wide range of training days and courses on all environmental issues and continued co-operation with all statutory stakeholders.
- The provision of a harvesting **infrastructure** that can respond to the environmental challenges will require ongoing training and cooperation of contractors and engaging in all relevant updates on developments in harvesting technology and machine capabilities. This is seen as a central requirement for all contractors wishing to operate in the Mid-West BAU.
- The **high proportion of low production forests** in the Mid-West BAU is an issue in meeting production targets and the BAU will examine alternative uses in some of these forests as a result. Thus the BAU will actively consider alternative land uses such as wind farm development, one-off property sales and the continued adoption of the Western Peatland Protocols for the alternative management and restocking of these low production sites.

Farm Partnerships

In relation to existing farm partnerships Coillte will:

- develop 10 year plans for farm partnerships that have been in existence for 10 years
- hold annual management meetings with farm partners.
- thin farm partnership sites regularly and on time (ensuring all regulatory processes are adhered to)
- carry out an inventory on farm partnership sites.
- Construct roads for timber extraction where needed. (allowing for completion of road grant application process)

Key Objective 4

In the Mid-West BAU Coillte will continue to manage its 130 Farm Partnerships according to the principles of sustainable forest management.

Overall production targets in the Mid-West BAU 2021- 2025

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

Mid-West production targets 2021 – 2025⁵

Annual Totals					
Year	2021	2022	2023	2024	2025
Establishment					
Planting (ha)					
Regeneration planting (r/f) (Replanting after felling) .	1550	1400	1400	1405	1405
Total Planting					
Harvesting Programme					
Harvest categories (000m3)					
Thinnings	62	66	66	66	65
Regeneration felling (P,C,W) felling	382	382	429	383	430
Total	444	448	495	449	495
Felling area (ha)	832	807	962	802	983
Roading Programme					
Roading (km)					
New	26	14	19	17	13
Upgrading	29	28	27	25	24
Total	55	42	46	42	37

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

3.3.1 Renewable Energy Projects

Coillte has been 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. Coillte has explored a range of partnerships and/or joint venture models in relation to its future own renewable energy development ambitions. Having considered its strategic options in 2018, Coillte decided to enter a formal development partnership with the ESB. A new standalone joint venture renewable energy company between Coillte and the ESB was established in November 2021 and the entity is called FuturEnergy Ireland (FEI). Coillte's interests in developing its own energy projects or through other historical partnerships have now transferred to FEI.

FEI adopts a best-in-class approach for the early stage identification of potential renewable 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 and public awareness and consultation programmes are implemented where appropriate.

Within this plan period, Coillte as a landowner will continue to consider wind farm proposals and where appropriate continue to facilitate FEI and other third party requests. All FEI and third party energy interests for the sale/lease of turbine areas or access requirements follow an 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

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

planning and sustainable development, the suitability of wind farm development proposals on Coillte property is a matter for the relevant Planning Authority.

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

Proposed FEI / Co Development projects on the Coillte estate in BAU 2 – correct as at February 2022			
Name of Project	Location	Status	No. of wind turbines/(MW)
Cahermurphy	Clare	In-planning (MCRE Co Dev.)	10 (6 Coillte Land)
Carrownagowan	Clare	In-planning	19 (19 Coillte Land)
Total			29 (25 Coillte Land)

Proposed third party planning permitted wind turbines on the Coillte estate in BAU 2 - correct as at February 2022			
Name of Wind Farm	Location	Status	No. of wind turbines
Ardderroo	Cloosh Forest, Co. Galway	In construction	25
Total			25

Over the course of this plan period, FEI will continue to explore opportunities for small, medium and large scale renewable energy developments on suitable sites for this type of development. Coillte will also continue to facilitate third party developments where appropriate. In all instances, Coillte, through its processes, seeks to 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.

Key Objective 5

In the Mid-West BAU, Coillte aims to develop/facilitate the development of 3 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 Acquisitions

Coillte manages a 440,000 hectare forest estate nationally and regularly buys and sells land as part of normal estate management operations. Coillte has a dedicated Acquisition and Sales Team who are actively looking to acquire bare land and immature forestry to expand our estate, and to sell land that may provide a solution for

individuals, businesses or communities. 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 areas of forest to neighbouring land owners and local communities, 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. All other recreational activities are managed under a licencing process to ensure the health and safety of all of our visitors and forest users. 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 regard 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 Mid-West BAU between 2021 and 2025 include:

- Engaging with Failte Ireland, other organisations and local community groups and where possible agreeing partnership arrangements for the maintenance and enhancement of existing recreation facilities and possible development of new ones.

- managing and maintaining all existing recreation facilities including waymarked trails.
- managing unauthorised usage of the recreation infrastructure in line with best management practice
- sourcing funding and developing new infrastructure including 'access for all' on a based on needs identified in conjunction with stakeholders and funding agencies and to enhance local tourism potential.
- Continuing our exploration of the development of amenities with Clare/Galway County Council, Town Council, Heritage Council, Trails groups and Community Groups

Key Objective 6

In the Mid West BAU, Coillte aims to:

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

3.5 Cultural Heritage and Archaeology Measures in the Mid-West BAU

Coillte, as the largest landowner in the country has a duty of care of the cultural heritage across the estate. All archaeological monuments are protected by law under the National Monuments Acts (1930-1994) and should not be disturbed without prior official approval. Coillte is guided by the Forest Service - DAFM and the National Monuments Service- DHLGH in the best forest practices in the protection of these structures.

All recorded archaeological monuments are highlighted during the planning stage of operations. They are identified and cordoned off on site by the forest manager to ensure their protection. Pedestrian access from the nearest public road, forest road or forest track is provided for such sites at afforestation stage and is established or maintained at reforestation stage. Outside of the these stages of the forest cycle, where professional archaeologists require access to a monument, this can be facilitated locally by Coillte staff. Unrecorded archaeological monuments, when located, are immediately protected and reported to the local Coillte Environmental Manager who in turn contacts the Forest Service Archaeologist for further advice.

The BAU will continue to support sites of acknowledged cultural and literary heritage and will protect and record all newly identified features of heritage that are discovered on the estate.

3.6 Environmental Enhancement Measures

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

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

3.6.1 Diversification of tree 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 its rotation. This effectively means we are pursuing a policy of planting lodgepole pine or pine/spruce mixtures on the low yielding sites. Diverse conifer species such as Scots pine can also be used in areas of shallow peat.

Riparian zones are either left as open space or planted with suitable native broadleaf species.

3.6.2 Practicing Low Impact Silvicultural Systems (LISS)

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

The list below explains the area where the various silvicultural systems that collectively are known as low impact silvicultural systems (LISS) are adopted. Low Impact Silviculture Systems such as Continuous Cover Forestry, are regarded as alternative methods of silvicultural management to felling. The introduction of LISS systems are very site specific and can only be achieved gradually and can take up to a rotation length to complete.

Some examples of sites on Coillte Estate managed under LISS

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

Key Objective 7

In the Mid-West BAU, Coillte aims to maintain the current percentage of broadleaf trees in the BAU.

3.6.3 Biodiversity

At present 20% of the Coillte land area in the Mid-West BAU is designated and managed for biodiversity.

Principal methods of retaining biodiversity in the BAU will include:

- **Retention of Old Woodland Sites (OWS)** 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 2,888 ha identified as old woodland. This represents 4% of the Coillte land in the Mid West BAU or 11% 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, and reviewing all sites that received a good rating from ecologists. The results of these assessments determine future management and restocking species.
- **Continuing the introduction of riparian buffer zones** 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.
- **Retaining dead wood** in all forests managed by Coillte is policy, where 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 a forest and 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 (biodiversity areas 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. Coillte also record deadwood both fallen and standing after harvesting events and when completing 4 year old crop assessments. Below are figures for the period 2019-2021. Figure for 2016-2018 can be made available upon request.

Standing Deadwood

High Forest Area (ha)	No Plots Measured	Area of plots measured Sample (ha)	Representative population measured (ha)	% of population measured	Av deadwood vol measured across the population (m3/ha)	Tot Vol in the Population (m3)	Av BAU Vol per ha (m3/ha)
58,443	1,483	59.32	19,659	0.30%	25.72	505,629	8.65

Fallen Deadwood

Av Annual Vol (m3)	High Forest Area (ha)	Av Annual Vol across BAU (m3/ha)*	Av Vol across BAU (m3/ha)	Target Vol (m3/ha)
51,398	58,433	0.88	7.04	4

*(Average Annual Volume figures are based on an average of 3 years)

- Carrying out **survey and monitoring** of important species and habitats, and of water quality to ensure their protection and enhancement, where possible.
- 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
- Controlling invasive species (such as Rhododendron) on the Coillte estate, through planting of appropriate species.
- Coillte are committed to implementing a maintenance program for the native woodland sites over the duration of the plan.

Key Objective 8

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

4. Sustainable Forest Management Policies and Proposals

Coillte manages its forests to FSC® and PEFC Forest Certification Standards and OHSAS 18001 Occupational Health and Safety Standard. Coillte are also committed to energy efficiency and in 2021 successfully achieved ISO 50001 certification status for its energy management systems.

4.1 Using Forest Design

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

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

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

4.2 Water Protection

Coillte's Policy on water protection and water monitoring is outlined in "Environmental Risk Assessment (ERA) Procedure for Site Operations". This document details our approach to minimising the impacts of forest operations on water quality. We also ensure compliance with the Forest Service's Code of Best Forest Practice, which includes a series of standards and guidelines.

Through the implementation of Environmental Risk Assessment (ERA) and Appropriate Assessment (as per the EU Habitats Directive), the most sensitive sites are identified and appropriate management measures above and beyond what is routinely adopted are recorded and implemented during the course of the forest operations.

Through the implementation of Appropriate Assessment (as per the EU Habitats Directive) and the Environmental Risk Assessment (ERA) procedure under the Environment Management System, the most sensitive sites are identified and appropriate management measures above and beyond what is routinely adopted are recorded and implemented during the course of the forest operations.

Forestry operations go through an ERA which is supplemented by AA processes and identifies any potential impacts on Qualifying Interests (QIs) of European sites within the Zone of Influence of the project site (e.g. due to a decline in water quality) and identifies appropriate measures that should be applied. Any mitigations required to protect QIs are clearly stated in Natura Impact Statements produced as part of the AA process and are listed on the Appropriate Assessment Determination (AAD) produced by DAFM for licenced activities. AA reports are produced by ecologists who consult with the Environment Team in relation to the highly sensitive sites that are identified by the ERA process.

Amongst the suite of measures that can be applied to protect water quality, one of the most important is the establishment of setbacks along aquatic zones within the forest. If not already in place from the time the forest was

initially planted, a naturally vegetated setback should be established either at thinning or clearfell and restock stage. As stated above, many of the measures that are applied are standard measures (DAFM 2019) designed to protect water quality. Additional measures are applied as required depending on the nature of the forestry operations, site characteristics and sensitivity of the receptors.

For activities that might impact on highly sensitive species such as freshwater pearl mussel (FPM), measures applied may include increased setbacks along aquatic zones which are hydrologically linked to FPM populations and planting of small groups of native broadleaves. The width of the setback depends on proximity to the FPM population (10-40m or more). Timing restrictions for works and/or weather conditions under which works should take place may also apply, again depending on the proximity to the FPM. Measures to be applied and licence conditions appear in the site packs issued to all contractors so that they are aware of additional measures that must be taken to protect water quality.

In order to ensure there is maximum protection for water quality in highly sensitive catchments, BAU6 are piloting a catchment management approach to planning forestry operations in or near Top8 FPM catchments. In some catchments, drain blocking and bog restoration may be appropriate, not restocking (enlarged set back zones) and/or destocking altogether. The potential for any of these options can only be made on a case-by-case basis following an ecological and in some cases hydrological survey. A key focus should be ensuring no significant impact on any Qualifying Interests and balancing actions with carbon neutralisation requirements.

Other measures to protect water quality include the restriction of when operations can occur in the year, the provision of silt traps, the minimisation of machinery movement in the setbacks and exclusion zones, extraction route layout and use of brash and the design and location of temporary bridging over watercourses within the operations site. The measures to be applied are set out in the Appropriate Assessment reports produced for the operations which are the site packs. They are based on the characteristics of the site, nature of the proposed operations, environmental and ecological sensitivities of the surrounding area.

To address the risk of oil spillages from forest machinery, a pollution control plan is included in the Site 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 2.8 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. Sampling is conducted at least three to four times a year, increasing to at least six times in areas where intense forest activity is taking place.

In highly sensitive catchments, other land use management options may be considered to protect water quality e.g. rewilding and/or bog restoration. Bog restoration is appropriate where there is potential for restoration i.e. sites on deep peat where it is possible to raise the water table and re-wet the bog through low impact interventions such as drain blocking and removing trees. Bog restoration has potential benefits for water quality, biodiversity and carbon sequestration.

Rewilding may be more appropriate in other areas which would require high impact interventions to achieve bog restoration e.g. cutover bog or plantation forest on cutover bog. Rewilding of existing plantation forests involves actions such as respacing to open up the canopy and promote development of the ground flora, and species diversification of the canopy, creating wide, vegetated setbacks (buffer zones) along rivers and streams, and planting native trees and shrubs where appropriate. Rewilding has potential benefits for enhancing natural and semi-natural habitats, as well as protecting water quality.

Finally, as well as complying with regulatory requirements, the BAU when planning forest operations in sensitive landscapes consults with the relevant regulatory, statutory and interested stakeholders on the topic of water, including the National Parks and Wildlife Service, LAWPRO, the Inland Fisheries Ireland and Co. Councils

4.3 Reducing Use of Chemicals

Pesticides

Coillte uses an integrated pest management approach; a core principle of Coillte's Environmental Management System and both the FSC and PEFC certification 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. When pesticides are required, only those approved as safe 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 of Coillte's operators are fully trained in health and safety and environmental aspects of the use of chemicals. We erect notices to inform the public where the chemicals have been sprayed. The chemicals are always applied manually directly to the base of trees and away from watercourses and other sensitive natural features. 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.

During the previous plan period 2016-2020, the insecticide used to control the weevil was cypermethrin (10% w/w), otherwise known as Forester, which was used under derogation from FSC® (details available upon request). In 2019, use of cypermethrin ceased and was replaced with a chemical called acetamiprid (20% w/w), commercially known as Gazelle SG or Ceta which is approved by the PRCD for use in plant pre-treatment and top-up spraying applications in Ireland.

The figures below refer to cypermethrin use nationally during 2016-2020 as referenced in Appendix IV.

				Planting Hectares Previous 4 Years						
	Reporting Year	Cypermenthin (Ltrs)	Cypermethrin KGs A.I.	2013-2016	2014-2017	2015-2018	2016-2019	KGs A.I Planted hectares	% Reduction v 2016 Baseline	
Derogation	Baseline Year	2016	6,264	626.4	26,292			0.023824738		
	Year 1	2017	5,765	576.5		28,305		0.020367426	15%	
	Year 2	2018	4,798	479.8			27,297	0.017577023	26%	
	Year 3	2019	-	-				32,906	0	100%
	Year 4	2020	-	-				0	0	0%
Expired	Year 5	2021	-	-				0	0%	

An ESRA Environmental and Social Risk Assessment (ESRA) is intended to inform the site operational plans, site specific risks, and adoption of appropriate mitigation measures. For each chemical used we complete an ESRA. 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 in the form of a licence before the operation may proceed. These licences go through the Appropriate Assessment (AA) process which identifies any potential impacts on Qualifying Interests (QIs) and identifies appropriate measures that should be applied. This requires the submission of detailed plans and consultation and agreement from the County Council, Inland Fisheries Ireland and NPWS. Adherence to the Forest Service requirements 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 may be contacted directly at info@coillte.ie

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 the principles sustainable forest management including 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: resource planning, timber harvesting and replanting, 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
- notices erected at entrances to recreation sites
- 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 clearfelling. This map forms the basis of public consultation and if concerns are raised about particular areas they are addressed at this time. Coillte endeavour to take on board inputs during this 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 and assigned to the relevant BAU or business area for consideration, response and possible incorporation into our plans.

A summary 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 are detailed below.

Incorporation of changes to all Five Year Forest Plans, responses following consideration of consultation submissions	
Section reference in plan	Detail incorporated
Foreword	In order to align our Forest Plans with current company strategy and create awareness this section was updated to include the following "In practicing sustainable forest management Coillte's aim is to develop its forests in a way that is environmentally, socially and economically sustainable, and to deliver the multiple benefits from our forests for climate, nature, wood and people"
1.1 Coillte	In response to biodiversity being raised as an issue in many stakeholder submissions during both phases of public consultation a paragraph was added headed 'Nature Conservation and Biodiversity' which gives a summary of our ongoing work in these areas.
1.2 Renewable energy	This section was updated to inform stakeholders about Coillte's joint venture company with ESB, namely FuturEnergy Ireland (FEI).
1.4.1 Trees, Carbon and Climate Change	As climate change and carbon storage were topics raised by many individuals, groups, NGO's (Mountaineering Ireland, Irish Water, Inland Fisheries Ireland) section 1.4.1 has been added to our plans providing useful information on how well managed forests have a triple benefit in combating climate change. Please refer to this section for details.
1.4.2	Details of our not-for-profit branch of Coillte, Coillte Nature has been added along with a link to further information on our website. Provision of this information goes towards providing details of our biodiversity and restoration work as requested and acknowledged by stakeholders during both phases of public consultation
1.5 Meeting external challenges, constraints and opportunities	This section was expanded to include sub-sections with information specific to regulatory requirements, pests and diseases, societal expectations, dumping and forest fires. Submissions received raised dumping as a major concerns, especially in recreation areas. Also, there is an expectation in many areas for enhanced and well maintained recreation areas and Coillte have committed to engaging and working with forums in various counties. Also, as dumping is an ongoing issue that requires a lot of resources statistics have been included to demonstrate the negative financial impact on our business.
2.5 Biodiversity and high conservation value forests (HCVF) within the Mid West BAU – Update 1	Text in this section was reviewed and updated to reflect our work in relation to BioClass which is a science-based procedure for assessing the ecological value of biodiversity areas within the Coillte estate.
2.5 Biodiversity and high conservation value forests (HCVF) within the Mid West BAU – Update 2	Submissions by Stakeholders Old Woodland Sites (OWS) – During Phase 1 of public consultation 330+ submissions were received in relation to OWS. Relevant information was provided in our response to each stakeholder and updated text has been added to Section 2.5 which sets out our policy in relation to OWS.
2.9 Water quality and protection in the Mid West BAU	This section was revised to include updated information about measures taken to handle forest operations in proximity to waterways. Also, as required, and referred to in submissions received by individual stakeholders, Irish Water and the Marine Institute this section now includes reference to our catchments and sub-catchments list with access via a link to all relevant maps

2.10 Forest Management Issues	In response to concerns raised by stakeholders in submissions and through the contact page on our website during the period of consultation, information about measures being taken to control the illegal use of motorised vehicles on our lands has been included.
3.2 The Forest Resource and Wood Production – Update 1	In response to several queries relating to our felling plans, and to ensure that all those who refer to our plans are fully informed, the following text has been added to the last paragraph of this section 'Coillte's felling plans are also made available to the public via Coillte's online mapviewer hosted on the Coillte website here and updates to these plans are notified to registered stakeholders on an annual basis. If you wish to register as a stakeholder which ensures you are notified please refer to the contact page on our website for further information.'
3.2 The Forest Resource and Wood Production – Update 2	To provide clarification, as requested by an individual stakeholder, Key Objective 4 was re-worded in all plans to read as follows "In ____ BAU, Coillte will continue to manage its ____ No Farm Partnerships according to the principles of sustainable forest management"
3.3.1 Renewable Energy Projects	In order to ensure provision of up-to-date information to stakeholders as agreed during consultation on previous strategic plans text regarding the number of planning permitted projects and proposed projects that concern the Coillte estate was updated and is accurate as of February 2022.
3.6.3 Biodiversity	Retaining deadwood – Actual figures for the past three years (average) for fallen and standing deadwood are provided
4.2 Water Protection	This section has been reviewed and updated to reflect Coillte's Policy and procedures in relation to Water Protection.
4.3 Reducing use of Chemicals	This section has been updated to inform stakeholders that use of Cypermethrin as referred to in previous plans has ceased. A breakdown of its use during the previous plan period has been provided as referenced in Appendix IV – Monitoring. Also, information about ESRA Environmental and Social Risk Assessment (ESRA) has been added and text under the heading 'Fertilisers' has been reviewed and updated.
Incorporation of changes, responses following consideration of consultation submissions specific to BAU 2 – Mid West The detail in the table below outlines incorporation of changes, following consideration of consultation submissions received from stakeholders/public during Coillte's public consultation stages (scoping and draft plan) carried out during 2020 and 2021 for the Mid West BAU Five Year Forest Plan.	
2.3 Community, Recreation and Tourism Facilities in the Mid West	Submission by Stakeholders An individual stakeholder sought details of plans for Chevy Chase Forest Response by Coillte A response was issued giving details of our current work and future plans for the area, which highlighted the importance of retaining its current tranquil offering to local forest users. Also, information was provided about Coillte Nature's work as requested. We endeavour to continuously improve areas we have designated for recreation and work closely with local community groups to maintain and enhance these areas while also ensuring they are managed sustainably.
2.3 Community, Recreation and Tourism Facilities in the Mid West	Submission by Stakeholders A number of submissions were received from both individual stakeholders and local groups in relation to Aghrane who raised matters such as upgrade works, signage, etc. Response by Coillte Coillte endeavours to maintain and enhance our recreation facilities on an ongoing basis. In relation to Aghrane we will continue to work closely with all interested stakeholders and plans are in place to carry out upgrade works and erect signage. BAU staff are working closely with Tidy Towns in relation to this.

2.3 Community, Recreation and Tourism Facilities in the Midlands	Submission by Stakeholders Moycullen Community Group requested that a discussion was held in relation to plans and requirements at Moycullen / Kilrainey Woods Response by Coillte Coillte agreed to facilitate a meeting in liaison with Land Solutions to discuss any issues and set out our plans for the areas. Coillte will continue to work closely with Moycullen Community Group as and when required.
3.2 The Forest Resource and Wood Production	Submission by Stakeholders An individual stakeholder raised concerns about conifer reforestation, buffer zones and bog restoration. Response by Coillte Coillte set out our policies in relation to management of buffer zones and reforestation which are carried out in compliance with Forest Service, DAFM regulations.
2.3 Community, Recreation and Tourism Facilities in the Mid West	Submission by Stakeholders An individual stakeholder asked about our plans for access for all facilities and upgrade works at Portumna Forest Park Response by Coillte Coillte have prioritised plans to improve access for all facilities at Portumna Forest Park as well as toilet facilities and overall maintenance and enhancement of this recreation facility on an ongoing basis, as funds allow.
2.3 Community, Recreation and Tourism Facilities in the Mid West	Submission by Stakeholders An individual stakeholder asked about our plans to upgrade recreation facilities at Monivea Wood Response by Coillte We are currently working closely with local council representatives to secure funding which will allow us to upgrade walking trails. In relation to Rhododendron, we will carry out work to remove this invasive species as funding allows, noting that this is a national problem. We work closely with all external third parties in relation to this.
2.3 Community, Recreation and Tourism Facilities in the Mid West	Submission by Stakeholders Cratloe Community Council's submission addressed felling works as well as Coillte's plans to protect and enhance the biodiversity and amenity of Cratloe Woods. An individual stakeholder also raised concerns about felling plans in the area. Response by Coillte Coillte clarified that felling licence in place was to ensure the safe removal of dangerous trees. A successful online meeting was held to discuss issues and plans for the area. We look forward to proactive engagement with Cratloe Community Council in the future.
3.2 The Forest Resource and Wood Production	Submission by Stakeholders Clare Co Council's submission raised several matters, including Water Protection, consultation, and compliance. Response by Coillte Coillte highlighted the positive relations between Coillte and various municipal districts within Clare Co Co which provides opportunity to raise all matters referred to in their submission. Coillte will continue to work closely with Leitrim County Council via this forum. Furthermore, Coillte have a positive relationship with Clare Co Co and will continue to proactively engage with them in relation to our operational plans as set out above.

2.3 Community, Recreation and Tourism Facilities in the Mid West	Submission by Stakeholders Broadford Community Action Group sought to discuss our plans for Doon Wood, specifically in relation to recreation, biodiversity and historical importance. Response by Coillte BAU staff met with group representatives to discuss our plans for the area. We look forward to continuing engagement in the future. We endeavour to continuously improve areas we have designated for recreation and work closely with local community groups to maintain and enhance these areas while also ensuring they are managed sustainably.
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4.5 Monitoring and Evaluation

Coillte continues to monitor the achievements of its objectives and targets using the proforma set out in Appendix IV. Please refer to same for statistics relevant to the period 2016-2020.

Appendix I - Summary of Archaeological Sites in Mid-West BAU

BAU	Type of Monument	No. In BAU	SMRS Number *
B2	Architectural fragment	1	GA114-180----
B2	Barrow - ring-barrow	2	CL023-036----, GA033-010----
B2	Barrow – unclassified	1	CL029-011----
B2	Boundary mound	8	GA072-012----, GA085-002----, GA085-026002-, GA085-026003-, GA085-026004-, GA085-041----, GA124-009----, GA124-010----
B2	Building	1	GA027-010----
B2	Bullaun stone	2	GA040-013005-, GA040-013006-
B2	Burial	4	GA040-002----, GA098-142001-, GA098-142002-, MA120-076001-
B2	Burial mound	1	GA097-021----
B2	Cairn - burial cairn	1	MA120-078001-
B2	Cairn - unclassified	3	GA039-010----, GA067-025----, GA067-030----
B2	Castle - tower house	1	CL035-085----
B2	Castle - unclassified	2	CL024-014----, MA120-033001-
B2	Causeway	1	GA126-068----
B2	Cave	1	MA120-076----
B2	Children's burial ground	5	GA032-010----, GA039-016001-, GA045-001----, GA115-007----, GA126-028----
B2	Church	3	GA040-013001-, GA040-013004-, GA095-060----
B2	Cist	3	CL020-017----, CL044-066----, MA120-078002-
B2	Country house	3	GA033-006----, GA046-068----, GA126-052----
B2	Cross	1	GA040-023----
B2	Cross-inscribed pillar	2	GA040-013002-, GA040-013010-
B2	Cross-inscribed stone	3	GA040-020----, GA040-021----, GA040-022----
B2	Cross-slab	2	GA040-013008-, GA040-013009-
B2	Designed landscape - folly	3	GA027-003----, GA027-006----, GA086-249----
B2	Designed landscape - tree-ring	7	GA017-053----, GA027-023----, GA068-069----, GA096-136----, GA126-053----, GA126-054----, GA126-055----
B2	Designed landscape feature	1	GA095-063----
B2	Earthwork	3	CL029-010----, CL037-020001-, CL047-011----
B2	Ecclesiastical enclosure	1	GA095-060001-
B2	Ecclesiastical site	1	MA120-008----
B2	Enclosure	30	CL008-094----, CL025-089----, CL035-102----, CL037-020002-, CL040-010----, CL042-168----, CL043-110----, CL044-002----, CL045-003----, CL045-004----, CL045-009----, CL048-010----, CL060-007----, GA023-029001-, GA023-030001-, GA060-052----, GA067-021----, GA072-069----, GA073-070----, GA073-157----, GA086-244----, GA086-248----, GA095-067----, GA097-025----, GA114-007----, GA114-141----, GA115-009----, GA126-070----, GA129-006----, MA120-035----
B2	Field boundary	1	GA023-039----
B2	Fish-pond	2	GA033-012----, GA086-242----

B2	Fulacht fia	1	CL016-150----
B2	Graveyard	1	GA040-013003-
B2	Hilltop enclosure	1	CL019-030----
B2	House - 18th/19th century	3	GA040-018----, GA129-022----, GA131-022----
B2	House - indeterminate date	3	GA097-063002-, GA097-063003-, GA126-083----
B2	Hut site	3	CL025-147002-, CL025-151002-, CL025-153008-
B2	Icehouse	1	GA071-066----
B2	Kiln - corn-drying	1	GA131-016----
B2	Kiln - lime	4	GA040-015----, GA040-016----, GA067-027----, GA073-158----
B2	Mass-rock	2	CL036-044----, GA086-203----
B2	Megalithic tomb - court tomb	3	GA005-050----, GA027-039----, GA036-006----
B2	Megalithic tomb - wedge tomb	4	CL036-038----, CL037-001----, CL044-068----, MA120-079----
B2	Mine - copper	6	GA039-001----, GA039-002----, GA039-003----, GA039-008----, GA039-011----, GA039-013----
B2	Monumental structure	2	GA095-070----, GA124-006----
B2	Mound	1	GA097-024----
B2	Quarry	19	CL042-121----, GA033-003----, GA033-004----, GA033-007----, GA033-008----, GA086-134----, GA098-033----, GA107-142----, GA115-020----, GA116-044----, GA126-058----, GA126-061----, GA126-063----, GA131-002----, GA131-009----, GA131-017----, GA131-018----, GA131-019----, GA131-021----
B2	Redundant record	33	CL004-018----, CL004-075----, CL008-091----, CL012-001----, CL016-081----, CL037-018----, CL042-126----, GA027-002----, GA027-021----, GA027-022----, GA027-026----, GA033-018----, GA033-046----, GA068-053----, GA071-061----, GA073-159----, GA074-096----, GA086-058----, GA086-120----, GA086-121----, GA086-159----, GA086-218----, GA097-022----, GA097-023----, GA097-057----, GA107-063----, GA114-114----, GA126-023----, GA126-064----, GA126-066----, GA131-001----, GA131-004----, GA132-001----
B2	Ringfort - cashel	18	CL017-163----, CL025-145----, CL025-147001-, CL025-148----, CL025-149----, CL025-150----, CL025-151001-, CL025-152----, CL025-153002-, CL025-153003-, CL026-034----, CL026-039----, CL034-117----, CL035-091----, CL035-099----, GA068-026----, GA097-063----, MA120-033003-
B2	Ringfort - rath	16	CL016-079----, CL016-080----, CL032-033----, CL033-090----, CL049-001----, CL067-028----, GA027-004----, GA027-030----, GA033-001----, GA033-005----, GA033-009----, GA045-017----, GA086-247----, GA087-196----, GA126-082----, MA120-034----
B2	Ringfort - unclassified	15	CL052-063----, GA019-037----, GA061-052----, GA073-040----, GA086-113----, GA086-166----, GA086-228----, GA086-231----, GA086-245----, GA107-061----, GA114-101----, GA114-102----, GA115-050----, GA116-043----, GA125-117----

B2	Ritual site - holy well	7	CL018-024----, CL037-019----, CL043-021----, GA039-016----, GA040-014----, GA046-061----, GA131-010----
B2	Road - road/trackway	1	GA040-013012-
B2	Souterrain	6	GA027-030001-, GA045-017001-, GA086-166001-, GA086-231001-, GA097-063001-, MA120-033002-
B2	Standing stone	3	CL021-021----, GA023-029----, GA116-090----
B2	Standing stone - pair	1	GA023-030----
B2	Tomb - unclassified	1	GA040-013011-
B2	Well	1	GA131-011----
B2	Windmill	1	GA071-055----

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

Appendix II - Habitats and Species in Mid-West BAU**

Main Properties	Habitat Quality	Management Strategy	Issues to be Addressed	
Raised Bog (PB1)				
Lough Lurdeen. Camdeery. New Forest. Kilsallagh. Lisnageeragh. Poolnagoona.	Excellent	Monitor sites.	Control natural regeneration.	
Aughrim. Ballygar . Monivea. New Forest . Derrinlough(Ballinphuill) Keeloges (Ballyhard)	Excellent	Monitor sites.	Rhododendron control, drainage management.	
Blanket bog (PB2)				
Finnaun South	Property contains an extensive area of largely intact blanket bog which lies within a Special Area of Conservation	Retain the good condition of unplanted bog areas. Increase the area of open bog, especially in areas adjacent to streams and lakes.	Fell selected areas of conifer forest and do not replant. Allow blanket bog regeneration.	The costs of habitat restoration.
Emlaghdauroe	Property reverting back to blanket bog following restoration project.	Restoration work completed.	Prevent the overgrazing of the site by sheep and control natural regeneration of lodgepole pine where necessary.	Fire risk.
Exposed calcareous rock (ER2)				
Ballykine	A substantial area of Priority Woodland Habitat associated with Limestone pavement as determined under the EU Habitats Directive the Annex II . The quality is good.	Area now restored.	Some localised clearing of scrub and woodland may be required in order to retain the extent and quality of the habitat. Remove any non native trees and invasive species. Prevent trespass. Ensure public access	The cost of removing scrub and regenerated conifers into the future. Maintenance of public access. Control of laurel.

** This Appendix is subject to changes / updates during the plan period.

Habitats and Species in the Mid-West BAU

Alkaline fen (PF1)			
Portumna	Good	Maintain existing fen	High deer population..
Turlough (FL6)			
Portumna	High	Remove non-native species	Seek funding.
Dry calcareous heath (HH2)			
Castletaylor	Good	Retain existing semi natural habits and expand through removal of conifers.	Cost of works.
Narrow Leaved Helleborine			
Rosturra	Recorded at a number of locations throughout this old woodland site.	Protect known locations to plant population.	Keep locations confidential.

Protected or Rare Species in Mid-West BAU

Main Properties	Habitat Quality	Management Strategy	Issues to be Addressed
Dogs Mercury (mercurialis perennis) R			
Woodlawn	Fair	Identify and protect Habitat. Retain shade or hedge rows.	Poisonous to life stock.
Birds nest orchid (Neottia nidus-avis)			
Ballindereen. Clonbrock.	Fair	Identify and protect habitat.	Retain habitat.
Bats			
Ballykelly Rylane O'Brien's Castle Moyriesk Ballykine	Good	Protect known roosts and maintain suitable foraging habitat.	Continue to Liaise with NPWS. Carry out Habitat assessment when harvest units are within 2.5km of a roost
Hen Harrier (Circus cyaneus)			
Slieve Aughty mountains.	Good	Maintain suitable foraging and nesting habitats	Trespass, fires and loss of habitat.
Water Rail (Rallus aquaticus)			
Doon	Good	Retain Habitat	Control deer
Merlin Falco columbarius			
Slieve Aughty mountains	Good	Continue to adhere to merlin conditions as per felling licences.	Loss of habitat,trepass,fires.
Hairy Wood Ant Formica lugubris			
Woodford forest	Very good	Identify and protect	Loss of habitat.

		nesses and habitat		
Otter (<i>Lutra lutra</i>)				
Dunammon, Cooley, Adrergoole North,	Good	Protect riparian Zones.	Follow all relevant guidelines in this area.	
Red Squirrel (<i>Sciurus vulgaris</i>)				
Portumna Demesne, Aghrane	Good	Restricted times for harvesting operations.	Grey Squirrel.	
Badger (<i>Meles meles</i>)				
Portumna Demesne Ballindereen Moniea	Fair	Put measures in place to protect Badger sets. Follow guidelines.	Keep locations confidential.	
Pine martin (<i>Martes martes</i>)				
Portumna Demesne Clonbrock	Fair	Enhance semi- natural woodland.	Keep locations confidential.	
Frog (<i>Rala temporaria</i>)				
New Forest Cloonivihony Mountbellew Demesne Clonbrock Portumna Demesne	Fair	Prevent further drainage and allow development of wet woodland.	Retain Habitat.	
Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) Regarded by International Union for the Conservation of Nature and Natural Resources (IUCN) as ‘facing an extremely high risk of extinction in the wild in the immediate future’. Also listed in EU Habitats Directive, Annex II.				
Derradda	Important populations of the species occur downstream of this property.	Prevent enrichment of river waters by improving the ecological quality of riparian habitats.	Remove conifers and establish riparian scrub over time with the agreement of various regulatory bodies.	Agreement of National Parks and Wildlife Service and fisheries board. The cost of riparian restoration. Getting approval to carry out works.
Kylemore	Important populations of the species occur downstream of this property.	Prevent enrichment of river waters by improving the ecological quality of riparian habitats.	Remove conifers and establish riparian scrub over time with the agreement of various regulatory bodies.	Agreement of National Parks and Wildlife Service and fisheries board. The cost of riparian restoration. Rhododendron and fire risk.

Native and Mixed Woodlands in the Mid-West BAU

Main Properties	Habitat Quality	Management Strategy	Issues to be Addressed
Oak-birch-holly Woodland (WN1)			
Derrygill, Kylebrack.	Good	Habitat restoration & protection.	Control of invasive species, deer.
Oak-ash-hazel Woodland (WN2)			

Cloonkeenleanode	Good	Protect and enhance esker woodland. Habitat Restoration.	Control of Laurel, Beech and Sycamore.
Castlefrench	Good	Habitat Restoration Replant with native Broadleaves	Protect from trespass.
Portumna Demesne	Good to Very Good	Habitat Restoration/ retention and trial CCF project with underplanting.	High deer population.
Ballygriffy	Good	Habitat restoration.	Control trespass.
Ballyeighther	Good	Remove conifers.	Control trespass.
Ballinderreen	Good	Habitat Restoration	Control of Beech and Sycamore
Yew Woodland (WN3)			
Castletaylor Attaslany	Good	Habitat Restoration / Retention	Control of natural regeneration of none native species.
Wet Pedunculate Oak-Ash Woodland (WN4)			
New Forest	Good	Habitat Retention Gradually remove conifers. Allow natural regeneration of Native Species	Control of regeneration of non-species.
Cloonlyon	Good	Habitat Retention	Control of none native regeneration. Control of Deer stock grazing.
Rosturra,	Very Good	Habitat Retention	Control of non-native regeneration and Deer.
Wet Willow –Alder –Ash Woodland (WN6)			
Cloonbrock	Good	Restore Habitat	Control of Rhododendron, Laurel Gorse
Lough Cutra	Good	Restore & retain Habitat	Deer.
Mixed broadleaved Woodland (WD1)			
Dundsandle	Good	Retain Habitat	Control of non-native regeneration.
Ballygriffy	Good	Retain and enhance habitat.	Control trespass.
Mixed broadleaved/conifer Woodland (WD2).			
Clonbrock	Good	Retain Habitat	Control of Rhododendron and Cherry Laurel.
Portumna Demesne	Good	Retore Habitat	Control of non-native broadleaves.
Castletaylor	Good	Restore Habitat Gradually remove conifers Allow and encourage natural regeneration	Control of non-native broadleaves.
Dundsandle	Good	Retain Habitat	Control of non-native regeneration.

Oak-birch-holly woodland (WN1) Listed in EU Habitats Directive, Annex II				
Ballinahinch	A number of small woodland areas occur along lake margins. The quality of the habitat is generally good.	Increase the area of oak- birch-holly woodland.	Clear riparian areas of conifer plantation and allow the regeneration of birch-holly scrub. These areas will develop into mature Oak-birch-dolly woodland in the longer term.	Woodland regeneration at this site may require extensive fencing which is costly.
Mixed broad-leaved/conifer woodland (WD2)				
Clonbur woods (Ballykine)	Clonbur Woods is a large, species-rich old woodland site associated with limestone pavement.	Site restoration work completed.	Monitor the wood for natural regeneration of conifers and remove where necessary. Maintain public access and enhance trails within the area.	Ensuring future funding to help maintain the ongoing works required.

Species

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

Notable Species	Notable Species	Notable Species (RTE – Rare, Threatened or Endangered)
Daboecia cantabrica Lathraea squamaria Neottia nidus-avis Thelypteris palustris Listera cordata Saxifraga spathularis Rhynchospora fusca Rhamnus cathartica Eriocaulon aquaticum Eriophorum gracile Arctostaphylos uva-ursi Juniperus communis Erica Erigena	Platanthera bifolia Thelypteris limbosperma, Carex acuta Cephalanthera longifolia Carex limosa Vaccinium oxycoccus Empetrum nigrum Vaccinium oxycoccus Cladium masiscus Carex lasiocarpa Ranunculus lingua	Lesser Horseshoe Bat (Rhinolophus hipposideros) Pine Marten (Martes martes) Badger (Meles meles),

Appendix III – Recreation Facilities in the BAU

Name	Nature of facility	Proposed work
Portumna Forest Park	Forest park	Maintain/Develop
Monivea	Looped walks/Path	Maintain/Develop
Carrowbane	Looped walk	Maintain/Develop
Woodlawn	Forest roads	Maintain/Develop
Mountbellew	Looped walks/Path	Maintain/Develop
Aghrane	Looped walks/Path	Maintain/Develop
Derroua MBT	Mountain Bike Trail	Maintain/Develop
Kilcornan	Forest Walks	Maintain/Develop
Dunsandle	Looped Walks	Maintain/Develop
Cratloe Woods	Recreation Area	Maintain/Develop
Gragans Woods	Forest Walks	Maintain
Cahermurphy	Forest Walks	Maintain/Develop
Kilrush	Forest Walks	Maintain/Develop
Ballycuggaran	Forest Walks	Maintain/Develop
Cong/Clonbur	Forest Walks	Maintain/Develop
Newvillage	Forest Walks	Maintain/Develop
Lackavrea (Maam Cross)	Forest Walks	Maintain/Develop
Inchagoill Island	Forest Walks	Maintain/Develop

Appendix IV – BAU 2 Monitoring

BAU 2 – Monitoring 2016-2020		
Economic Parameters		
No	Parameter	Output
Establishment		
1	Afforestation (Hectares)	10
2	Restocking (Hectares)	6,083
3	Later Manuring Area Aerially Fertilised (Hectares)	250
Harvesting		
4	Clearfelled area (Hectares)	4,907
5	Thinning Area (Hectares)	7,714
Silvicultural Systems		
6	LISS*Areas including OWS** (Hectares)	4,624
Species Composition		
7	Primary species	52% area of BAU
8	Secondary species***	22% area of BAU
9	Broadleaves	14% area of BAU
10	Open Space	12% area of BAU
Chemicals		
11	Chemical usage (kgs active ingredient/ha)	Please refer to Section 4.3 for national figures
Land Transactions		
12	Area sold by BAU (Hectares)	468
Environmental Parameters		
No	Parameter	Output
Biodiversity		
13	Biodiversity area identified	20%
14	Biodiversity sites identified	13,732
15	Biodiversity management plans completed	20
16	Biodiversity features recorded	13,723
17	Deadwood: Fallen	Please refer to section 3.6.3
18	Deadwood: Standing	Please refer to section 3.6.3
19	Forest roads constructed	70,699 m
20	Forest road upgrades	304,134 m
Forest Health		
21	BAU Forest Health Survey - Results	0 sites
22	BAU Forest Health Survey - Actions	No action required
Abiotic Damage		
23	Fires – area damaged (Hectares)	123.05
24	Windthrow area (Hectares)	150.22
Deer Culls		
25	Deer Cull Returns	788
Social Parameters		
No	Parameter	Output
Cultural Heritage		
26	Protected archaeological monuments identified	257

<i>Recreation</i>		
27	No of Deer Licences Issued	68
28	Hunting (Game) Licences Issued	52
29	Recreation Licences Issued	674
30	Visitors to forest parks in BAU	763,770
<i>Consultation</i>		
31	Stakeholder Queries	572
<i>Community</i>		
32	Community partnerships	6
<i>Health and Safety</i>		
33	Dumping & Litter	Refer to Section 1.5.4

* Low Impact Silvicultural Systems

** Old Woodland Sites

***Secondary species are all other conifers outside of Sitka spruce, e.g: DF, LAR, LP, LPS, NS, OC, SP.

Appendix V – Forest Details

(A) Actual Volumes (m3) for 2016-2020

BAU	2016	2017	2018	2019	2020	Grand Total
B2	355,783	407,027	384,691	406,318	127,212	1,681,031

(B) Forecast Volumes for 2021-2025

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
CE01 - Burren	3,546	25,029	46,646	34,539	9,037	23,097	566	1,310	497	2,563	338	58	105	74	18	50
CE02 - Maghera	4,996	45,865	40,831	48,194	63,360	38,001	5,711	5,869	7,195	8,566	6,177	102	84	109	115	93
CE03 - Lough Atorick	5,069	43,327	35,684	72,669	46,010	47,428	4,883	5,314	6,508	5,253	3,170	96	74	163	90	101
CE04 - Cregg Wood	1,603	8,377	20,196	10,709	11,787	8,816	399	863	3,271	3,787	1,934	16	42	23	21	18
CE05 - Scarriff	3,290	31,216	24,968	27,556	23,618	18,271	1,269	1,123	1,753	1,634	1,348	73	52	55	39	25
CE06 - Violet Hill	2,681	40,669	36,214	42,876	12,791	10,716	940	1,229	1,994	3,224	1,709	79	74	102	31	23
CE07 - Doolough	4,474	30,882	32,338	44,612	25,092	28,198	689	1,064	783	1,383	1,460	67	66	102	49	59
GY01 - Castlegrove	227	314	123	0	5,390	803	682	0	559	451	0	1	0	0	13	1
GY02 - Clonberne	789	0	1,054	0	1,820	5,408	577	1,365	31	1,782	0	0	2	0	4	21
GY03 - Glinsk	859	1,917	8,208	3,495	489	7,065	1,683	1,862	1,025	446	957	4	18	7	1	23
GY04 - Aghrane	1,483	14,661	4,686	4,100	6,599	9,879	4,310	2,954	2,703	377	2,152	31	8	10	22	24
GY05 - Mountbellew	1,716	2,772	2,671	8,454	2,952	9,452	1,823	3,717	2,376	1,999	2,626	5	6	22	8	24
GY06 - Clonbrock	661	1,233	0	279	1,752	117	471	0	725	67	219	2	0	0	4	0
GY07 - Killure	748	341	0	0	5,382	0	2,238	0	149	627	0	1	0	0	17	0
GY08 - Killmor	438	5,263	0	0	1,328	5,049	142	391	453	111	429	9	0	0	4	10
GY09 - Portumna	440	0	0	0	1,048	1,579	0	0	0	0	0	0	0	0	2	4
GY10 - Woodford	4,892	39,905	34,466	19,126	35,293	25,232	4,088	3,832	5,968	5,024	6,983	85	72	48	75	51
GY11 - Derrybrien	7,767	19,203	41,109	47,279	48,345	56,815	14,009	11,615	20,260	11,509	23,893	42	86	105	106	123
GY12 - Peterswell	2,566	21,175	23,386	23,524	15,189	51,778	10,599	14,618	6,920	9,741	4,714	47	52	49	45	124
GY13 - Lough Cultra	131	798	0	291	0	0	0	0	0	0	24	2	0	0	0	0
GY14 - Gort	67	0	0	3,773	0	0	0	0	0	0	0	0	0	8	0	0

GY15 - Kilcornan	879	975	5,390	2,586	613	13,376	282	721	480	717	511	2	11	7	1	32
GY16 - Woodlawn	1,491	2,598	0	1,976	3,422	6,906	1,945	5,390	811	2,255	3,240	6	0	4	12	24
GY17 - Clogh	924	1,638	0	0	2,514	2,816	1,370	472	338	141	1,615	3	0	0	8	8
GY18 - Monivea	241	2,989	773	618	953	0	794	0	0	509	0	6	2	1	1	0
GY19 - Ballyglooneen	292	2,971	0	0	0	0	232	309	0	0	348	5	0	0	0	0
GY20 - Rosscahill	476	2,592	1,578	1,656	9,831	272	0	0	0	0	0	5	3	3	21	0
GY21 - Cloosh	6,052	16,925	7,636	14,370	16,327	19,845	1,811	1,156	561	2,096	541	41	20	36	41	48
GY22 - Derrada	971	0	0	0	0	652	0	0	0	0	57	0	0	0	0	1
GY23 - Bunnakill	623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GY24 - Oughterard	1,949	3,975	2,620	1,072	4,715	22,582	215	0	0	0	287	9	7	2	9	59
GY25 - Cong	935	1,901	2,926	2,642	6,027	2,927	179	360	84	0	125	4	6	5	9	5
GY26 - Coolan	46	0	0	0	466	0	0	0	0	0	0	0	0	0	1	0
GY27 - Derryclare	2,851	2,216	4,103	6,438	14,963	1,968	0	0	0	0	0	5	8	14	26	3
GY28 - Cappahoosh	1,704	0	1,062	2,912	442	9,180	0	0	0	0	0	0	2	6	1	24
GY29 - Ballinahinch	406	4,878	0	3,202	5,595	982	0	242	64	1,622	0	17	0	6	8	3
GY30 - Baunogues	1,660	5,105	2,985	367	0	612	0	0	0	0	0	9	7	1	0	2

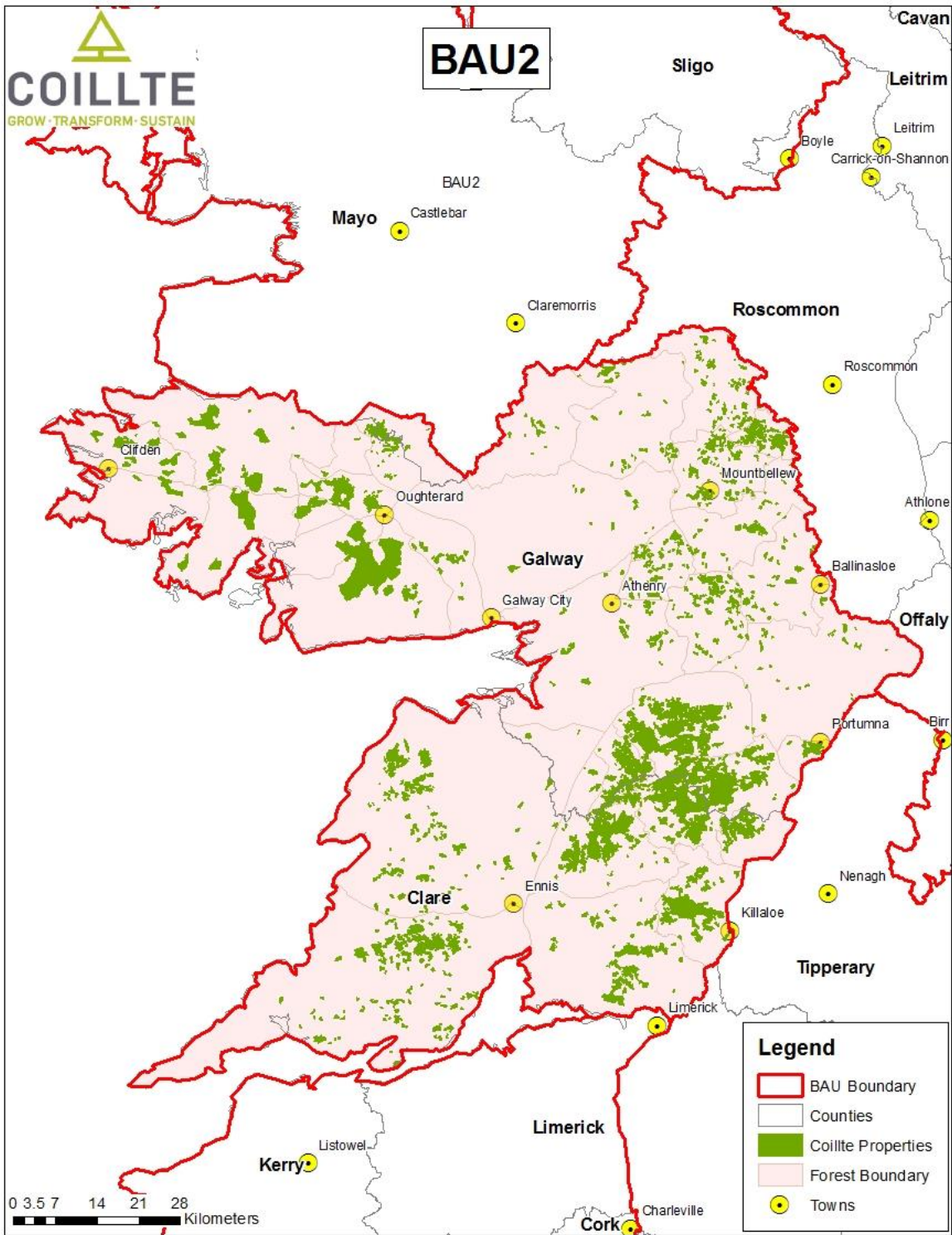
Appendix VI – Catchments and Sub-Catchments in BAU 2

BAU No.	WFD Catchment No.	WFD Catchment Name	WFD Sub_Catchment No.	WFD Sub_Catchment Name
2	25B	Lower Shannon	25B_5	Shannon[Lower]_SC_060
2	25B	Lower Shannon	25B_1	Shannon[Lower]_SC_040
2	25B	Lower Shannon	25B_4	Shannon[Lower]_SC_050
2	25B	Lower Shannon	25B_2	Shannon[Lower]_SC_030
2	25C	Lower Shannon	25C_7	Bow_SC_010
2	25C	Lower Shannon	25C_3	Graney[Shannon]_SC_010
2	25C	Lower Shannon	25C_8	Graney[Shannon]_SC_020
2	25C	Lower Shannon	25C_10	Shannon[Lower]_SC_070
2	25C	Lower Shannon	25C_12	Kilcrow_SC_010
2	25C	Lower Shannon	25C_6	Cappagh[Galway]_SC_010
2	25D	Lower Shannon	25D_3	Shannon[Lower]_SC_100
2	25D	Lower Shannon	25D_9	Shannon[Lower]_SC_090
2	25D	Lower Shannon	25D_6	Shannon[Lower]_SC_080
2	26D	Upper Shannon	26D_3	Suck_SC_100
2	26D	Upper Shannon	26D_5	Suck_SC_090
2	26D	Upper Shannon	26D_7	Suck_SC_030
2	26D	Upper Shannon	26D_6	Suck_SC_060
2	26D	Upper Shannon	26D_10	Suck_SC_050
2	26D	Upper Shannon	26D_1	Suck_SC_070
2	26D	Upper Shannon	26D_11	Castlegar_SC_010
2	26D	Upper Shannon	26D_2	Suck_SC_080
2	26D	Upper Shannon	26D_4	Suck_SC_040
2	26G	Upper Shannon	26G_3	Shannon[Lower]_SC_010
2	26G	Upper Shannon	26G_1	Shannon[Lower]_SC_020
2	27	Shannon Estuary North	27_9	Owenslieve_SC_010
2	27	Shannon Estuary North	27_1	Fergus_SC_040
2	27	Shannon Estuary North	27_10	Fergus_SC_050
2	27	Shannon Estuary North	27_4	Wood_SC_010

2	27	Shannon Estuary North	27_5	Cloon[Clare]_SC_010
2	27	Shannon Estuary North	27_11	BALLYGIRREEN_SC_010
2	27	Shannon Estuary North	27_13	Owenogarney_SC_010
2	27	Shannon Estuary North	27_2	KILLADYSERTSTREAM_SC_010
2	27	Shannon Estuary North	27_12	Owenogarney_SC_020
2	27	Shannon Estuary North	27_3	Fergus_SC_030
2	27	Shannon Estuary North	27_8	Doonah_SC_010
2	27	Shannon Estuary North	27_14	Fergus_SC_020
2	27	Shannon Estuary North	27_7	Fergus_SC_010
2	27	Shannon Estuary North	27_6	Rine_SC_010
2	28	Mal Bay	28_7	Annageeragh_SC_010
2	28	Mal Bay	28_2	Aille[Clare]_SC_010
2	28	Mal Bay	28_1	Inagh[Ennistymon]_SC_010
2	28	Mal Bay	28_6	Inagh[Ennistymon]_SC_020
2	28	Mal Bay	28_5	Annagh[Clare]_SC_010
2	28	Mal Bay	28_3	Doonbeg_SC_010
2	28	Mal Bay	28_4	KiltumperStream_SC_010
2	29	Galway Bay South East	29_9	Kilcogan_SC_010
2	29	Galway Bay South East	29_7	Cannahowna_SC_010
2	29	Galway Bay South East	29_2	Kilcogan_SC_020
2	29	Galway Bay South East	29_6	CARROWMONEASH[Oranmore]_SC_010
2	29	Galway Bay South East	29_8	Kilchreest_SC_010
2	29	Galway Bay South East	29_5	Raford_SC_010
2	29	Galway Bay South East	29_1	Boleyneendorrish_SC_010
2	29	Galway Bay South East	29_3	GLENINAGH_SOUTH_SC_010
2	29	Galway Bay South East	29_4	Clarinbridge_SC_010
2	30	Corrib	30_19	Clare[Galway]_SC_040
2	30	Corrib	30_12	Clare[Galway]_SC_050
2	30	Corrib	30_18	Corrib_SC_010
2	30	Corrib	30_15	Joyce's_SC_010
2	30	Corrib	30_4	Clare[Galway]_SC_070
2	30	Corrib	30_14	BallycuirkeLoughStream_SC_010

2	30	Corrib	30_8	Sinking_SC_010
2	30	Corrib	30_13	Clare[Galway]_SC_060
2	30	Corrib	30_5	Clare[Galway]_SC_030
2	31	Galway Bay North	31_1	D[ÚLEITIR_THIAR]_SC_010
2	31	Galway Bay North	31_4	Recess_SC_020
2	31	Galway Bay North	31_2	Recess_SC_010
2	31	Galway Bay North	31_3	Furnace_SC_010
2	31	Galway Bay North	31_8	Cashla_SC_010
2	31	Galway Bay North	31_7	Knock[Furbo]_SC_010
2	31	Galway Bay North	31_5	Owenriff[SouthGalway]_SC_010
2	31	Galway Bay North	31_6	Owenboliska_SC_010
2	32	Erriff-Clew Bay	32_13	Dawros_SC_010
2	32	Erriff-Clew Bay	32_12	Bunnahowna_SC_010

Appendix VII – BAU Map



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