COILLTE
GROW · TRANSFORM · SUSTAIN

South-East Five Year Forest Plan 2021-2025

Foreword

I have great pleasure in publishing Coillte's South East 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

Kenneth Sweeney

BAU Leader – South East

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 Council®[1] (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.

Kenneth Sweeney

BAU Leader – South East

[1] FSC® licence code FSC- C005714

[2] PEFC licence code PEFC/17-23-042

Table Of Contents

1. Coillte and Five Year Forest Plans 5

2. The South East BAU 17

3. The South East BAU Five Year Forest Plan 26

4. Sustainable Forest Management Policies and Proposals 37

Appendix I - Summary of Archaeological Sites in South East BAU 45

Appendix II - Habitats and Species in the BAU 48

Appendix III – Recreation Facilities in the BAU 56

Appendix IV – BAU 4 Monitoring 60

Appendix V – Forest Details 62

Appendix VI – Catchments and Sub-Catchments in BAU 4 64

Appendix VII – BAU Map 67

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 sources[2]. Coillte is fully aligned with government and EU policy in terms of the role we play in relation

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

to renewable energy development in Ireland.

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

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.

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 2019[3]. 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.

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

[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/

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 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.	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. • 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 consideration of this feedback, it is envisaged the finalised plans will be issued in Q4 2022.	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 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:

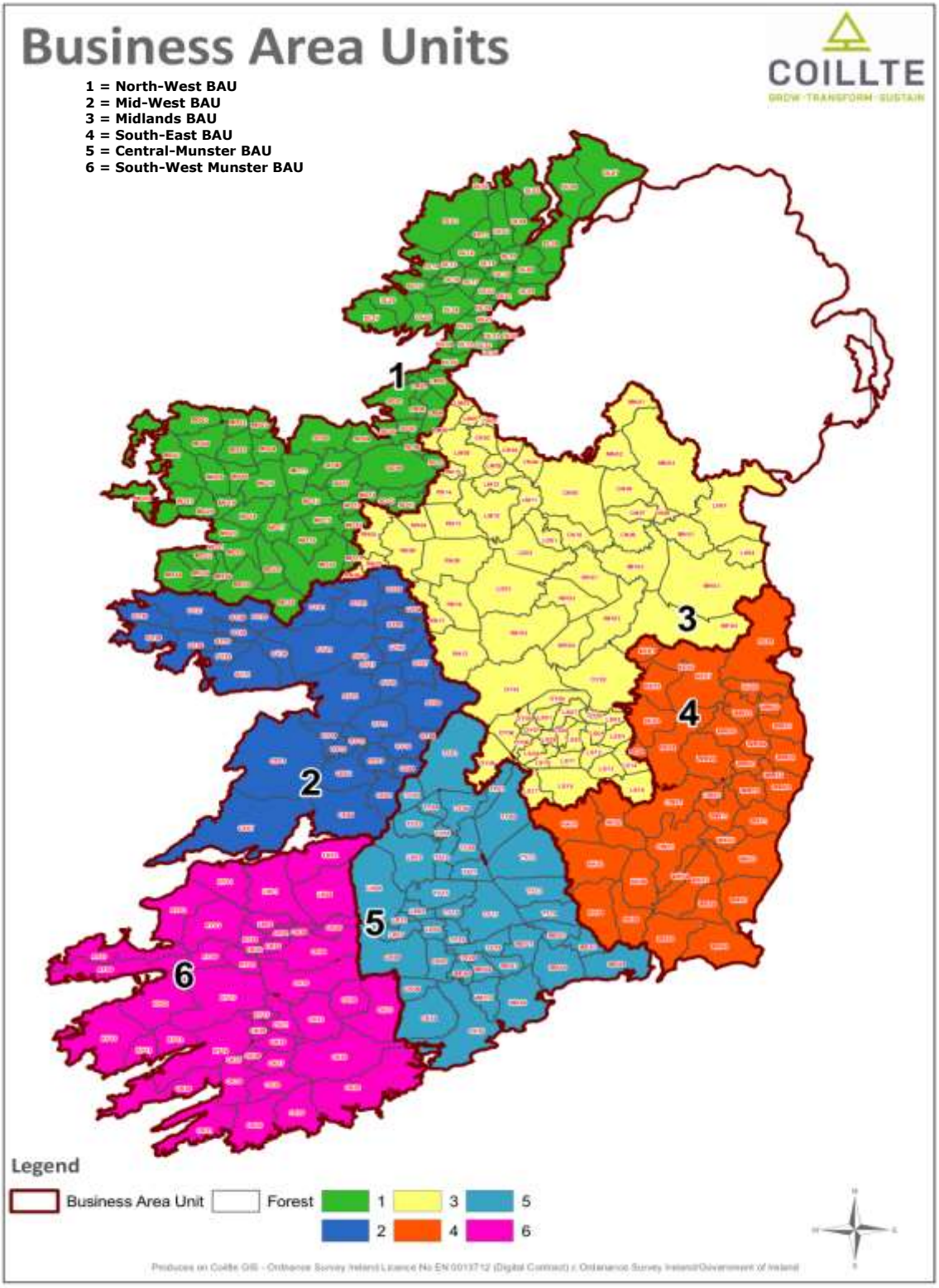
- Surveillance of fire
- Transportation of staff and equipment
- Fire fighting

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 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. South East Leinster BAU

2.1 The South East Leinster BAU

All BAUs play important roles in achieving Coillte targets and objectives. The South East Leinster BAU of Coillte Forest encompasses the entire counties of Kilkenny, Kildare, Dublin, Wicklow, Carlow and Wexford. It covers 1,003,205 Ha of Ireland. Within this area, Coillte owns 59,769 Ha (5.96%) with well over 90% of which is forested with the remainder mostly open moorland, marsh and lakes.

Large populations centres include the suburbs of South Dublin (including Tallaght, Rathfarnham and Dalkey), the coastal areas of Bray, Greystones, Wicklow, Arklow and Wexford which have high population centres, while in Kildare, Newbridge and Naas are the main population centres and Blessington, Carlow and Baltinglass dominate the western area of the BAU with finally Kilkenny, New Ross, Gorey and Enniscorthy in the southern geographic area. The map below shows the major towns and roadways in the South East Leinster BAU.

The climate for forestry operations is suitable, with moderate rainfall and relatively good ground conditions. The soil types in the BAU are quite fertile and assist in the growth of highly productive forestry.

2.2 Forests and Forest Products in the South East Leinster BAU

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

During the 2016-2020 period, the BAU produced approximately 1.9 million cubic metres of wood. This timber was primarily sold to our customers in Murray Timber Products primarily in Ballon Co. Carlow, Glennon Brothers in Fermoy, Eastlog in Aughrim, SmartPly in Waterford, Medite in Clonmel, Coolrain in Coolrain and Laois in Portlaoise. Many other smaller mills buy timber for example Glenwood, Greenwood, Michael Grace, Leitrim sawmills and Griffith stakes.

Forest Products

Private timber

Coillte is the largest producer and consumer of pulpwood in Ireland. Coillte's strategy is to supplement its own supply through the purchase of private timber, through various channels, 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 153 farm partnerships within the BAU. This number is not expected to increase in the lifetime of this plan, as we are no longer engaged in this area. We will continue to support our existing partners.

2.3 Community, Recreation and Tourism Facilities in the South East Leinster 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 the extensive forest network. The development of recreational facilities and activities in line with Coillte's Recreation policy are some of the many ways Coillte can contribute towards the "public good" value of the estate. This can be achieved through partnerships, permits and ongoing relationships that respects the sustainable use of our forests for future generations. The South East Leinster BAU recreational activities contribute to the social, environmental and economic life within the BAU boundaries.

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

Dublin Mountains Partnership (DMP)

The DMP was officially launched in October 2008 and a recreation manager has been in place since January 2009. All six partners (Coillte, Dún Laoghaire-Rathdown County Council, Dublin Mountains Initiative, National Parks & Wildlife Service, South Dublin County Council and Dublin City Council) are highly committed to the work of the DMP and funding is in place to continue the excellent progress into the future. Over the last number of years the

partnership has undertaken and completed a number of projects to improve recreation, manage environmentally sensitive sites and improve awareness of forest biodiversity. These include:

- Maintaining and upgrading the Dublin Mountains Way,
- Installing electronic gates in the Hell Fire and Barnaslingan car parks,
- Master plan for the Mountain bike Trails in Tiknock,
- Dublin Mountains Way promotional brochure produced,
- Volunteer and community involvement through the Volunteer ranger service and the
- consultative forum.

The DMP have supported the Coillte Nature Dublin Mountains Makeover plans, promoting recreation in seven forest properties which have exceptionally high visitor numbers. The forests will have areas managed though Continuous Forest Cover (CCF) and conversion to native woodlands through clearfell and replanting of native tree species.

The Wicklow Way Partnership (WWP):

The WWP was set up in 2011 and all six partners (Coillte, Wicklow County Council, Mountain Meitheal, County Wicklow Partnership, National Parks and Wildlife Service and the DMP) are highly committed to enhancing, upgrading and maintaining the Wicklow Way to the highest standard. The partnership has completed a number of re-routes that has enabled it to take sections off road by utilising Coillte and NPWS lands.

The Wicklow Outdoor Recreation Committee (WORC):

The committee consists of Coillte, Wicklow County Council, County Wicklow Partnership, Fáilte Ireland, Wicklow Tourism, Wicklow Uplands Council, National Park & Wildlife Service and Wicklow IFA. The five main objectives of the Wicklow Outdoor Strategy are to:

- Develop an integrated outdoor recreation management,
- Improve opportunities and facilities for sustainable outdoor recreation,
- Support conservation through outdoor recreation,
- Promote, educate and raise awareness,
- Stimulate outdoor recreation tourism and entrepreneurship.

Coillte are members of both the Wicklow Way Partnership and St. Kevin's Way Partnership with the WORC group. The BAU has a high recreational usage with a number of National Way-marked Ways traversing Coillte property within the BAU. These include sections of The Wicklow Way, St. Kevin's Way, The South Leinster Way and The Dublin Mountains Way.

Over 70 kilometres of the WW and St. Kevin's pass through a significant number of properties in the BAU. An annual maintenance plan is agreed with the WORC group members to improve the trails.

At present, we are working with South Dublin County Council to prepare a feasibility study for a recreational project in the Hell Fire Massey's area of South Dublin.

Coillte has also developed a number of trails in conjunction with local communities and other agencies. An example of this would be the NeighbourWood Scheme walking in Baltinglass. Further examples are rerouting the Spinc Walk in Glendalough and planned construction of a pedestrian bridge across the Avonmore River to link Ballygannon to the Avonmore Way.

There are two highly utilised forest amenity parks located in the geographical area covered by the BAU, Donadea Forest Park located just outside Clane in Kildare and Avondale House and Forest Park located just outside Rathdrum in Wicklow which is being re-developed into a state-of-the-art visitor destination through our partnership with Failte Ireland.

In total €8 million will be invested in phase 1 of the re-development of Avondale Forest Park 'A Place for Visionaries', which is supported by Wicklow County Council and is set to create a major boost for Ireland's tourism industry

There will also be a state-of-the-art visitor centre on site that will offer a café and restaurant, before leading to Coillte's 'Evolution of Forestry' installation and a breath-taking Tree Top walkway providing 360-degree views of the canopy and Avonmore River valley.

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.

This BAU has 42 designated areas for recreational activity, and these are detailed on the Coillte website http://www.coillte.ie/our-forests/attractions/

A list of woodlands in the BAU, designated for recreation, available in Appendix III.

2.4 Cultural and Archaeological Heritage in the South East Leinster BAU

Coillte is aware of 306 archaeological sites and sites of cultural significance in its landholdings in the South East Leinster BAU. These monuments include megalithic tombs of different kinds, cashels and other enclosures and crannogs. A summary of archaeological sites in the BAU is provided in Appendix I.

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

Many historical land acquisitions contain farmsteads and features representing rural life in the 19th and early 20th century. These are identified and protected within forest management practices and identified when proposals for sales are being developed. They are evaluated in terms of their social and historical value and a plan implemented for their preservation. Examples include; Tintern in Wexford and Camenabologue property in Glenmalure Forest where there is a link track between Glenmalure and Glen of Imall and has both cultural and historical significance dating back to pre-1798 times and is protected during forest operations. An old Sitka spruce tree on Stafford's Avenue, Shelton Property is reputed to be the second highest tree in Ireland, this tree is protected. Coillte will identify, protect and record all new items of heritage which are discovered on its lands.

2.5 Biodiversity

and High Conservation Value Forests (HCVF) in South East Leinster 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. 10,473 ha of Coillte land in the South East BAU is protected during operations or enhanced to increase its biodiversity value. This equates to approximately 18% 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 value for nature or biodiversity.	8,843
Biodiversity Features	Small features (usually <2ha) that add biodiversity value to the forest stand, protected during forest operations	751
Riparian Buffer Strips	Strips of land that adjoin streams, rivers and lakes, and are managed for their protection.	1,294

(*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 were very different to today) are removed and the strip is either left open to revegetate naturally. Sometimes, clumps of native broadleaves are manually planted in the buffer strip.

Over time, the buffer strips develop into open habitat or scrub alongside the watercourse or lake, and have considerable wildlife value. As with the biodiversity features, the area of riparian buffers increases over time, as more are mapped on operations sites and converted to open habitat and/or scrub.

2.6 High Conservation Value Forests (HCVF)

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 South East BAU. Areas shown are in hectares (Ha).

Designation	Area (ha on Coillte lands)
NHA* – Natural Heritage Area	63
SAC* - Special Area of Conservation	2,000

SPA* – Special Protection Area	2,363
Nature Reserve	466
pNHA	2,287
TOTAL HCVF	5,421

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 South East Leinster BAU

A range of both forest and non-forest habitats of special nature conservation value occur on Coillte land within this BAU. Notable species include rare, threatened and endangered species that are IUCN Red List species (in most cases also listed on Annex II, IV and V of the EU Habitats Directive or Annex I of the EU Birds Directive) plus other species of local or regional ecological interest. The following rare and/or protected species are some of those known to be present in the BAU, including otter, merlin, nightjar, little egret, several bat species and freshwater pearl mussel (see Appendix II for list of examples).

The BAU aims to maintain and where possible enhance habitats of ecological value and those that support species of ecological interest. Biodiversity areas within the BAU aim to protect and enhance HCVF and therefore include designated sites (SAC, SPA, NHA and pNHA), priority habitats and OWS.

All licenced forestry operations are subject to Appropriate Assessment (AA) in order to determine if they are likely to have a significant impact on sites designated for nature conservation as Special Areas of Conservation or Special Protection Areas. AA is an ecological assessment which aims to protect rare, threatened and endangered habitats and species (HCVF).

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. Merlin), 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. In addition, the ERA (Environmental Risk Assessment) process aims to identify potential impacts on several environmental receptors including biodiversity (e.g., badger setts), and to identify suitable mitigations.

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 and to a lesser extent laurel which are a significant issue in some properties. Other species of concern include Japanese Knotweed and giant hogweed. 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 South East Leinster BAU

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 Kilkenny, Kildare, Dublin, Wicklow, Carlow and Wexford, Coillte has a responsibility to ensure that it's actions do not negatively impact on water quality. The main reservoirs for Dublin city and suburbs are located in County Wicklow. The headwaters of many streams and rivers feeding these reservoirs rise in Coillte property. Within the BAU the following are the most significant issues relating to water:

- Presence of naturally acidic sensitive streams and rivers due to underlying bedrock of granite and schist,
- Water abstraction for domestic and industrial use by Local Authorities and Group Water Schemes, such as Roundwood (Vartry) reservoir,
- Presence of important salmonoid rivers, such as the Dargle River,
- Presence of the fresh water pearl mussel in the Slaney River catchment.

The main rivers in the BAU are the Liffey, Dodder, Tolka, Avonbeg, Avonmore, Vartry, Slaney, Barrow, Nore & Suir. The rivers and lakes of the area support important salmon fisheries and this is also important to the local economy. There are also associated freshwater pearl mussel populations within some of these fisheries.

Furthermore, the BAU falls within the National River Basin and covers 9 river catchments either partially or completely.

A list of all catchments and sub-catchments located in BAU 1 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').

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, LAWPRO, NPWS 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 Issues

Coillte's South East Leinster BAU faces a number of issues in relation to managing its forests effectively for production and for their recreational, environmental and social benefits. During the period 2016 to 2020 issues 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 Siochana 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. Also, Coillte staff in BAU 4 have worked with community groups such as Friends of Glenart to highlight issues and their impact to community groups, Gardai and the general public.

PURE

The PURE project is a partnership project and the first of its kind in Ireland which incorporates statutory and non-statutory organisations, including; *Wicklow County Council, Dun Laoghaire Rathdown County Council, South Dublin County Council,* Coillte, National Parks & Wildlife Service, and the Wicklow Uplands Council. Funded by The Department of Environment Community and Local Government PURE was established to combat illegal dumping/fly-tipping in the Wicklow/Dublin Uplands. The project was officially launched in September 2006.

Since the establishment of PURE, the project has removed over 3,400 tonnes of illegal dumping from the landscape, a large proportion collected from Coillte properties. Invariably, many of these Coillte sites are located in some of the most beautiful, scenic, and frequented areas of the upland region. These sites also serve as amenity areas located on the tourist route of the Wicklow/Dublin Mountains.

PURE collaborate with Coillte Forestry Managers, Local Authorities, and their individual staff members, to insure a fast response to reports of dumping on Coillte Land and also insure a fast removal of this dumping.

PURE is the first project of its kind in Ireland to record all incidents of illegal dumping by GPS. This information is then transferred to a GIS data base system which provides comprehensive information on; location of dumping, land owner, type of waste dumped, and the amount of dumping located at the site.

The GPS unit also enables the user to take a photograph of the site. Since the introduction of the GPS/GIS recording

system in 2008, PURE have built up a base-line data on all dumping sites related to Coillte properties in the Wicklow, South Dublin and Dun-Laoghaire areas.

Illegal dumping is unsightly and unnecessary, causing serious problems to habitats, species, and human health. It pollutes our water courses, damages soil nutrients, encroaches on habitat space, kills insects and animals, and is a threat to both the people who live in the area and recreational users. It also has a negative economic impact on tourism and discourages both tour companies and tourists in visiting certain areas.

Coillte will continue to support PURE and will assist the project in its Evaluation and Submission of Extension, to the Department of Environment Community and Local Government (DECLG), for PURE 5, which is planned to commence in mid-2016.

The Pure Mile was developed in 2010 to foster a greater appreciation and awareness of our country roadscapes by rewarding and acknowledging local community efforts. The competition encourages communities and groups living in rural areas to adopt a mile stretch of road (approx. 1.6 km), and keep this area litter/rubbish free. Over 2,500 volunteers now help keep 500 miles clean through this popular initiative.

2.10.1 Deer Management

Wild deer on Coillte's estate is 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

Wild deer are present on over 60% of the Coillte estate. Through browsing and bark-stripping trees, deer can have a considerable negative impact on any tree crop and on tree species selection as well as the quality, yield and survival of forest crops. Deer can also impact land use objectives on neighbouring lands and can be a major health and safety hazard, particularly on public roads.

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

Coillte have demonstrated considerable commitment and leadership in recent years in developing collaborative deer management and the establishment of training standards for deer hunters. At National level the company was instrumental in the establishment the Hunter Competence Assessment programme and the Irish Deer Management Forum. 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 South East Leinster BAU Five Year Forest Plan

We are very fortunate in the BAU in the richness and pristine quality of much of our environment, our wild natural resources and the presence of habitats and landscapes that are cherished both at home and internationally. We aim to maintain and enhance these 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 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 and through planting partnerships with others.

The Coillte estate

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

Key Objective 1

In the South East Leinster BAU, Coillte aims to produce approximately 2,566,000 cubic metres of wood from its forests between 2021 and 2025.

2,037,000m3 of this will be provided through felling and 529,000m3 will be achieved through thinning.

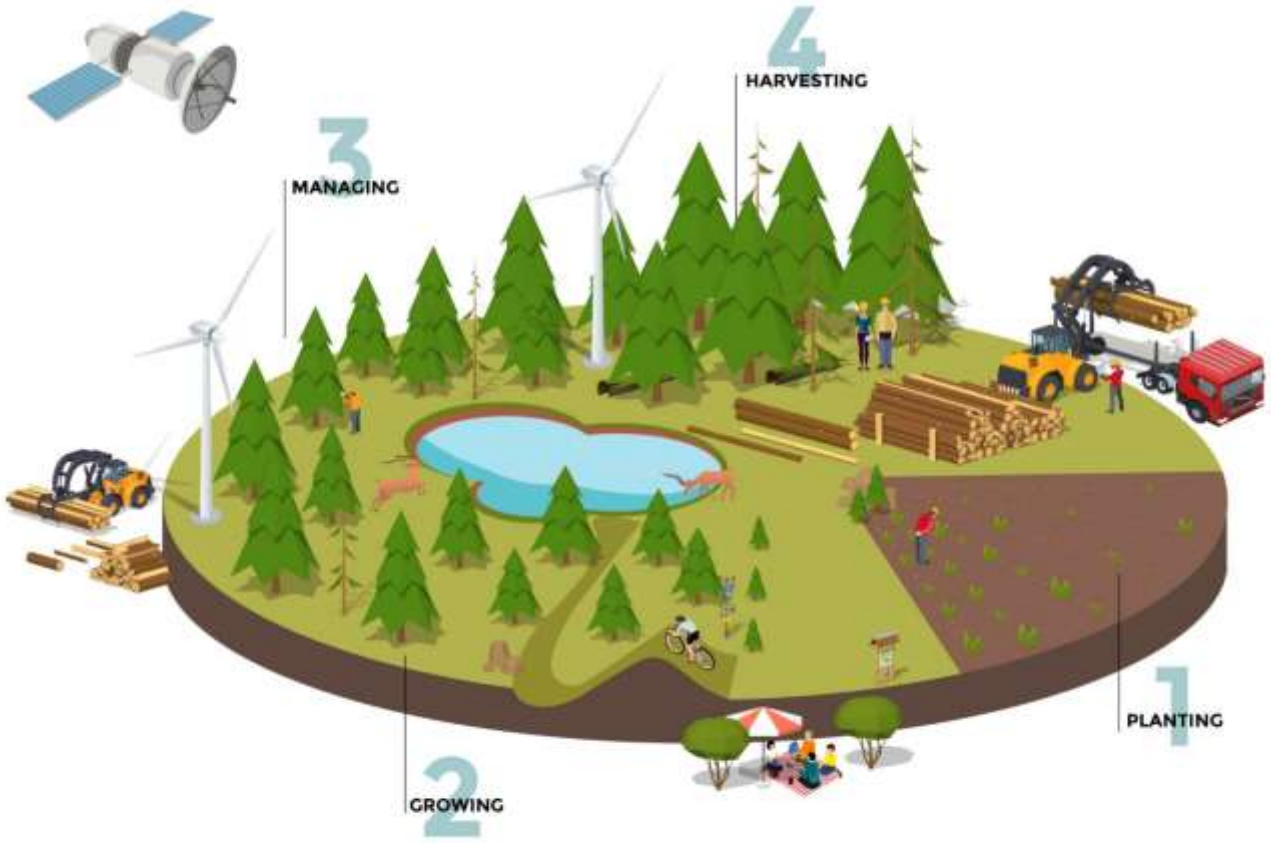


Figure 1: The Forest Cycle

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

- Clearfell is the most common silvicultural system used in Ireland and the UK due to the prevailing forest culture and has predominated over the past century characterized by the establishment of new forest plantations. The extent of clear felling annually is strictly controlled both externally and internally. Externally, the extent of annual clear felling is subject to statutory control by the Forest Service. Internally, control is exercised by the Coillte policy of 'Sustained Yield'. Sustained yield allows our forests to grow and be harvested at a level that is capable of providing a continuous supply of timber for current and future generations. Coillte has introduced a number of Low Impact Silvicultural Systems (LISS) which will apply to some forests in the area. The clear fell system will, however, remain the dominant silvicultural system in the BAU during the plan period. This involves the removal of all marketable trees from an area at the end of the rotation (usually at between 35 to 45 years of age). Due to the poor fertility and the exposed and unstable nature of our sites there is very little scope for alternative systems that remove mature trees more gradually. At clearfell time considerable effort is now put into adjusting felling coupe size and shape to satisfy both environmental and landscape design purposes. Low Impact Silvicultural Systems (LISS) such as 'Small Coupe Felling', 'Change to Broadleaf' and 'Continuous Cover Forestry' are in use in the BAU and it is intended to expand this level where possible during the plan period.
- Thinning is also a natural part of forest management and it involves staged removals of a proportion of trees in a forest over a rotation, and it is a necessary part of standard forestry practice worldwide. Thinning improves the quality of the forest by regulating the space and light provided to trees as they grow. In line with international best practices, Coillte aims to thin where possible all forests to maximise the quality and volume returns from the estate. Thinning will only occur where the practice can be sustained, namely in forests with no stability threat from high winds. High winds and exposure in the BAU is a limiting factor to thinning and

consequently thinning is effectively concentrated in certain areas of the BAU where it is not as exposed and deemed to be more stable. Historically, because of stability concerns, there is limited standard thinning prescriptions used in this BAU with most thinning events having 2 or 3 interventions. The experience in the BAU to date is that thinning interventions of 3 or more often result in wind blow and are therefore not recommended in certain areas of the BAU.

All felling is controlled by the Forest Service which issues felling licences as appropriate under the 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.

In addition to our Five Year Forest Plans, our long-term harvesting and restocking plans for each Business Area Unit (BAU) which covers the period 2026 to 2040 can be found here. Changes to these plans may arise for many reasons such as silvicultural, landscape design, restructuring, etc. Stakeholders are notified of these proposed changes annually. Any queries relating to these plans can be submitted to info@coillte.ie.

New planting and replanting

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

> Key Objective 2
>
> In the South East Leinster BAU, Coillte aims to replant approximately 8,275 hectares 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 13 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 South East Leinster BAU, Coillte aims to construct 66 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 Carlow, Dublin, Kildare, Kilkenny, Wicklow and Wexford Co Councils with a view to improving access.
- Nutrient deficiencies The Northwest 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 Northwest BAU.
- The high proportion of low production forests in the Northwest 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,
- 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 South East Leinster BAU, Coillte aims to manages its 153 Farm Partnerships according to the principles of sustainable forest management

Overall production targets in the South East Leinster BAU 2021-2025

Coillte's proposed operating targets for the South East Leinster BAU for the period of the plan- 2016-2016 are summarised in the table below.

South East Leinster BAU main Coillte production targets 2021 – 2025[5]

Annual Totals					
Year	2021	2022	2023	2024	2025
Establishment					
Planting (ha)	1650	1650	1875	1900	1200
Harvesting Programme					
Harvest categories (000m3)					
Thinnings	103	108	108	108	102
Regeneration felling (P,C,W) felling	404	407	409	405	412
Total	507	515	517	513	514
Felling area (ha)	824	872	878	857	820
Roading Programme					
Roading (km)					
New	16	13	13	12	12
Upgrading	11	11	11	11	11
Total	27	24	24	23	23

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

3.3 Coillte's Non-timber businesses

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 BAU Five Year Forest 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 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 4 – correct as at February 2022			
Name of Project	*Location*	*Status*	*No. of wind turbines/(MW)*
Castlebanny	Kilkenny	In-planning (Art Co Dev.)	21 (11 Coillte Land)
Croaghaun	Carlow	In-planning	7 (5 Coillte Land)
Total			28 (16 Coillte Land)

Proposed third party planning permitted wind turbines on the Coillte estate in BAU 4 - correct as at February 2022			
Name of Wind Farm	*Location*	*Status*	*No. of wind turbines*
Pinewoods	Castlecomer Forest, Co. Kilkenny	Planning permitted	5
Ballymanus	Aughrim Forest, Co. Wicklow	Planning permitted	5
Kyle	Danesfort Forest, Co. Kilkenny	Planning permitted	1
Drehid	Hortland Forest, Co. Kildare	Planning permitted	4
Total			15

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

Proposed projects that will seek / are seeking planning permission for wind turbines on the Coillte estate in BAU 4 – correct as at February 2022			
Name of Wind Farm	Location	Status	No. of wind turbines
White Hills	Seskinrea Forest, Co. Carlow	Pre-planning	1
Total			1

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

Biomass Production

Coillte will consider renewable heat supply opportunities as they arise.

3.3.2 Land sales and 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. And all other recreational activities are managed under a licencing process. These activities can be undertaken 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 on our website.

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 South East Leinster BAU between 2021 and 2025 include:

- engaging with 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 sites including waymarked ways to the highest standards.
- managing unauthorised usage of the recreation infrastructure in line with best management practice and security policy.
- sourcing funding and developing new infrastructure including 'access for all' on a based on needs identified in conjunction with stakeholders and funding agencies, and to enhance local tourism potential.

Key Objective 6

In the South East Leinster BAU, Coillte aims to:

- Provide a high quality recreation offering to the public.
- Maintain all existing recreation sites to the highest standards.
- Work in partnership with proactive communities to upgrade recreation sites.
- Continue to support the aims of the Dublin Mountains Partnership.
- Continue to support the aims of the Wicklow Way Partnership.
- Work in partnership with the Wicklow Outdoor Recreation Committee to develop recreational facilities in the Wicklow area.

3.5 Cultural Heritage and Archaeology in the South East Leinster 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 clearfelling. The introduction of LISS systems can only be achieved gradually and can take up to a rotation length to complete. Currently 25% of the productive area of the BAU, is managed under LISS.

Sites on Coillte Estate managed under LISS

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

Key Objective 7

In the South East Leinster BAU, Coillte aims to maintain and enhance the current level of broadleaves in the BAU, managed for biodiversity.

3.6.3 Biodiversity

At present 18% of the Coillte land area in the South East Leinster BAU is designated and managed for biodiversity.

- 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 6,199 ha identified as old woodland. This represents 10% of the Coillte land in the South East BAU or 23% 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
- 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)
52,983	1,556	62.24	11,818	0.53%	21.26	251,251	4.74

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)
50,830	52,983	0.96	7.67	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 South East Leinster 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 this BAU as yet, it will have an impact on species selection when planning landscape design.

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

4.2 Water Protection

Coillte's 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.

Forestry operations Note deletion 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 watercourses 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, long term fixed sampling sites on selected river(s) has been established in the BAU. The purpose of this sampling is to determine the cumulative impact of forests and associated forest practices have on water quality.

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.

A long term forest ecosystem monitoring plot, part of a national and EU network of tree health plots, has been located in Roundwood Forest since the early 1990s. Ongoing intensive surveys of forest health and the environmental factors thought to predispose trees to damage from biotic and abiotic sources is conducted and entails visual assessments of tree health with a host of other parameters such as soil and soil water surveys, air and rain water quality, tree deposition water quality, tree growth data, tree foliar chemistry, ground vegetation composition and meteorological data. The results are then analysed to determine which factors impact most significantly on forest health nationally and across Europe. This study is conducted in conjunction with the Forest Ecosystem Research Group of University College Dublin and coordinated internationally by the International Cooperative Programme Forests (ICP Forests) in collaboration with the Directorate- General for Environment of the European Commission.

Arising from the environmental sensitivity of the Wicklow Uplands, the BAU has facilitated over the last 10 years a number nationally funded Forests & Water Projects, such as HydroFor (led by UCD in conjunction with UCC & NUIG) and CROW (involving UCD and the Woodlands of Ireland). Ongoing studies include the UCD led, HydroSed project (2019 to 2023) will is looking at flow changes and sediment release from a range of forest operations and

includes assessing the efficacy and performance of commonly used silt mitigation measures. The findings from this and other national research projects will test the efficacy of current best forest practices and guidance and suggest where they can be updated to take account of changes in forest practice over the last 20 years. The BAU are also supporting a short-term EPA lead project called REFORM (2019-2021) assessing how land use practices are influencing naturally acidic waters in the Wicklow Uplands.

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, 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 who have registered with Coillte. Coillte carries out an annual update of our stakeholder register to ensure our records are as accurate as possible;

- Coillte welcomes 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 clear felling. This map forms the basis of public consultation and if concerns are raised about particular areas they are addressed at this time. Coillte endeavour to take on board inputs during this engagement process, while also balancing diverse opinions and contributions from the public in relation to these plans.

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

Incorporation of results of stakeholder engagement in this BAU

Following Coillte public consultation processes, submissions received are acknowledged 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)	Text in this section was reviewed an 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.

within the South East BAU – Update 1	
2.5 Biodiversity and high conservation value forests (HCVF) within the South East 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 South East 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 4 – South East	

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 South East BAU Five Year Forest Plan.	
2.3 Community, Recreation and Tourism Facilities in the Midlands	Submission by Stakeholders West Wicklow Environmental Network raised several topics which were addressed in our response as detailed below Response by Coillte Details of LISS in BAU 4 is provided in Section 3.6.3 of our plan. Our management of aquatic buffer zones is set out in Section 2.9 Water Protection. In relation to the protection of deep peat sites, Coillte have managed the restoration of both blanket and raised bogs through very successful projects and Coillte Nature is continuing to work in this area with details of current projects set out on our website. Coillte staff in BAU 4 collaborate on an ongoing basis with Wicklow Co Co Recration Committee and Wicklow Uplands Councils to ensure the maintenance and provision of recreation facilities in the County is successfully managed. Finally, we look forward to engaging with WWEN in the future and welcome their input.
4.4 Sharing our plans and Consultation	Submission by Stakeholders An individual stakeholder asked about how we inform stakeholders about our consultation process Response by Coillte Details of how Coillte's consultation process is rolled out was provided along with an invitation to register as a stakeholder which ensures information is received.
2.3 Community, Recreation and Tourism Facilities in the Midlands	Submission by Stakeholders A submission from Wicklow Uplands Council highlighted challenges that have become increasingly apparent due to increased visitor numbers to our forests. They also acknowledged Coillte's work with Wicklow Deer Management Partnership and Wicklow Deer Project in order to manage issues as much as possible. Response by Coillte We were pleased to have received a submission from Wicklow Uplands Council and have reviewed the matters raised. We currently actively engage with Wicklow Co Co, NPWS and An Garda Siochana to provide solutions to issues such as car parking, illegal littering, camping and anti-social behaviour. In relation to enhancing biodiversity and protecting areas of sensitivity on our estate, including the Wicklow Uplands, Coillte Nature are working continuously in this area and engage with interested stakeholders regularly to provide updates on key projects nationwide. Coillte look forward to continued engagement with Wicklow Uplands Council.
2.3 Community, Recreation and Tourism Facilities in the Midlands	Submission by Stakeholders Tintern Trails Development Committee made recommendations for further enhancement and development of facilities and services at Tintern Abbey Response by Coillte

	Coillte highlighted work completed to date in this area which included provision of car park and toilet facilities. 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. We look forward to continuous engagement to maintain and enhance the area in cooperation with the local community.
2.3 Community, Recreation and Tourism Facilities in the Midlands	Submission by Stakeholders A number of stakeholders requested that recreation facilities at Jenkinstown Wood be improved. Response by Coillte Investment in the trails in Jenkinstown is planned through collaboration with Kilkenny County Council which is ongoing. We are very hopeful that approval for funding to upgrade the trails will be made available.
1.4 Benefits of Coillte to the Public	Submission by Stakeholders An individual stakeholder requested Coillte's input into proposed restoration of adjoining bog at Tomard Wood, Co Carlow. Response by Coillte Coillte welcomes the opportunity to collaborate with the local community and provide support where possible. Contact details were provided. We look forward to engaging in relation to this in the future.
2.3 Community, Recreation and Tourism Facilities in the Midlands	Submission by Stakeholders Friends of the Forest Donard Glen (FOFDG) raised matters such as conifer planting, management of biodiversity areas, management plans and stakeholder consultation. Response by Coillte Coillte provided information relating to the above as well as contact details of BAU staff so ongoing engagement is facilitated. We look forward to continued engagement with FOFDG in the future.
2.10 Forest Management Issues	Submission by Stakeholders Individual stakeholders raised concerns about illegal vehicular use and path maintenance at Glenart Woods Response by Coillte Coillte committed to erecting signage referencing by-laws as implemented and also carrying out maintenance work on paths as requested.

4.5 Monitoring and Evaluation

Coillte continues to monitor the achievement of its objectives and targets using the proforma set out in Appendix IV. Please refer to this Appendix for results of monitoring for the period 2016-2020.

Appendix I - Summary of Archaeological Sites in South East Leinster BAU

BAU	Type of Monument	No. In BAU	SMRS Number *
B4	Armorial plaque	1	KD009-015003-
B4	Barrow - ring-barrow	5	DU024-005003-, DU024-007----, DU024-008----, DU024-010----, WX006-083004-
B4	Barrow - unclassified	2	DU024-031----, WX029-034----
B4	Battlefield	1	WX037-091----
B4	Bridge	1	KK014-014----
B4	Building	8	KK029-033002-, KK029-033003-, KK029-033004-, KK029-033005-, KK029-033006-, KK029-033007-, KK031-030005-, WI016-009006-
B4	Bullaun stone	1	WI024-026----
B4	Burial	2	WI029-026----, WX042-007002-
B4	Burial ground	1	WI016-006----
B4	Cairn - burial cairn	2	DU025-023001-, WX042-007001-
B4	Cairn - unclassified	13	DU021-047----, DU025-007003-, KK033-015----, KK040-019----, WI010-017----, WI016-009004-, WI016-009005-, WI029-025----, WI031-028----, WI042-032----, WX007-014----, WX016-013----, WX042-075----
B4	Castle - ringwork	1	WX026-012001-
B4	Castle - tower house	3	KD009-015001-, KK007-001001-, KK033-027001-
B4	Castle - unclassified	2	KK005-021----, KK031-028----
B4	Charcoal-making site	22	CW019-032----, WI023-018001-, WI023-018002-, WI023-018003-, WI023-018004-, WI023-018005-, WI023-018006-, WI023-018028-, WI023-018029-, WI023-018030-, WI023-018031-, WI023-018032-, WI023-018033-, WI023-018034-, WI023-018035-, WI023-018036-, WI023-018037-, WI023-018038-, WI023-018039-, WI023-018040-, WI023-029010-, WI024-034----
B4	Children's burial ground	1	WI016-009003-
B4	Church	5	KK022-019001-, WI013-052----, WI016-009----, WX026-019001-, WX036-012001-
B4	Cist	1	DU025-007002-
B4	Clochan	1	WI015-053----
B4	Cross - Wayside cross	1	WI023-022----
B4	Cross-inscribed pillar	1	WI016-005----
B4	Cross-inscribed stone	2	DU025-082----, WX036-012003-
B4	Cross-slab	1	WI005-113----
B4	Designed landscape - folly	1	KK033-027003-
B4	Earthwork	2	CW012-036----, KK007-001002-
B4	Ecclesiastical enclosure	5	KD018-014----, KK022-019002-, WI016-009002-, WI023-034----, WX036-012004-

B4	Enclosure	61	CW023-005----, CW026-009----, DU025-015----, DU025-020001-, DU025-020002-, DU025-021002-, DU025-026----, DU025-027001-, DU025-027002-, DU025-028001-, DU025-028003-, KK005-006----, KK005-018----, KK008-038----, KK008-086001-, KK008-086002-, KK008-105----, KK013-034----, KK013-131----, KK024-076----, KK027-082----, KK028-015----, KK028-033----, KK033-048----, KK035-103----, KK039-006----, WI005-040----, WI005-041001-, WI005-115001-, WI005-116----, WI005-117----, WI005-118----, WI007-037001-, WI007-037002-, WI012-015----, WI012-016----, WI012-017----, WI012-033----, WI012-034----, WI018-003----, WI022-002----, WI022-003----, WI024-002----, WI028-018----, WI029-023----, WI030-021----, WI031-029----, WI033-004----, WI034-007----, WI035-002----, WI035-003----, WI035-044----, WI038-002----, WI040-003----, WI042-018----, WI043-019----, WI044-010----, WX020-023002-, WX020-023003-, WX020-023004-, WX020-023007-
B4	Font	1	KD009-014006-
B4	Fulacht fia	4	DU026-138----, KK008-143----, KK023-050----, KK032-051----
B4	Graveyard	3	WI016-009001-, WX026-019002-, WX036-012002-
B4	Hillfort	3	WI008-015----, WI013-001----, WI027-010----
B4	House - 17th century	1	WX011-010----
B4	House - 18th/19th century	2	DU025-001003-, KK014-007----
B4	House - fortified house	1	KD009-015002-
B4	House - indeterminate date	5	WX026-012002-, WX026-012003-, WX026-012004-, WX026-012005-, WX026-012006-
B4	Hut site	12	KK029-032002-, KK033-049----, WI005-041002-, WI005-115002-, WI005-115003-, WI006-009----, WI006-010----, WI015-051----, WI015-051001-, WI015-052----, WI027-084----, WX002-040----
B4	Inscribed stone	1	DU025-023002-
B4	Kiln	1	WX007-031----
B4	Mass-rock	1	CW024-001----
B4	Megalithic structure	2	DU024-047003-, WI029-001----
B4	Megalithic tomb - passage tomb	10	DU024-005002-, DU024-034----, DU024-035----, DU024-046----, DU024-047001-, DU024-047002-, DU025-001001-, DU025-001002-, DU025-025----, WI005-092----
B4	Megalithic tomb - portal tomb	1	KK039-044----
B4	Megalithic tomb - wedge tomb	3	DU025-007001-, DU025-022----, KK035-114----
B4	Memorial stone	1	KK014-014001-
B4	Moated site	4	KK029-033001-, WX030-025----, WX036-057----, WX042-001----
B4	Monumental structure	1	WX037-083----
B4	Mound	3	WI006-011----, WI024-035----, WI035-001----
B4	Ogham stone	1	WI022-012----

B4	Redundant record	13	CW023-004----, CW025-008----, KK032-034----, KK035-028----, KK035-039----, WX001-006----, WX002-015----, WX002-020----, WX018-035----, WX018-036----, WX024-060----, WX035-036----, WX035-096----
B4	Ringfort - cashel	7	CW023-006----, CW024-025----, CW026-021----, WI003-009----, WI036-020----, WX002-012----, WX002-060----
B4	Ringfort - rath	23	KK008-001----, KK008-002----, KK010-023----, KK013-039----, KK032-029----, WI003-008----, WI012-014----, WI015-027----, WI015-028----, WI021-018----, WI027-030----, WI039-001----, WI039-027----, WI040-025----, WI042-040----, WI044-006----, WX001-005----, WX002-062----, WX006-030----, WX006-031----, WX007-017----, WX024-027----, WX024-028----
B4	Ringfort - unclassified	5	DU025-028002-, DU025-029001-, DU026-053----, WI007-077----, WI031-013----
B4	Ritual site - holy tree/bush	1	KK032-026----
B4	Ritual site - holy well	8	KD018-015----, KK006-002----, WI013-052001-, WI024-010----, WI034-035----, WX007-013----, WX036-036001-, WX037-003----
B4	Ritual site - holy/saint's stone	1	WX036-036002-
B4	Ritual site - pond	3	WX006-083001-, WX006-083002-, WX006-083003-
B4	Road - class 1 togher	3	KD012-004001-, KD027-001001-, TS036-051----
B4	Road - class 3 togher	2	KK008-151001-, KK008-151002-
B4	Road - road/trackway	2	WI016-009007-, WI017-001----
B4	Road - unclassified togher	1	KK012-081----
B4	Rock art	1	WX002-041----
B4	Rock art (present location)	1	CW024-056----
B4	Round tower	1	KK031-030001-
B4	Settlement cluster	2	WI006-017----, WI027-078003-
B4	Settlement deserted - medieval	1	WI005-009----
B4	Souterrain	1	WX001-008----
B4	Standing stone	7	CW023-006001-, DU025-021001-, WI016-022----, WI022-031----, WI023-035----, WX020-023001-, WX035-079----
B4	Stone circle	1	WI005-005----
B4	Stone row	1	KK033-005----
B4	Structure	2	KK036-040----, WI016-009008-
B4	Urn burial	1	KD037-024----

* 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 South East Leinster BAU**

Special habitats in South East Leinster BAU

Main Properties	Habitat Quality	Management 2021-2025	Issues to be Addressed
Upland Blanket Bog (PB2) and Wet Heath (HH3)- HCV			
Property: Seahan County: Dublin European Site: Wicklow Mountains SAC	Good example of a mosaic of upland blanket bog and wet heath.	Ensure that overgrazing and burning do not occur on open upland habitats.	Maintain open peatland habitats and control encroaching conifers in open areas.
Property: Croghtenclogh County: Kilkenny European Site: River Barrow and River Nore SAC (adjacent)	Moderate sized largely intact blanket bog within Coan Bogs NHA. Property also associated with riparian salmonid habitat (Riven Dinnin).	Retain existing unplanted blanket bog habitat. Increase area of open blanket bog habitat at expense of conifers. Block drains where appropriate.	Consultation with adjoining landowners re effect of blocked drains to their property.
Rich fen and flush (PF1)			
Property: Foulkscourt County: Kilkenny European Site: N/A	Moderate sized semi-natural habitat. Calcareous fen (Annex 1) with rare plants. Associated with turlough and riparian habitat (River Goul). Small area of wet woodland and conifers.	Retain fen habitat. Restore conifer woodland to WN4 and protect riparian zone.	Control encroaching conifers in open areas of fen and flush habitat.
Upper salt marsh (CM2)- HCV			
Property: Saunderscourt County: Wexford European Site: Slaney River Valley SAC	Moderate sized area of native and mixed woodland associated with Annex I estuary and salt marsh habitats. Rare bird breeding site. Old woodland site (OWS) and an overlap with Wexford Slobs and Harbour SPA.	Maintain open areas.	Control any potential encroaching exotic conifers. Area not to be let for bird / game hunting.

Native and Mixed Woodlands in South East Leinster BAU

Main Properties	Habitat Quality	Management 2021-2025	Issues to be Addressed
Oak-birch-holly woodland (WN1) - HCV			
Property: Drummin County: Carlow European Site: River Barrow and River Nore SAC	Extensive area with good WN1 and WN2 woodland. Good flora. Rare plants present and an old woodland site (OWS).	Normal forest management for next 5 years. Retain existing oak-birch-holly woodland. Increase area of oak - ash woodland habitat.	Monitor site and control of invasive species where required.

Property: Ballyfad County: Wexford European Site: N/A	Extensive area with mix of WD1, WN1 and WN2 woodland. OWS with moderately good flora.	Retain as natural reserve. Remove any young beech on an on-going basis. Restore to native woodland.	
Property: Ballygannon County: Wicklow European Site: Vale of Clara (Rathdrum Wood) SAC	Extensive mosaic of high-quality woodland with Avondale River. Millennium woodland site and an overlap with both Vale of Clara Nature Reserve and Vale of Clara (Rathdrum Wood) pNHA.	Retain sessile oak woodland as Natural Reserve. Increase area of native WN1 woodland.	Retain old Norway spruce as habitat for red squirrel. Thinning of the Millennium forest to allow broadleaves to further develop.
Property: Browns Wood County: Kilkenny European Site: N/A	Moderate sized mixed broadleaf woodland with some oak-birch-holly (WN1). Old woodland site with good flora.	Non-intervention for next 5 years. Monitor for invasive species and remove if necessary. Restore/increase area of WN1 woodland.	Monitor site and control of invasive species where required.
Oak-ash-hazel woodland (WN2) Listed in EU Habitats Directive, Annex II			
Property: Barnadown County: Wexford European Site: N/A	Extensive area with mix of WD1, WN1 and WN2 woodland. Moderately good flora. OWS with adjoining fourth order river Bracken.	Retain/restore to WN2 woodland. Moderate size oak-ash woodland with good natural regeneration overtaking conifers.	Monitor site and control of invasive species where required and select conifers for removal at next thinning.
Property: Camolin County: Wexford European Site: N/A	Extensive area of diverse moderate quality woodland types. Millennium woodland. Good native woodland flora. OWS and Park.	Thin conifers in favour of natural regeneration of native broadleaves. Increase area of native WN1 and WN2 woodland.	Monitor site and control of invasive species where required.
Property: Park Wood County: Wexford European Site: N/A	Moderate sized area of native woodland and replanted conifers. Good flora and natural regeneration of native broadleaf trees. OWS.	No involvement in the next 5 years. Monitor for exotic species invasion. Restore to WN2.	

Property: Seskin County: Wicklow European Site: N/A	Moderate size oak-ash woodland. Adjacent to native woodland at Lackan. Located within Glencree Valley pNHA.	Removal of invasive species – laurel, and regenerating beech. Retain existing oak-ash woodland. Increase native woodland habitat and remove invasive non-native species.	
Property: Glenmullen County: Kilkenny European Site: N/A	Extensive area of mixed broadleaf and native woodland associated with sensitive catchment area and salmonid habitat (SAC). Good flora.	Remove Douglas Fir in thinning. Retain semi-natural woodland and restore conifers to WN2. Protect riparian habitat.	
Oak-ash-hazel woodland (WN2)- HCV			
Property: Saunderscourt County: Wexford European Site: Slaney River Valley SAC	Moderate sized area of native and mixed woodland associated with Annex I estuary and salt marsh habitats. Rare bird breeding site OWS. Partially within Wexford Slobs and Harbour pNHA.	Coppice some of the Hazel on an on-going basis. Encourage the Ash/Oak. Restore/maintain area of native woodland. Increase native WN2 woodland.	Monitor site and control of invasive species where required.
Wet willow-alder-ash woodland (WN6) Listed in EU Habitats Directive, Annex II			
Property: Loggan Lower County: Wexford European Site: N/A	Extensive area of native woodland and conifer woodland associated with wetland. Mineral- rich sedge swamp habitat.	Block drains in wet areas. Remove any SS in sedge swamp Restore sedge-rich swamp/wetland habitat. Sensitive removal of conifers on wet ground. Block appropriate drains.	Monitor site and control of invasive species where required.
Mixed broad-leaved woodland (WD1)- HCV			
Property: Bahana County: Carlow European Site: River Barrow and River Nore SAC	Extensive area of mixed woodland. OWS. Good flora. NHA. Associated with River Barrow SAC.	Remove beech periodically Maintain some mixed woodland. Restore native woodland. Protect riparian habitat.	Monitor site and control of invasive species where required.
Mixed broad-leaved woodland (WD1)			
Property: Camolin County: Wexford European Site: N/A	Extensive area of diverse moderate quality woodland types. Millennium woodland with good native woodland flora, OWS and Park.	Manage OWS as per FS guidelines and ecological plans.	Monitor site and control of invasive species where required.

Property: Browns Wood County: Kilkenny European Site: N/A	Moderate sized mixed broadleaf woodland with some oak-birch-holly (WN1). Good flora, OWS.	Non-intervention for the next 5 years. Restore increase area of WN1 woodland.	Monitor site and control of invasive species where required.
Mixed broad-leaved/conifer woodland (WD2)			
Property: Rostygah County: Wicklow European Site: N/A	Extensive area of good quality mixed woodland. Overlap with Avoca River Valley pNHA.	Work has already commenced in 2010 to increase the area of mixed broadleaf/pine woodland. Increase area of mixed pine/broadleaf woodland. Restore areas of native woodland.	Monitor for natural regeneration of oak and other native species.
Conifer woodland (WD4)- HCV			
Property: Bahana County: Carlow European Site: River Barrow and River Nore SAC	Extensive area of mixed woodland. OWS. Good flora. NHA. Associated with R. Barrow SAC and Native woodland site (NWS_33).	Maintain some mixed woodland. Restore native woodland and protect riparian habitat.	Monitor site and control of invasive species where required.
Property: Coonogue County: Carlow European Site: River Barrow and River Nore SAC	Moderate sized area of conifers. OWS. Part SAC and associated with riparian habitat and sensitive catchment area for pearl mussel.	Restock with Oak. Establish native woodland (WN1). Protect riparian habitat.	
Property: Drummin County: Carlow European Site: River Barrow and River Nore SAC	Extensive area with good WN1 and WN2 woodland. OWS with good flora with SAC overlaps and riparian area. Rare plants.	Normal forest operation to be carries out over next 5 years. Restore to native woodland.	
Property: Ballyboy County: Wicklow European Site: Wicklow Mountains SAC	Extensive area of conifers. Part of the property is an OWS and SAC overlap.	Planned heavy thin of Sitka spruce and larch with the aim to reduce the level non-native conifers present and establish oak-birch-holly woodland.	

Property: Croghtenclogh County: Kilkenny European Site: River Barrow and River Nore SAC (adjacent)	Moderate sized conifer woodland and largely intact blanket bog. Associated with riparian salmonid habitat (River Dinnin).	Phase out conifers and non-natives over time through harvesting and establishment processes. Retain existing unplanted blanket bog habitat. Increase area of open blanket bog habitat at expense of conifers management guidelines. Protect riparian habitat.	

Protected or rare species in South East Leinster BAU

Main Properties	Habitat Quality	Management 2021-2025	Issues to be Addressed
Freshwater pearl mussel (*Margaritifera margaritifera*)- HCV			
Property: Barnahaskin County: Carlow European Site: River Barrow and River Nore SAC	Mixed forest property overlapping an SAC designated for Freshwater Pearl Mussel and located within a catchment of SAC population listed in S.I 296 of 2009.	Establish riparian zone with appropriate setbacks at next operations were required to ensure protection of water sensitivities.	To comply with all guidelines and directives during any operations in the area.
Merlin (*Falco columbarius*)- HCV			
Property: Conavalla County: Wicklow European Site: Wicklow Mountains SPA	Property containing areas of open habitat suitable for Merlin foraging within SPA and surrounded by large open expanses of heath and bog.	Maintain open areas of suitable foraging.	Observe any timing restrictions to forestry operations with and in close proximity to designated areas.
Leisler's bat (*Nyactilis leisleri),* Brown long-eared bat *(Plecotus auritus)* and other bat species-HCV			
Property: Tintern County: Wexford European Site: Bannow Bay SAC	Forage site for whiskered bats from nearby Abbey with suitable foraging habitat along woodland rides and edge. Partially OWS and partial SAC overlap.	Any thinning and clearfell to be carried out in spring or autumn. Maintain habitat along woodland rides and edge.	Be aware of current legislation and any restrictions to operations that might apply.
Property: Beaufield County: Wexford European Site: N/A	OWS with buildings. Brown long-eared bats and possibly Natterer's bat present.	Avoid any work or disturbance on building from May to August. Ensure bat access to buildings and comply with bat legislation.	Be aware of current legislation and any restrictions to operations that might apply.

Property: Jenkinstown County: Kilkenny European Site: River Barrow and River Nore SAC	OWS and parkland with old stone building, ex quern, in yard. SAC designated River Dinin [Nore] flows through section of property with suitable foraging habitat along woodland rides and edge.	Monitor and maintain – Protect cultural features during all forest operations through MUSF and standard mitigations.	Maintain and protect old stone building. Be aware of current legislation and any restrictions to operations that might apply.
Property: Woodstock County: Kilkenny European Site: River Barrow and River Nore SAC	Extensive OWS with Icehouse on Poyntz road, roosting site for Daubenton's bats. SAC overlaps property with suitable foraging habitat along woodland rides and edge. Also, adjoins Murphy's of The River pNHA.	Monitor and maintain protect cultural features during all forest operations through MUSF and standard mitigations. Maintain and protect Icehouse – gate recently erected to protect bat roost.	Be aware of current legislation and any restrictions to operations that might apply.
Nightjar (*Caprimulgus europaeus*) - HCV			
Property: Ballyvalloo County: Wexford European Site: Screen Hills SAC	Presence not confirmed. Conifer dominated property with lake present in south. Adjacent to open areas of SAC and an overlap with Screen Hills Pnha.	Nests on ground Observe for presence of Nightjar.	Be aware of current legislation and any timing restrictions to operations where presence has been confirmed.
Little Egret (*Egretta garzetta*) - HCV			
Property: Saunderscourt County: Wexford European Site: Slaney River Valley SAC	Moderate sized area of native and mixed woodland associated with Annex 1 estuary and salt marsh habitats. Breeding site – second largest colony in Ireland. OWS with overlap with Wexford Slobs and Harbour pNHA.	Avoid disturbance by forestry operations during breeding season.	Total ban on all game or deer hunting in Saunderscourt Forest property. Be aware of current legislation and any timing restrictions to operations.
Otter (*Lutra lutra*) -HCV			
Property: Wilton County: Wexford European Site: Slaney River Valley SAC	Property consisting of old demesne woodland in several sections. Partially an OWS with the SAC designated River Boro connecting to several points of the property. Sensitive catchment area.	Maintain riparian habitat and protect any suitable Otter habitat where present.	Adhere to Forest Service guidelines with protection of designated riparian area and suitable otter habitat.

Species

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

Published National Red Lists	
RED STATUS- Ireland Red Lists using IUCN (2001)	BoCCI-Birds of Conservation Concern in Ireland 2020-2026
- RE Regionally Extinct - CR Critically Endangered - EN Endangered - VU Vulnerable - NT Near threatened - LC least concern - dd data deficient - na not assessed	- Red High conservation concern - Amber Medium conservation concern - Gren Low conservation concern

SPECIES	RED STATUS	BoCCI
Leisler's bat *(Nyactilis leisleri)*	LC	
Otter *(Lutra lutra)*	LC	
Hen Harrier *(Circus cyaneus)*		Amber
Great Spotted Woodpecker (*Dendrocopos major*)		Amber
Pine Marten *(Martes martes)*	LC	
Narrow-leaved helleborine (*Cephalanthera longifolia*)	VU	
Badger *(Meles meles)*	LC	
Greater broomrape (*Orobanche rapum-genistae*)	NT	
Red Kite (*Milvus milvus*)		Green
Red Grouse *(Lagopus lagopus hibernicus)*		Red
Great Spotted Woodpecker		Green
Red Squirrel *(Sciurus vulgaris)*	LC	
Little Egret (*Egretta garzetta*)		Green
Nightjar (*Caprimulgus europaeus*)		Red
Brown long-eared bat *(Plecotus auritus)*	LC	

Peregrine Falcon (*Falco peregrinus*)		Green
Merlin (*Falco columbarius*)		Amber

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

Appendix III – Recreation Facilities in the BAU

Location	Description
Clogrennan, Carlow	• Layby • 1 National Looped walk • Picnic area
Kilbrannish, Carlow	• Car park • 2 National Looped walks • South Leinster Way • Picnic area
Rath Wood, Carlow/Wicklow	• Looped Walk • Duck pond • Neighbour Wood Scheme
Barnaslingan, Dublin	• Car park with automated gate • 2 Looped walks (one multi access) • Dublin Mountains Way • Permanent orienteering • Wheel-O orienteering • Watchable wildlife
Carrickgollogan, Dublin	• Car park • 2 Looped walks • Dublin Mountains Way • Permanent orienteering • Watchable wildlife
Cruagh Wood, Dublin	• Car park • Picnic area • Slí na Slainte looped walk • Mountain Access route & loop • Dublin Mountains Way • Watchable wildlife
Hell Fire Club, Dublin	• Car park with automated gate • 2 Looped walks • Permanent orienteering • Watchable wildlife
Massy's Estate, Dublin	• 2 Looped walks • Permanent orienteering
Slievethoul & Lugg, Dublin	• 2 Looped walks • Layby
Tibradden (Pine Forest), Dublin	• Car park • Mountain Access walk • Dublin Mountains Way • Wicklow Way • Watchable wildlife • Ziplt Aerial Trails
Kilmashogue, Dublin	• Car park • Wicklow Way

Location	Description
Tiknock/Ballyedmonduff, Dublin	• Car park • Mountain Access walk • Looped walk • Mountain Bike Trail • Dublin Mountains Way • Wicklow Way • Permanent orienteering • Viewing area • Watchable wildlife
Donadea Forest Park, Kildare	• Forest Park • Car park • Picnic areas • 3 looped Walks • Leisure cycling • Permanent orienteering • Café
Moore Abbey, Kildare	• Car park • Picnic area • 3 looped Walks
Mullaghreelan Wood, Kildare	• Car park • Picnic area • 2 looped Walks
Castlemorris, Kilkenny	• Car park • 2 looped walks
Coill na Fhaltaigh, Kilkenny	• Car park • 2 looped walks • Millenium forest
Jenkinstown, Kilkenny	• Car park • 2 looped walks
Woodstock, Kilkenny	• Layby • Trails • South Leinster Way • Re-development in partnership with Kilkenny CoCo.
Camolin, Wexford	• Car park • Millennium Forest • Forest walks
Carrickbyrne Hill, Wexford	• Car park • Picnic area • 3 looped Walks
Coolmelagh, Wexford	• Car park • 2 looped walks
Shelmaliere / Forth Mountain, Wexford	• Car park • Forest walks
Tintern Abbey, Wexford	• Car park • Forest walks • Picnic area
Tara Hill, Wexford	• Lay by • Forest walks • Viewing area
Courtown, Wexford	• Car Park • Way marked trails

Location	Description
Avoca, Wicklow	• Car Park • Looped Walk.
Avondale Forest Park, Wicklow	• Forest Park • Car park • Picnic areas • looped Walks • Leisure cycling • Permanent orienteering • Playground • Café
Ballinafunshoge, Wicklow	• Car park • Walking trails • Wicklow Way
Ballinastoe, Wicklow	• Car park • Walking trails • Wicklow Way • Mountain Bike Trail • Mountain Bike hire & tuition
Ballygannon Wood, Wicklow	• Car park • Millennium Forest • 2 looped walks • Picnic area • Jubilee walk
Ballymoyle Hill, Wicklow	• Layby • Forest Walks • Views
Cloon / Curtlestown, Wicklow	• Car park • Walking trails • Wicklow Way
Crone Woods, Wicklow	• Car park • Looped walk • Wicklow Way • Mountain Access
Djouce Woods, Wicklow	• Car park • 2 Looped walks • Wicklow Way • Mountain Access
Drumgoff, Wicklow	• Car park • Forest walks • Wicklow Way • Mountain Access
Glenart Wood, Wicklow	• Car park • Looped walk
Kindletown Wood, Wicklow	• Car Park • Looped Walk
Lackan Wood, Wicklow	• Parking area • Wicklow Way
Roddenagh Wood, Wicklow	• Car Park • Looped Walk
Shay Elliot, Wicklow	• Car park • Forest walk to viewing area • Mountain Access

Location	Description
Shelton, Wicklow	• Car park • Millennium Forest • Forest walks
The Devil's Glen, Wicklow	• Car park • 2 Looped walks • Picnic area • Waterfall
Trooperstown, Wicklow	• Car park • Picnic area • Woodland walks
Newtownmountkennedy, Wicklow	• Woodland walk
Deputy's Pass, Wicklow	• Car Park • Woodland walk • Picnic area
Tinnakilly, Wicklow	• Layby • Looped walk

Appendix IV – BAU 4 Monitoring

BAU 4 – Monitoring 2016-2020		
Economic Parameters		
No	Parameter	Output
Establishment		
1	Afforestation (Hectares)	32
2	Restocking (Hectares)	5,503
3	Later Manuring Area Aerially Fertilised (Hectares)	89
Harvesting		
4	Clearfelled area (Hectares)	5,367
5	Thinning Area (Hectares)	10,717
Silvicultural Systems		
6	LISS*Areas including OWS** (Hectares)	9,066
Species Composition		
7	Primary species	58% area of BAU
8	Secondary species***	16% area of BAU
9	Broadleaves	18% area of BAU
10	Open Space	8% 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)	242.08
Environmental Parameters		
No	Parameter	Output
Biodiversity		
13	Biodiversity area identified	17%
14	Biodiversity sites identified	6,382
15	Biodiversity management plans completed	24
16	Biodiversity features recorded	9,686
17	Deadwood: Standing	Please refer to Section 3.6.3
18	Deadwood: Fallen	Please refer to Section 3.6.3
19	Forest roads constructed	45,383m
20	Forest road upgrades	304,370m
Forest Health		
21	BAU Forest Health Survey - Results	15 sites
22	BAU Forest Health Survey - Actions	12 sites – filling in
Abiotic Damage		
23	Fires – area damaged (Hectares)	375.87
24	Windthrow area (Hectares)	104.45
Deer Culls		
25	Deer Cull Returns	1,551
Social Parameters		
No	Parameter	Output
Cultural Heritage		
26	Protected archaeological monuments identified	387

Recreation		
27	No of Deer Licences Issued	103
28	Hunting (Game) Licences Issued	121
29	Recreation Licences Issued	1,056
30	Visitors to forest parks in BAU	3,664,449
Consultation		
31	Stakeholder Queries	474
Community		
32	Community partnerships	16
Health and Safety		
33	Dumping & Litter	Please 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 2016-2020

BAU	2016	2017	2018	2019	2020	Grand Total
B4	384,597	353,893	455,775	472,602	210,789	1,877,656

(B) Forecast Volumes 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
CW01 - Seskinrea	1,046	3,170	24,211	4,629	17,682	1,787	1,932	5,804	3,220	1,254	1,576	10	53	16	32	2
CW02 - Hackettstown	493	2,673	5,067	3,721	4,891	656	81	0	81	180	1,570	5	11	7	8	2
CW03 - Mount Leinster	2,343	12,154	13,823	18,884	21,437	15,322	2,143	2,540	571	2,485	256	25	25	39	39	30
DU01 - Dublin City	76,338	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DU02 - South Dublin	2,032	318	1,269	9,275	0	0	3,091	2,293	3,667	3,108	2,605	1	3	20	0	0
KE01 - Rahin	244	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KE02 - Lullymore	872	258	6,994	179	0	0	0	0	0	0	0	1	14	0	0	0
KE03 - Clonmoyle	1,565	3,450	1,670	2,426	0	3,110	290	137	822	0	0	8	4	6	0	7
KE04 - Brackney	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KE05 - Monasterevin	333	2,992	0	706	0	0	0	125	0	99	0	6	0	1	0	0
KE06 - Donadea	243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KE07 - Hortland	591	2,569	4,867	4,165	0	0	0	0	0	0	0	5	9	7	0	0
KK01 - Lisdowney	1,342	8,683	2,037	1,698	35	0	3,282	896	4,606	1,571	977	21	5	3	0	0
KK02 - Castlecomer	1,976	10,158	38,682	4,902	12,824	18,648	3,874	5,187	6,548	5,418	5,970	27	79	11	29	46
KK03 - Danesfort	960	3,144	1,461	6,728	333	2,993	1,030	1,854	488	2,630	1,225	6	4	14	1	5
KK04 - Pilltown	1,838	1,988	5,174	3,748	19,372	9,995	2,388	820	1,055	3,890	3,974	4	12	7	50	24
KK05 - Mullinavat	1,893	4,484	7,086	4,556	6,806	22,898	3,661	8,238	7,011	6,057	9,272	8	28	17	16	46
KK06 - Woodstock	2,919	31,772	5,504	19,917	20,588	8,522	5,209	3,408	5,117	8,145	7,319	64	15	39	58	20

WW01 - Blessington	2,146	19,694	46,345	35,707	19,714	34,627	3,706	2,819	2,382	1,436	3,519	37	97	75	42	63
WW02 - Glencree	1,354	22,210	14,586	12,151	6,338	33,628	533	1,137	446	1,711	399	35	29	22	13	49
WW03 - Roundwood	1,558	3,817	3,228	11,849	19,423	9,514	3,078	1,630	3,145	3,230	5,130	7	6	24	31	15
WW04 - Glendalough	3,015	20,318	55,496	30,202	14,110	45,238	3,767	1,631	4,346	1,264	1,242	37	113	60	26	84
WW05 - Hollywood	2,626	17,601	14,594	7,948	19,904	4,831	4,702	8,147	5,116	7,635	6,816	35	28	19	28	9
WW06 - Glen of Imaal	3,341	44,096	25,829	44,960	49,142	36,835	5,416	4,314	8,176	6,079	6,429	87	56	88	97	74
WW07 - Glenmalure	3,780	58,455	50,387	29,300	57,394	49,688	3,679	4,149	2,512	2,626	1,313	118	99	57	103	93
WW08 - Glenealy	2,966	11,899	7,388	15,269	2,489	14,258	7,131	5,264	6,922	8,930	9,635	29	19	36	9	28
WW09 - Avonmore	2,683	21,555	10,773	29,228	21,046	15,119	7,669	5,313	6,162	4,775	3,576	48	27	67	62	27
WW10 - Aughrim	3,755	50,838	20,998	38,850	32,319	18,853	11,190	15,339	9,659	12,372	6,163	107	48	88	66	44
WW11 - Shillelagh	1,704	1,412	8,469	3,370	20,166	4,257	9,822	3,939	9,088	5,717	3,203	3	16	5	58	6
WW12 - Avondale	144	3,536	1,814	3,484	0	0	0	0	0	0	0	7	3	8	0	0
WX01 - Croghan	2,456	2,594	12,050	14,205	3,492	17,022	4,239	6,186	5,451	4,030	4,708	6	25	31	7	30
WX02 - Sliabh Bui	1,013	5,229	8,165	15,627	10,511	12,594	1,979	1,942	1,347	1,166	3,001	10	16	36	21	28
WX03 - Ballymore	612	2,222	175	4,442	274	3,338	325	83	639	385	672	6	0	9	0	5
WX04 - Ballycrystal	2,165	17,602	3,526	0	7,510	4,242	1,898	1,267	1,146	1,581	1,420	33	8	0	17	7
WX05 - Castleboro	746	2,089	2,813	18,965	3,362	2,631	964	2,880	1,027	3,402	957	5	8	47	8	13
WX06 - Bree Hill	806	370	0	3,783	8,429	7,104	317	1,364	713	1,125	2,884	1	0	8	18	24
WX07 - Kilbride	697	361	1,218	4,256	2,620	7,752	1,127	2,405	744	3,014	240	1	6	10	10	23
WX08 - Forth	1,021	8,779	259	284	2,976	2,874	3,738	5,340	4,517	2,523	4,994	19	1	1	8	9
WX09 - Tinnacarrick	424	1,265	958	0	0	3,444	424	1,639	1,239	343	1,227	2	5	0	0	7

Appendix VI – Catchments and Sub-Catchments in BAU 4

BAU No.	WFD Catchment No.	WFD Catchment Name	WFD Sub_Catchment No.	WFD Sub_Catchment Name
4	08	Nanny-Delvin	08_2	PALMERSTOWN_SC_010
4	09	Liffey and Dublin Bay	09_11	Liffey_SC_040
4	09	Liffey and Dublin Bay	09_16	Dodder_SC_010
4	09	Liffey and Dublin Bay	09_17	Mayne_SC_010
4	09	Liffey and Dublin Bay	09_2	Liffey_SC_030
4	09	Liffey and Dublin Bay	09_9	Lyreen_SC_010
4	09	Liffey and Dublin Bay	09_13	Liffey_SC_010
4	09	Liffey and Dublin Bay	09_7	Liffey_SC_050
4	09	Liffey and Dublin Bay	09_15	Liffey_SC_090
4	09	Liffey and Dublin Bay	09_14	Liffey_SC_070
4	09	Liffey and Dublin Bay	09_4	Tolka_SC_020
4	09	Liffey and Dublin Bay	09_6	Liffey_SC_060
4	09	Liffey and Dublin Bay	09_8	King's[Liffey]_SC_010
4	09	Liffey and Dublin Bay	09_12	Liffey_SC_020
4	10	Ovoca-Vartry	10_2	DerryWater_SC_010
4	10	Ovoca-Vartry	10_7	Avonmore_SC_020
4	10	Ovoca-Vartry	10_1	NEWCASTLE[WICKLOW]_SC_010
4	10	Ovoca-Vartry	10_6	Avonmore_SC_010
4	10	Ovoca-Vartry	10_5	Dargle_SC_010
4	10	Ovoca-Vartry	10_9	Avoca_SC_020
4	10	Ovoca-Vartry	10_4	Vartry_SC_010
4	10	Ovoca-Vartry	10_10	Avonbeg_SC_010
4	10	Ovoca-Vartry	10_3	Avoca_SC_010
4	10	Ovoca-Vartry	10_8	Redcross_SC_010

4	11	Owenavorragh	11_2	Owenavorragh_SC_010
4	11	Owenavorragh	11_3	Inch[Wexford]_SC_010
4	11	Owenavorragh	11_1	Cahore_SC_010
4	12	Slaney & Wexford Harbour	12_11	Derry[Slaney]_SC_010
4	12	Slaney & Wexford Harbour	12_7	Urrin_SC_010
4	12	Slaney & Wexford Harbour	12_4	Slaney_SC_080
4	12	Slaney & Wexford Harbour	12_9	Derreen_SC_010
4	12	Slaney & Wexford Harbour	12_6	Slaney_SC_040
4	12	Slaney & Wexford Harbour	12_8	Slaney_SC_050
4	12	Slaney & Wexford Harbour	12_5	FORTH_COMMONS_SC_010
4	12	Slaney & Wexford Harbour	12_13	Bann[Wexford]_SC_010
4	12	Slaney & Wexford Harbour	12_10	Slaney_SC_030
4	12	Slaney & Wexford Harbour	12_12	Slaney_SC_010
4	12	Slaney & Wexford Harbour	12_16	Slaney_SC_020
4	12	Slaney & Wexford Harbour	12_1	Slaney_SC_070
4	12	Slaney & Wexford Harbour	12_3	Slaney_SC_060
4	12	Slaney & Wexford Harbour	12_14	Boro_SC_010
4	12	Slaney & Wexford Harbour	12_2	Tinnokilla[Stream]_SC_010
4	12	Slaney & Wexford Harbour	12_15	WHITEFORT_SC_010
4	13	Ballyteigue-Bannow	13_4	KISHA_SC_010
4	13	Ballyteigue-Bannow	13_3	CURRAGHMORE_SC_010
4	13	Ballyteigue-Bannow	13_5	Corock_SC_010
4	13	Ballyteigue-Bannow	13_1	Owenduff[Wexford]_SC_010
4	13	Ballyteigue-Bannow	13_2	Bridgetown[Wexford]_SC_010
4	14	Barrow	14_9	Greese_SC_010
4	14	Barrow	14_8	Barrow_SC_120
4	14	Barrow	14_4	Barrow_SC_100
4	14	Barrow	14_7	Barrow_SC_130

4	14	Barrow	14_19	Barrow_SC_150
4	14	Barrow	14_10	Barrow_SC_140
4	14	Barrow	14_6	Lerr_SC_010
4	15	Nore	15_4	Nore_SC_100
4	15	Nore	15_6	Nore_SC_090
4	15	Nore	15_2	Glory_SC_010
4	15	Nore	15_17	Nore_SC_120
4	15	Nore	15_5	Munster_SC_010
4	15	Nore	15_19	Nore_SC_110
4	15	Nore	15_18	Nore_SC_140
4	15	Nore	15_20	Nore_SC_130
4	15	Nore	15_8	Nore_SC_080
4	15	Nore	15_11	King's[Kilkenny]_SC_010
4	16	Suir	16_27	Pil_SC_010
4	16	Suir	16_19	Williamstown_SC_010
4	16	Suir	16_29	Blackwater[Kilmacow]_SC_010
4	16	Suir	16_21	Suir_SC_040
4	16	Suir	16_15	Lingaun_SC_010
4	16	Suir	16_16	Suir_SC_140
4	16	Suir	16_24	Anner_SC_010

Appendix VII – BAU Map