An Taisce Submission

Re: Forests, Products and People
Ireland’s Forest Policy – a renewed vision
Re: Forests, Products and People Ireland’s Forest Policy – a renewed vision

Dear Sir/Madam,

An Taisce would like to make the following comments in relation to the public consultation on the ‘Forests, Products and People Ireland’s Forest Policy – a renewed vision’ which we request the Department take into consideration.

Yours sincerely,

Fintan Kelly
Natural Environment Officer

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An Taisce Submission Re: Forests, Products and People Ireland’s Forest Policy – a renewed vision

Introduction

An Taisce are Ireland’s oldest and one of its largest environmental organisations. An Taisce is a charity that works to preserve and protect Ireland’s natural and built heritage. An Taisce recognises the important role that the forestry sector has to play in supporting the development of the rural and national economy. We are also aware of the potential positive and negative impacts of forestry on our environment and the negative role that forestry can play in postponing meaningful climate action in the land use sector. An Taisce welcomes the opportunity to contribute to this public consultation which should be viewed in parallel with the views and concerns expressed in our submission on the Forestry Programme 2014-2020 and on the mid-term review of the same. As a statutory consultee in the forestry consent system under the European Communities (Forest Consent and Assessment) Regulations 2010 (S.I. 558 of 2010) and as key stakeholders in the development of the forestry related policies such as the Hen Harrier Threat Response Plan and the National Biodiversity Action Plan 2017-2021 An Taisce are well placed to comment on the shortcomings of the Irish approach to forestry.

An Taisce submission on the Consultation on the Forestry Programme 2014-2020 (2014)

An Taisce Submission Mid Term Review - Forestry programme for 2014 – 2020

The current Forestry Programme had set out to encourage planting by private landholders in order to achieve a forest cover of 18% by the year 2046. The Forestry Programme 2014-2020 proposed the establishment of over 46,000 ha of new forests, the construction of 960 km of forest roads and improved levels of support for the establishment and conservation of native woodlands. All of this had to be achieved while adhering to the overarching EU Policy Framework Europe 2020 strategy for “smart, sustainable and inclusive growth”. Under the EU’s Strategic Environmental Assessment Directive, the Department of Agriculture, Food and the Marine (DAFM), as the programming authority, must assess the likely significant effects of its plans and programmes on: “the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship of the above factors” including “secondary, cumulative, synergistic, short, medium, and long-term, permanent and temporary positive and negative effects”.

2
An Taisce originally highlighted in the public consultation on the Forestry Programme and in numerous consultations in the mean time that we are deeply concerned that many aspects of the current programme fall short of the overarching objectives to achieve a sustainable and environmentally friendly forestry sector. Indeed many aspects of the programme are just a continuation of Ireland’s historically unsustainable forestry model whose practices over the preceding decades have negatively impacted on biodiversity, landscape, soil carbon and water quality. Commercial forestry plantations have a number of negative impacts on the environment. Non-native conifer plantations negatively impact on soil erosion and water quality and drive biodiversity loss through habitat loss and degradation. Non-native blocks of conifers sustain low levels of biodiversity compared to native ecosystems and traditional semi-natural habitats associated with High Nature Value farming systems. What has also become increasingly clear since 2014 is the negative socio-economic impact that commercial forestry is having on many parts of the country. These concerns have been raised by An Taisce with Minister Doyle himself at the inaugural COFORD Forest Policy Review Group (CFPRG) stakeholders meeting. These concerns have more importantly been repeatedly raised by affected communities in places like Leitrim within the national press and by the local Irish Farmers Association reps and by Macra Na Feirme. The Macra na Feirme afforestation policy position in particular has raised the impact which afforestation grants is having on the cost of land and land mobility. They have also highlighted their concern for the negative impact of forestry on High Nature Value farming which is shared by ourselves.

**Afforestation Policy Macra na Feirme (2017)**

There is a clear lack of a national dialogue and accountability in relation to the inevitable consequences of the market pressures have been released by the lifting of the dairy quota and the payments/tax breaks available for commercial forestry. The socio-economic consequences of these actions are accepted to result in the decline of small farmers and number of farming families, the loss of traditional hill farming/marginal farming in many areas with associated impacts on the structure of rural communities. This is likely to manifest itself in the irreversible decline and collapse of social cohesion in many rural communities around the country. The negative impacts of rural decline such as emigration and an aging population will only be exacerbate by the replacement of farming with a passive land use like forestry. The long term costs/benefits of such drastic changes for the effected communities have not been adequately debated. Groups who have voiced genuine concerns such as local IFA reps in Leitrim and Macra na Feirme and eNGOs like An Taisce have been discounted. Fact based arguments about the negative impacts on water quality and freshwater ecology and farmland biodiversity have yet to be adequately addressed. The incompatibility of certain models of forestry and indeed afforestation in general in certain areas is clear from the role that forestry has played in national conservation issues such as the Hen Harrier Threat Response Plan and the Curlew Action Plan. The announcement in recent months that the European Investment Bank has announced funding of over €200m for forestry related investment in Ireland and that Dasos a private forestry investment fund is looking to buy up Irish forestry only increases the concern that communities and wildlife will be displaced by foreign investors and sitka spruce plantations.

Within the COFORD Forest Policy Review Group (CFPRG) Minister Doyle and the forestry sectoral expressed the view that the decline of farming in certain areas was due to the lack of interest from younger generations due to the hardship and poor financial returns. The
forestry reps felt that forestry was stepping into the void created by other forces rather than driving the negative trends in rural decline. An Taisce accept that the forestry sector is not alone responsible for these negative trends but that it is a contributing factor which is exacerbating rural decline in certain areas. Increasing the profitability of HNV farming through agri-environmental schemes, market supports such as certification and the diversification of the rural economy through the promotion of ecotourism and the delivery of broadband where strategically feasible would breathe life back into many marginalised communities. Without a national dialogue on the social and environmental consequences of the collapse of farming in marginal areas there can be no mandate for the inevitable consequences of government policies such as the Forestry Programme 2014-2020.

The Forests, products and people Ireland’s forest policy – a renewed vision report has not gone anywhere near far enough in identifying the range of environmental issues or societal concerns with the forestry sector which need to be addressed if the stated strategic goal “To develop an internationally competitive and sustainable forest sector that provides a full range of economic, environmental and social benefits to society,” is to be achieved. We hope that the following issues we wish to highlight can be addressed moving forward and that our recommendations may provide some helpful guidance in bringing about the transition to a truly sustainable and holistic forestry sector.

Biodiversity

The current Forestry Programme claimed to meet many of its environmental targets by virtue of its role in increasing the cover of native woodland and native tree species within the Irish landscape. Ireland is one of the least forested countries in Europe with about 10.5% of its area under forest cover; however the majority of this is composed of non-native conifer species. These monoculture blocks of conifers account for 72.8% of the national forest estate, of this 52.4% is made up of just one species, Sitka spruce (Picea sitchensis) (Forestry-Service, 2014). While trees like Sitka spruce support biodiversity in their native distribution along the north-western seaboard of North America they support relatively low levels of biodiversity in Ireland. Only around 2% of the country is covered by what is termed native or semi-natural woodland, and much of this is highly fragmented and modified (Gallagher, et al., 2001). In the case of native woodland there is therefore a clear need to increase its cover nationally both from a biodiversity perspective and due to the multitude of ecosystem services that native woodlands provide. The current forestry programme however has to date failed to achieve the modest targets set for increasing native woodland or broadleaf cover. The targets that were set for native species were purely aspirational and were never going to be achieved without a mechanism to implement their planting. On the admission of the Forestry Service the “annual broadleaf planting target has fallen considerably short of the 30% target included in the EU Commission’s State aid approval for the forestry programme.” The blame for this must not only lie with the Irish Government but also the European Commission. Groups like An Taisce had highlighted in 2014 that these targets would not be met and that based on scientific evidence that the programme would result in biodiversity loss rather than biodiversity enhancement. These concerns were not taken on board by the Government or the Commission. Questions must now be asked how EU taxpayer money can continue to be invested in programmes that fail to meet the conditions of the Commissions State Aid rules.
Afforestation in Ireland is today mainly privately driven by land owners and moving forward by private investment funds. It is at the discretion of the land owner and the contracted forester to apply to the Forestry Service for whatever type of forestry they wish and it is clear that Sitka spruce plantations remain by far the most common planting choice even within sensitive areas such as Natura 2000 sites. This is based on factors such as the quick return from sitka spruce, its comparatively easier establishment and the market demand from the UK, an ingrained bias towards the species due to familiarity amongst foresters and the ready availability of saw mills equipped to handle the species and other conifer species like lodgepole. Without sufficient regulation, incentives and knowledge transfer to encourage the planting of native species a continuation of the status quo was inevitable and this is what has come to pass. Many excuses can be made for these failings such as the spread of Ash dieback disease \((Chalara fraxinea)\) but these constraints were known in advance of the delivery of the current programme. Indeed the threat of such outbreaks is only increased by the lack of species diversity within the sector. Something which is accepted but not being addressed quickly enough. There are numerous native broadleaf species which could be planted across all soil types. In addition our native conifer Scots Pine is not planted as often as it should be.

The overbearing role that market forces continue to play in the configuration of Ireland’s forestry policy both at the expense of the social, economic and environmental sustainability of many communities must be urgently addressed. With 80% of panel and 70% of saw wood being exported mainly to UK markets this is clearly having an overbearing role in the development of the sector. Other countries within the EU have recognised the need to counter this by regulation, investment in sustainable forestry and by creating new markets which will drive sustainable forestry practices. Greater efforts must be made to increase the amount of lumber being used in the construction industry. Likewise by developing the national and export market for hard wood products the establishment of broadleaves will be incentivised. This would have the spin off benefit of reducing the demand for tropical hardwoods. In areas where there is a need to replace traditional turf cutting with a local sustainable source of fuel native woodland should be established which can be coppiced to supply local communities with fire wood. An example of the tradition of coppicing was carried out in an Irish context is St Johns Wood, Lecarrow, Co Roscommon.

Some ways in which the sector could improve its environmental credentials include altering policies in relation to reforestation. Currently there a 10% reforestation figure for broadleaves but it is at the discretion of the owner whether or not they want to replant 10% of the land with broadleaves. This 10% obligation should be mandatory. All current environmental guidelines which apply to afforestation should apply to reforestation and in particular water quality guidelines. Coillte as a semi-state with a huge land holding and operating in some of the most environmentally sensitive areas in the country should have to lead by example. All reforestation within Coillte plantations should have to adhere to the current Environmental Requirement’s for Afforestation Guidelines (2016) and should be in line with the obligations of Article 6(3) of the Habitats Directive and other relevant legislation such as the Birds Directive and the Wildlife Acts. The majority of Coillte plantations predate environmental guidelines and are therefore not achieving the levels of high environmental integrity that one would expect from a semi-state. Coillte should have to be as transparent in their actions as private land owners and should be subjected to third party oversight by An Taisce, Inland Fisheries Ireland and the National Parks and Wildlife
Services for any plans or projects within their land holdings. The use of the synthetic pyrethroid cypertin should be banned in all Coillte land holdings.

The impact of afforestation will vary from site to site and will be dependent on what habitat the forestry/woodland replaces. The environmental impact of native woodland establishment is greatest where it replaces intensively managed agricultural land and worst where it replaces priority or Annex I semi-nature habitats. In particular forestry in an Irish context is a major threat and pressure on semi-natural habitats associated with extensive farming. This threat has yet to be addressed as afforestation has in the past and according to Government policy will continue into the foreseeable future to be focused primarily on marginal land with low agricultural output (Farrelly & Gallagher, 2013). These areas are often important reservoirs for habitats and species of high conservation value which have persisted due to the continuation of traditional land uses such as extensive grazing. Afforestation in these areas results in a range of negative impacts on biodiversity including direct impacts such as habitat loss, indirect impacts like water pollution and cumulative impacts such as fragmentation. Despite the comparatively low level of forest cover in Ireland the concentration of afforestation in areas of high biodiversity value magnify its negative impact as a threat and pressure on biodiversity. The environmental impact of Irish forestry is further exacerbated by its intensive management. Common practices such as drainage during ground preparation, the use of pesticides and clear-felling result in many negative impacts on water quality and fresh water ecosystems. It is open for debate whether the establishment of native woodland on High Nature Value farmland is positive or negative from a biodiversity perspective. It would be fair to say however that in order to conserve populations of species and an adequate distribution of certain habitats that a representative proportion of the best sites would be protected from afforestation of any kind and through regulation and through support via agri-environmental schemes. In order to achieve this High Nature Value farmland and Natura 2000 sites with relevant qualifying interests must be protected from afforestation. These sites should be identified through a landscape level mapping exercise with site level resolution. This is currently not the case and afforestation
within inappropriate sites is ongoing without adequate ecological assessment and in breach of EU laws and regulations. Establishing a network of protected sites using a sensitivity mapping tool and ground truthing should be an essential biodiversity safeguard in the Forestry Programme moving forward. The suitability of non-native plantations of conifers in many Natura 2000 or NHA sites should be reviewed.

**Biodiversity impact of Irish Forestry**

**Habitats loss**

In Ireland’s most recent report to the EU Commission on the habitats and species listed in the annexes of the Habitats Directive, forestry ranked as the second greatest pressure and threat on designated habitats and species in Ireland after agriculture. Forestry is also closely linked directly to the 8th, 9th and 10th ranked national high level pressures/threats of pollution, invasive and problematic species and natural system modifications (NPWS, 2013). Almost 40% of designated habitats under the Habitats Directive have forestry as a pressure or threat of high, medium and low intensity. The associated pressures of pollution, invasive and problematic species and natural system modifications are each negatively impacting upon over 70% of designated habitats under the Habitats Directive as a pressure or threat of high, medium and low intensity (NPWS, 2013).

Designated habitats in Ireland whose conservation status is being most negatively impacted upon by forestry are peatlands, grasslands, wetlands and coastal habitats. According to Ireland’s National Parks and Wildlife Service areas of Annex I habitats which lie outside of designated sites are particularly vulnerable to afforestation. The NPWS have identified that forestry regulations are currently failing to protect Annex I peatland habitats such as Wet Heath, Dry Heath, Alpine and Sub Alpine Heath, Rhyncosporion depressions and the priority habitat Active Blanket Bog (NPWS, 2013). Rare grasslands such as the Annex I classified Molinia Meadows and the priority habitat Species-rich Nardus grasslands are being lost due to afforestation. Species-rich Nardus grassland for example has been completely obliterated by forestry in many areas of the country such as the Comeragh Mountains, the Devils Bit Range and the Slieve Blooms (NPWS, 2013).
Species Loss
Protecting plant and animal populations in agricultural landscapes is important for both maintaining ecosystem services and the conservation of threatened species (Tscharntke, et al., 2002). Habitat loss is the primary driver of species extinctions globally with 40% of all ice-free terrestrial habitats converted to agriculture or urban settlements and 37% of the remaining semi-natural habitats being embedded within this highly modified landscape matrix (Ellis, et al., 2010). It is clear from a number of recent reports that the Irish forestry sector has earmarked areas of unenclosed land, and in particular rough grasslands dominated by purple moor grass (*Molinia caerulea*) for afforestation (COFORD, 2016) (Farrelly & Gallagher, 2013). The aggressive targets for afforestation in Ireland will alter the landscape radically in many parts of the country (Buscardo, et al., 2008). To achieve this the current cap which exists on the area of unenclosed land which can be afforested will be removed. This is one of the few environmental restrictions outside of protected areas. The loss of undesignated grasslands due to forestry has been highlighted by the NPWS as a
driver of biodiversity loss nationally (NPWS, 2013). Semi-natural grasslands in Ireland and the UK are an important habitat for a range of species, such as the Irish hare (*Lepus timidus hibernicus*) (Tangney, et al., 1995), waders such as Lapwing (*Vanellus vanellus*), Curlew (*Numenius arquata*), Snipe (*Gallinago gallinago*) and Redshank (*Tringa tetanus*) (Baines, 1988; Henderson, et al., 2002), passerines such as Meadow Pipit (*Anthus pratensis*) and Skylark (*Alauda arvensis*) (Henderson, et al., 2004), and Annex I species under the Birds Directive such as Short-eared Owls (*Asio flammeus*) (Glue, 1977) and Hen Harriers (*Circus cyaneus*) (Ruddock et al., 2012). The cumulative environmental impact of the expansion of forest cover nationally and in particular the loss of unenclosed land and semi-natural grassland on the scale proposed will have far reaching implications for biodiversity (Buscardo, et al., 2008; Smith, et al., 2006).

The loss and fragmentation of semi-natural grasslands on a landscape level is known to negatively impact on bees and butterfly populations (Öckinger & Smith, 2007). Across the EU 37–65% of bee species have been identified as being of conservation concern (Patiny, et al., 2009). While in Ireland one third of bee species are threatened with extinction (Centre, 2015). The loss of semi-natural grassland is considered the main threat to Irish bees (Fitzpatrick, et al., 2007). The loss and fragmentation of semi-natural grasslands due to forestry expansion and agricultural intensification will drive the extinction of many pollinator species in Ireland.

Wild bird population trends are indicative of broader ecosystem health and are therefore useful indicators of biodiversity loss. The implications of forestry expansion on bird diversity in an Irish context have been investigated in a number of studies, all arriving at similar conclusions i.e. that the net effect of afforestation will depend on the biodiversity of the habitat it replaces and is related to the previous land management intensity at the site (Buscardo, et al., 2008) (Graham, et al., 2015). Common bird species associated with woodland will benefit from afforestation in Ireland (Walsh, et al., 2000). Woodland birds are not considered to be a major conservation concern in Ireland (Colhoun & Cummins, 2013). While forestry might initially favour some species associated with open-habitats, through increases in shrub and herb cover associated with the relaxation of grazing pressure on recently planted land, they are lost from plantations at canopy closure (Walsh, et al., 2000). The recently published report by Scotland’s Moorland Forum on the issue of upland predation summarised the negative impacts of forestry on ground-nesting birds associated with open upland habitats. The findings are directly applicable to Ireland:

"Extensive commercial afforestation in the Southern Uplands has destroyed large areas of suitable habitat for a whole range of wild birds, bringing predators onto open hills and fragmenting moorland into small pockets. This has been disastrous, particularly for Black Grouse. In many areas suitable habitat remains, but it is not present in sufficient quantity to support birds on a landscape scale, and a general reluctance to manage heather and upland vegetation near forestry by traditional methods (or often any methods) has meant that these remaining islands are becoming increasingly degraded (Ainsworth, et al., 2016)."

Afforestation causes direct habitat loss and fragmentation of remaining open ground; moreover, such fragmented wooded landscapes host high abundances of predators including red foxes, corvids relative to continuous open landscapes. Afforestation is associated with edge effects on adjacent open ground across a range of systems, by altering habitat configuration and through the association of predators with woodland. Increased
predation pressure on open ground adjacent to woodland, coupled with potential behavioural avoidance of edge habitats, are established negative impacts of forestry on ground nesting upland bird species and waders and acts cumulatively with the direct losses of habitat due to afforestation (Douglas, et al., 2014). These negative impacts have been established for species such as Curlew, Dunlin and European Golden Plover and Hen Harrier (Douglas, et al., 2014) (Wilson, et al., 2014) (Ruddock, et al., 2016). Because of its short- and long-term effects, afforestation will have a detrimental effect on many semi-natural habitats, breeding waders and other birds of upland and moorland habitats (particularly red/amber-listed species) (Buscardo, et al., 2008; O’Connell, et al., 2015; Smith, et al., 2006; Wilson, et al., 2006). Numerous studies in Ireland have all concluded that in order to prevent the loss of open habitat and bird species of conservation concern, afforestation should be focused in areas of improved grassland.

"new afforestation should not take place in areas with diverse communities of open-habitat birds” (Wilson, et al., 2006)

"Areas of open habitat which support diverse assemblages of open-habitat specialists (particularly when these are red/amber-listed species) should therefore be safeguarded from afforestation, and managed in such a way as to ensure their continued suitability for these species.” (Walsh, et al., 2000)

"afforestation should target habitats with relatively impoverished bird assemblages. By far the most abundant of these is improved grassland”… “other open habitats generally cannot be afforested without negatively impacting on birds, particularly where elements of the bird community are of national or international conservation interest.” (Smith, et al., 2006 )

"forest management should encourage any proposed future exotic plantations to be located in areas of high management intensity such as improved agricultural land rather than in low management intensity peatlands that typically support bird communities of high conservation value.” (Graham, et al., 2015)
Recent research has established a strong overlap between newly planted forests and the distribution of Birds of Conservation Concern in Ireland (BoCCI) which are associated with farmland habitats (Corkery, et al., 2015). Recent forest planting was found to overlap with 78% of the 10 x 10 km squares occupied by birds of conservation concern, with 11% of these squares being planted with 100ha or more. Species associated with rough grassland had a 78% overlap with new forestry (Snipe (81%), Curlew (84%), Lapwing (76%), Redshank (72%), Meadow Pipit (78%), and Skylark (11%)) with an average of 12.5% of the squares which hosted these species being planted with 100 ha or more. This study again concluded that “afforestation may represent a threat at a regional and national scales to some of these bird species in the near future. At least for the already threatened species, which depend on grassland areas for foraging, plantation forests may already be having a negative impact.”

For many species it is already clear that further habitat loss over the next few decades will drive their national populations to the brink of extinction. The Hen Harrier in this one of the species that has been impacted most by the loss and degradation of its traditional foraging and nesting habitats. Rough grassland constitutes 11.02% of the area of the six Hen Harrier SPAs and is the largest open habitat type within these protected sites (Moran & Wilson-Parr, 2015). The main threat identified for each of the six Special Protection Areas (SPA) designated for the species protection is further afforestation. The main threat to the long-term survival of Hen Harriers within the site is further afforestation, which would reduce and fragment the area of foraging habitat, resulting in possible reductions in breeding density and productivity. (NPWS, 2007). The population within the six SPAs has declined by 26.6% since 2005. The SPAs are essential for the species supporting between 44% and 47% of the national population (51 – 69 pairs) (Barton, et al., 2006; Ruddock, et al., 2016). Afforestation and the maturation and canopy closure of established plantations has been a major driver of this decline (NPWS, 2015).

Likewise waders such as Lapwing, Red Shank and Curlew are Red listed birds of high conservation concern having undergone declines of 88%, 88% and >80% respectively in their breeding populations between 1988/91 and 2008 (Crowe, et al., 2010). Declines in Irish waders have been attributed to habitat loss linked to afforestation, land drainage, intensification of agriculture and increased predation (Wilson, et al., 2004; Henderson, et al., 2002).

High Nature Value Farmland Loss
The ongoing loss of biodiversity associated with semi-natural ecosystems both within and outside of the Natura 2000 network is an issue right across the EU. More than 50% of Europe's most highly valued biotopes occur on low-intensity farmland (Bignal & McCracken, 1996). The need to protect farming systems in Europe of greatest biodiversity value or ‘High Nature Value (HNV) farming’ has been embraced at an EU level and it is recognised that the conservation of HNV farming is essential if the EU is to meet its 2020 biodiversity targets (Cooper, et al., 2007; Keenleyside, et al., 2014). In EU regulation No 807/2014 of 11 March 2014 (supplementing Regulation (EU) No 1305/2013) of the European Parliament and of the Council on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) have provided some provisions relating to the protection of HNV

Article 6 of the regulation reads (emphasis added):

“Minimum environmental requirements with which the afforestation of agricultural land must comply should be laid down ensuring that no inappropriate afforestation of sensitive habitats including areas under high natural value farming takes place and that the need for resilience to climate change is taken into account. On sites designated as Natura 2000, afforestation should be consistent with the management objectives of the sites concerned. Special attention should be paid to specific environmental needs for particular sites such as the prevention of soil erosion. More stringent rules should be provided for afforestation operations leading to the creation of larger forests in order to take into account the impact of scale of those operations on the ecosystems and to ensure that they comply with the objectives of the Green Infrastructure Strategy (1) and new EU Forest Strategy (2).”

An Taisce know from experience that the forestry service are not regularly carrying out ecological assessments prior to approving afforestation and as a result inappropriate afforestation of sensitive habitats including areas of HNV farming is taking place. In effect there is no policy in place to implement the obligation to protect HNV sites (Kelly, 2016).

In recent times there has been a lot of research carried out in relation to the availability of land in Ireland for forestry expansion. This research has been ongoing at a time when mapping projects are also identifying the distribution of HNV farmland in Ireland. Based on the most recent produced maps it is clear that there is a direct overlap with land which is being earmarked for afforestation and HNV farmland (Teagasc Research, 2016). This is a clear indication of the threat posed by forestry to Irish biodiversity.
Figure 1. Classification of Ireland’s land area in relation to availability for forestry expansion and the area of productive and marginal agricultural land with most potential for forestry expansion (Teagasc, 2016).
Figure 2. Likely occurrence and distribution of HNV farmland in each Electoral Division, based on a scale ranging from low (blue) to intermediate (yellow) to high (green). Note that non-HNV farmland may still occur in areas with high likelihood of HNV farmland, and vice versa (Teagasc, 2016)

Noncompliance with environmental legislation
The stated goal of the ‘Forests Products and People – strategic goal’ report under Environment and Public Goods is “To ensure that afforestation, management of existing forests and development of the forest sector are undertaken in a manner that ensures compliance with environmental requirements and objectives and enhances their contribution to the environment and their capacity for the provision of public goods and services.”

As a statutory consultee in the forestry consent system under the European Communities (Forest Consent and Assessment) Regulations 2010 (S.I. 558 of 2010) it is An Taisce’s opinion that the forest sector is not compliant with numerous environmental requirements and that even the forestry services own guidelines are regularly not being implemented.

In An Taisce’s submission on the Draft Environmental Requirements for Afforestation (2016) we highlighted that the Irish forestry sector is non-compliant with the requirements of the Habitats Directive (Council Directive 92/43/EEC) or the Birds Directive (Directive 2009/147/EC) and backed up our claims with specific cases (Kelly, 2016). One of the biggest issues is that the Forest Service have consistently failed to properly implement the
requirements of Article 6 (3) of the Habitats Directive during the forestry approvals process. The need for a full Appropriate Assessment is often screened out despite the obvious negative direct, indirect and cumulative impacts that afforestation would have in light of the conservation objectives for various Natura 2000 sites.

As part of the BIOFOREST project a review of forestry Environmental Impact Statements (EIS) in Ireland was carried out (Iremonger, et al., 2006). One of the findings of the review was that the personnel involved in biodiversity assessment for afforestation do not currently receive adequate training or other guidance (e.g. in the Forest Service publication the Forest Biodiversity Guidelines) for the identification of habitats and fauna and flora of biodiversity importance. The report noted that the employment of an ecologist by the Forest Service was a welcome development, however more were needed. The review also found that none of the EIS contained adequate assessments of overall biodiversity. The main deficiencies were insufficient scoping, non-standardised habitat/vegetation classifications, reliance on incomplete lists of species with little or no information on abundance or distribution within the site, and little or no evaluation of the conservation importance of the site. Despite these deficiencies six of the nine afforestation projects for which an EIS was submitted were approved. This indicates that assessment by the appropriate authorities was deficient. The report concluded that "lack of adequate strategic assessment, failure of regulations to require biodiversity assessment for the vast majority of afforestation proposals, and serious deficiencies in those biodiversity assessments that are carried out mean that sites of high biodiversity importance are currently at risk of being damaged by afforestation."

The lack of adequate biodiversity assessment and the approval of afforestation in inappropriate locations as highlighted by this report is still an ongoing issue.

Outside of designated sites, the Birds and Habitats Directives impose certain additional requirements to protect biodiversity. Article 4(4) of the Birds Directive requires Member States to "avoid pollution or deterioration of habitats," while Article 10 of the Habitats Directive requires Member States to "encourage the management of features of the landscape which are of major importance for wild fauna and flora. Such features are those which, by virtue of their linear and continuous structure...or their function as stepping stones... are essential for the migration, dispersal and genetic exchange of wild species."

Ireland has a poor record in protecting biodiversity in the wider countryside as evidenced by the open CJEU Ruling C418-04 in which the Court held that despite a requirement for Member States to "make a serious attempt at protecting those habitats which lie outside the SPAs," Ireland has not "transposed that provision fully and correctly by taking suitable steps to avoid pollution or deterioration of the habitats lying outside the SPAs. It is thus clear, in the present case that Ireland must endeavour to take suitable steps to avoid pollution or disturbances of the habitats." The ongoing failure of Ireland to provide sufficient protection to biodiversity from afforestation is a clear indication that issues highlighted in this case have yet to be resolved.

An eNGO perspective of forestry AAs in Ireland

As a prescribed consultee An Taisce have valuable insight into the forestry consent process in Ireland. Full compliance with environmental law is not only a legal obligation but one of the most effective ways of ensuring that the forestry sector can contribute to the conservation of species like the hen harrier, and also serves to avoid the sector falling into disrepute and costly legal actions. It is in this constructive and supportive context that we
wish to make our observations on the Forestry Services current shortcomings in the implementation of Article 6(3) of the Habitats Directive, on the legislative requirements and relevant directives and case law. This part of the submission will use the hen harrier as a case study of these shortcomings.

The European Commissions ‘Study on alleviating and improving the article 6(3) permit procedure for Natura 2000 sites’ provides a valuable overview of the historical and current issues with AA implementation in the EU from the point of view of various stakeholders (Sundseth & Roth, 2013).

On-going problems highlighted by the report include the following:

- Poor quality of the Appropriate Assessment undertaken
- Lack of skills/ knowledge /capacity in the Article 6.3 procedure
- An inadequate knowledge base on which to assess impacts
- Inconsistent screening of plans and projects
- Lack of understanding of key concepts and legal terms
- Persistent lack of assessment of cumulative effects
- Confusion with the EIA/SEA Procedure
- Lack of early dialogue
- Lack of effectiveness of AAs on plans
- Problems during public consultation

Many of these issues of course are also relevant to Irish AAs. Within the report the Forestry Services Appropriate Assessment Procedure is highlighted as best practice in the case study "Adopting a Systematic Approach to the Screening and Appropriate Assessment of Plans and Projects Related to Forestry Activities (Ireland).”

The key strengths of the Forestry Services approach were identified as:

- The establishment of a robust and consistent framework ensuring the AA permit procedure is implemented in a more systematic way across the country.
- reduced administrative burden on all concerned since it leads to better recording of the Article 6.3 process in the forestry sector and helps increase the overall level of understanding and awareness of how to carry out an AA screening or full scale assessment correctly for activities in this sector.
- The wide ranging consultations with other statutory authorities (especially NPWS) and NGOs.

However issues which were raised include:

- There is however a need to ensure that the guidelines and new procedures are now fully and correctly implemented, and do not merely lead to a kind of ‘tick-box’ exercise in practice.
• There is as yet no mechanism in place for an independent review of the process and its application. Nor are the AA procedures and associated tools (such as the iFORES system), or the screening and AA permit results readily available to the public. This would allow for better scrutiny of the procedures and greater public confidence that guidelines and AA procedures for forest activities are being correctly implemented in practice.

• Hen Harrier and Fresh Water Pearl Mussel, two key species found in areas where forestry-related decision-making is important, continue to be seriously at risk, with the former in decline in SPAs and the latter no longer reproducing. *It has yet to be demonstrated that forestry is being managed in a way that ensures the favourable conservation status of these species. Furthermore, the context in which the AA system operates remains incomplete as site management plans that would bring together the full range of actions needed to conserve these species are still in preparation.*

We would fully agree that on paper the procedure set out by the Forestry Services AAP is excellent and seems to address the main issues however in our experience there are still serious weaknesses in the implementation of appropriate assessment (AA) within Irish forestry sector.

**The failure to carry out a proper screening for appropriate assessment**

Screening is a crucial step of the Article 6 (3) permit procedure however in our experience this stage of the process has the capacity to act as a “loophole” through which plans/projects likely to have an impact may escape the assessment if the screening process is too simple or incomplete. Too often the process is something of a ‘tick box’ exercise. In our experience the need to carry out a full AA is frequently and inappropriately screened out at the screening stage. An Taisce regularly call on the forestry service to carry out an AA and we clearly indicate our reasoning for doing so with specific references to the site in question, its features of interest and the potential direct, indirect and cumulative impacts of afforestation. The failure of the forestry service to carry out a proper screening assessment is often compounded by the NPWSs failure to call for an AA in their submissions.

The failure of the forestry, farming and fisheries sectors to carry out AAs is not unique to Ireland and has been highlighted at an EU level (Sundseth & Roth, 2013). One of the reasons may be a lack of understanding of key legal terms and the implications of the relevant EU case law. There seems to be confusion around key legal terms such as the definition of a ‘plan or project’. There certainly seems to be confusion about the ‘trigger’ for AA at the screening stage. Given the low threshold set by the Waddenzee judgment (C-127/02) regarding the trigger for appropriate assessment, it is likely that a land use like forestry which is so prevalent in many Natura 2000 sites and which has so many negative impacts on biodiversity should result in many more appropriate assessments being carried out than is currently the case.

**The need to carry out a full Appropriate Assessment**

Given the known and potential direct, indirect and cumulative impacts of forestry on species such as hen harriers (*Circus cyaneus*) (NPWS, 2015), it is essential that all forestry applications which have the potential to negatively impact upon the six Special Protection Areas (SPA) designated for the species are subjected to an Article 6(3) assessment. The habitat types and species for which a Natura 2000 site is designated are influenced by a wide range of intrinsic
and extrinsic factors which means that the assessment of impacts has to be studied on a case by case basis and must be supported by good baseline knowledge. Poor baseline data and information on local pressures is a complicating factor as is the lack of site specific conservation objectives. Often the information provided within the forestry applications is inaccurate or incomplete.

The lack of assessment of cumulative impacts
Another key issue which is relevant for all AAs in Ireland is the lack of assessment of cumulative impacts. This is one of the biggest issues in Irish AA implementation and it is still recognised as a major gap in most AA reports at an EU level with 41.4% of surveyed respondents stating that assessment of cumulative impacts is ‘rarely’ or ‘never’ done. The analysis of the significance of the effects and of effective mitigation measures is also ‘sometimes’ a problem (33.3% and 40.4% of the cases respectively) (Sundseth & Roth, 2013). The Forest Service operates an electronic iFORIS system for use by its inspectors (showing proposed afforestation, existing afforestation, details of that afforestation, Natura 2000 boundaries, etc.). The Forest Service also provides a version of this system – iNET – to professional foresters on a username and password basis. However, the public is not permitted access to the iNET system, despite recent requests; moreover, An Taisce is not permitted to access the iNET system, notwithstanding our prescribed status. Providing An Taisce access to this system would improve the transparency of the Forestry Services AAP and it would allow the eNGO sector greater input into the assessment of cumulative impacts.

The lack of protection afforded to Hen Harriers outside of the Six SPAs
Another issue is the lack of protection for designated habitats and species outside of the Natura 2000 network. Ireland has a poor record in implementing our broader obligations outside of the Natura 2000 network as demonstrated by the Fourth complaint in the judgment of the Court of Justice of the European Union (CJEU) in Case C418/04 Commission v Ireland “The Birds Case,” in which the Court found that Ireland had failed to transpose and apply obligations to protect birds in the wider countryside as required by Article 4(4) of the Birds Directive. There is also the issue that even within Irelands designated sites species such as hen harriers are not being afforded a high enough level of protection.

In the EPAs ‘Management Strategies for the Protection of High Status Water Bodies’ report Ní Chatháin et al (2012) analysed many of the pressures on High Status sites including forestry and windfarms. The report concluded that “Current AA levels need to be radically improved with regard to their acceptance under Article 6 of the Habitat’s Directive, including the assessment of the level of rehabilitation needed to allow a catchment to function sustainably. It would be beneficial if this were extended to potential impacts to high status sites that lie outside the cSAC network, e.g. via independent EIA routes.” The report also highlighted the lack of consideration of cumulative impacts in AAs. These observations are directed more generally at the planning system but are relevant for forestry consent.

A review of AA in relation to forestry and other plans and projects within Hen Harrier SPAs should be carried out. An appropriate assessment procedure should be put in place for forestry in other sites outside of the six SPAs which are of national importance for species like the Hen Harrier and the Freshwater Pea Mussel.

As part of the BIOFOREST project a review of forestry Environmental Impact Statements in Ireland was carried out (Iremonger et al., 2006). One of the finding of the review was that the personnel involved in biodiversity assessment for afforestation do not currently receive adequate training or other guidance (e.g. in the Forest Service publication the Forest
Biodiversity Guidelines) for the identification of habitats and fauna and flora of biodiversity importance. The report noted that the employment of an ecologist by the Forest Service was a welcome development, however more were needed.

The review found that none of the EISs contained adequate assessments of overall biodiversity. The main deficiencies were insufficient scoping, non-standardised habitat/vegetation classifications, reliance on incomplete lists of species with little or no information on abundance or distribution within the site, and little or no evaluation of the conservation importance of the site. Despite these deficiencies six of the nine afforestation projects for which an EIS was submitted were approved. This indicates that assessment by the appropriate authorities was deficient. The report concluded that "lack of adequate strategic assessment, failure of regulations to require biodiversity assessment for the vast majority of afforestation proposals, and serious deficiencies in those biodiversity assessments that are carried out mean that sites of high biodiversity importance are currently at risk of being damaged by afforestation."

The lack of adequate biodiversity assessment and the approval of afforestation in inappropriate locations as highlighted by this report is still an ongoing issue.

The Birds Directive


Article 4 of the Birds Directive addresses the designation of SPAs and the protection afforded to Annex I species and their habitats within the SPA network and provides as follows:

"Article 4

1. The species mentioned in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution.

In this connection, account shall be taken of:

(a) species in danger of extinction;

(b) species vulnerable to specific changes in their habitat;

(c) species considered rare because of small populations or restricted local distribution;

(d) other species requiring particular attention for reasons of the specific nature of their habitat.

Trends and variations in population levels shall be taken into account as a background for evaluations."
Member States shall classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species in the geographical sea and land area where this Directive applies.

2. Member States shall take similar measures for regularly occurring migratory species not listed in Annex I, bearing in mind their need for protection in the geographical sea and land area where this Directive applies, as regards their breeding, moulting and wintering areas and staging posts along their migration routes. To this end, Member States shall pay particular attention to the protection of wetlands and particularly to wetlands of international importance.

3. Member States shall send the Commission all relevant information so that it may take appropriate initiatives with a view to the coordination necessary to ensure that the areas provided for in paragraphs 1 and 2 form a coherent whole which meets the protection requirements of these species in the geographical sea and land area where this Directive applies.

4. In respect of the protection areas referred to in paragraphs 1 and 2, Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats.”

Eurasian Curlew by Andreas Trepte

The Habitats Directive
EU governments adopted the Habitats Directive in 1992 (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora) in order to ensure the protection of a broader range of European habitats and species and habitats for species than provided for by the Birds Directive. Together with the Birds Directive, it sets the standard for nature conservation across the EU and enables all 28 Member States to work together within a consistent and strong legislative framework in order to protect the most vulnerable species and habitat types across their entire natural range within the EU.

Article 3 (1) of the Habitats Directive provides for a coherent ecological network of special areas of conservation under the title of Natura 2000, and this shall include the special protection areas classified by the Member States pursuant to Directive 79/409/EEC. It also provides that this Network: (emphasis added)

“**SHALL** enable the natural habitat types and the species’ habitats concerned **to be maintained or**, where appropriate, **restored at a favourable conservation status in their natural range.**”

Importantly this identifies an obligation to address a Natura 2000 provision which addresses the natural range of the species.

According to article 7 of the Habitats Directive (92/43/EEC):

“**Obligations arising under Article 6 (2), (3) and (4) of this Directive shall replace any obligations arising under the first sentence of Article 4 (4) of Directive 79/409/EEC in respect of areas classified pursuant to Article 4 (1) or similarly recognized under Article 4 (2) thereof, as from the date of implementation of this Directive or the date of classification or recognition by a Member State under Directive 79/409/EEC, where the latter date is later.”**

In other words the obligation on Member States to take appropriate steps within the SPA network “**to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article,**” has been replaced by the legal obligations set out in Article 6 (2), (3) and (4) of the Habitats Directive.

The remaining element then of Birds Directive Article 4(4) is unchanged and provides for obligations on Member States in respect of avoidance of pollution or deterioration of habitats of Annex I species outside of the SPA network. Indeed the obligation for protection outside the network is further strengthened by Article 10 of the Habitats Directive, and the broader provisions of the Birds Directive.

**Article 6(3) of the Habitats Directive**

Article 6(3) places specific obligations on the relevant competent authority to assess the impact of **ANY** plan or project on European sites. It requires that any plan or project which, is not directly concerned with or necessary to the management of the site and is likely to have a significant effect on a site, individually or in combination with other plans or projects must be subject to ‘appropriate assessment’ of the implications of the proposed plan or development in view of the site’s conservation objectives.

**Article 6 (2-4) of the Habitats Directive**
2. Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.

3. Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

4. If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.”


The need to screen forestry applications for AA

While large infrastructural projects usually do not raise any doubts as to the need for AA, small-scale projects, especially those not subject to EIA and linked to land management issues, might pass unnoticed, especially if there is no consistent framework in place to screen these projects for their potential impact and need for a full AA. This confusion around the definition of a ‘plan or project’ is recognised at an EU level and it is an ongoing issue in relation to the proper implementation of Art 6(3) (Sundseth and Roth, 2013). The potential confusion around the definition of a plan or project may be one of the reasons that forestry activities are not being screened for AA. The Waddenzee case (‘the Waddenzee case’ – Case C-127/02, Landelijke Verening tot Behoud van de Waddenzee and Netherlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landouw, Natuurbeheer en Visserij [2004] I-07405) made a number of important clarifications on how the obligations in respect of appropriate assessment should be construed and approached. The Waddenzee case held that:

30...“for unintentional damage to Natura 2000 sites to be avoided effectively, all potentially harmful measures must, where possible, be subject to the procedure laid down in Article 6(3) of the habitats directive. Therefore, the terms ‘plan’ and ‘project’ should be interpreted broadly, not restrictively. This is also consistent with the wording, which expressly refers to any plan or project in almost all language versions.”
“39...The words 'plan and project'...also cover an activity which has already been carried on for many years but for which an authorisation is in principle granted each year for a limited period.”

Stage One Screening for the need for Appropriate Assessment

The obligations of the EU Birds and Habitats Directives are purportedly transposed into Irish legislation through a variety of instruments. For our present purposes most notable amongst these are the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) (referred to below as the Birds & Habitats Regulations 2011) and the Planning and Development (Amendment) Act 2010, as amended by the Environment (Miscellaneous Provisions) Act 2011 (see Irish Statute Book, http://www.irishstatutebook.ie/) and the Forestry legislation.

The Forest Service of the Department of Agriculture, Food and the Marine is the relevant authority responsible for assessing applications for consent, grant approval and licences relating to various forestry activities, they are the authority who apply the appropriate assessment procedure. The obligation to conduct a lawful evaluation and decision-making procedure, lies with the Forestry Service and to do so in consultation with the National Parks and Wildlife Service and a number of other prescribed bodies. The Forestry services Forest Service Appropriate Assessment Procedure Information Note March 2012 indicates that it “sets out the Forest Service Appropriate Assessment Procedure (AAP)”

This ‘Appropriate Assessment’ of the implications of the proposed plan or development in view of the site’s conservation objectives is set out as a two-stage process and initially requiring a preliminary screening for appropriate assessment. It states in Section 4 of the Forest Service AAP that:

“Screening is required in relation to all applications within, partially within, or outside of a Natura site.”

According to the 2009 National Parks and Wildlife Service (NPWS) Guidance on Appropriate Assessment of Plans and Projects in Ireland:

“...the first test is to establish whether, in relation to a particular plan or project, appropriate assessment is required. This is termed AA screening. Its purpose is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in combination with other plans or projects, could have significant effects on a Natura 2000 site in view of the site’s conservation objectives. The need to apply the precautionary principle in making any key decisions in relation to the tests of AA has been confirmed by European Court of Justice case law. Therefore, where significant effects are likely, uncertain or unknown at screening stage, AA will be required.”

The case law of the CJEU provided important clarification on the very low threshold for the trigger for an appropriate assessment. In the Case C-127/02 (‘the Waddenzee case’ – Case C-127/02, Landelijke Verening tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landouw, Natuurbeheer en Visserij [2004] I-07405) it was held that the trigger for an appropriate assessment is a very light one, and the mere probability or a risk that a plan or project might have a significant effect is sufficient to make an ‘appropriate assessment’ mandatory. Therefore, an appropriate
assessment is always necessary where reasonable doubt exists as to the absence of significant adverse effects:

"43...It follows that the first sentence of Art 6(3) of the Habitats Directive subordinates the requirement for an appropriate assessment of the implications of a plan or project to the condition that there be a probability or a risk that the latter will have significant effects on the site concerned.

44...In the light, in particular, of the precautionary principle, which is one of the foundations of the high level of protection pursued by Community policy on the environment, in accordance with the first subparagraph of Article 174(2) EC, and by reference to which the Habitats Directive must be interpreted, such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will have significant effects on the site concerned (see, by analogy, inter alia Case C-180/96 United Kingdom v Commission [1998] ECR I-2265, paragraphs 50, 105 and 107). Such an interpretation of the condition to which the assessment of the implications of a plan or project for a specific site is subject, which implies that in case of doubt as to the absence of significant effects such an assessment must be carried out, makes it possible to ensure effectively that plans or projects which adversely affect the integrity of the site concerned are not authorised, and thereby contributes to achieving, in accordance with the third recital in the preamble to the Habitats Directive and Article 2(1) thereof, its main aim, namely, ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora."

In Case C-258/11, Sweetman & Ors. V An Bord Pleanála & Ors., Advocate General Sharpston opined:

"46...that the test is set at a lower level and that the question is simply whether the plan or project concerned is capable of having an effect. It is in that sense that the English 'likely to' should be understood."

Thus allowing for a more expansive linguistic interpretation, the test would appear to involve a lower threshold than that of likelihood which connotes 'probability' as distinct from 'possibility'. Where doubt exists as to the absence of significant effects an appropriate assessment must be carried out. The approach to appropriate assessment is further reinforced by the precautionary principle which is set out in the Treaty of the Functioning of the EU (TFEU) and underpins EU Environmental legislation such as the Habitats Directive.

Article 191 of the TFEU provides inter alia for the Precautionary Approach which is required to inform action and decisions in environmental matters. Consequently where there is uncertainty – the obligation is to take the cautious route – unless scientific evidence can provide certainty there are no impacts.

Clearly C-127/02 is most helpful on the Precautionary principle of Article 191 of the treaty of the Functioning of the EU, TFEU some clarifications from the CJEU and Irish High Court are included below:

Artegodan a.o. v Commission[2002] ECR II-4945, clarified that:

"184. . . the precautionary principle can be defined as a general principle of Community law requiring the competent authorities to take appropriate measures to
prevent specific potential risks to public health, safety and the environment, by giving precedence to the requirements related to the protection of those interests over economic interests.”

The absence of certainty as regards the possibility of a significant negative effect as the result of forestry activities is clearly enough to trigger a Stage I and Stage II appropriate assessment, and to trigger the screening threshold identified as being ‘capable of having an effect’ by AG Sharpston in c-258/11.

Without expanding on the established direct and indirect negative impacts of forestry on Hen Harriers and other habitats and species at this point it is sufficient to note that this absence of certainty in relation to effects has been acknowledged time and again within the Irish forestry sector. The recently published COFORD report titled Land Availability for Afforestation - Exploring opportunities for expanding Ireland’s forest resource acknowledges that:

"The impact of afforestation on specific bird populations is not yet fully understood e.g. hen harrier, merlin."

Given this uncertainty forestry activities which have the potential to impact upon a hen harrier SPA will trigger a stage I screening assessment.

Hen Harrier habitat being drained and prepared for afforestation – Hen Harrier Ireland, 2017

**Stage Two Appropriate Assessment**

In the absence of certainty as to the likelihood of a negative impact of a plan or project on a Natura 2000 site at the screening stage a full Stage II AA is required. The obligations imposed under Article 6(3) of the Habitats Directive has been affirmed and expanded upon in subsequent decisions of the CJEU.
In Case C-258/11, Sweetman & Ors. v An Bord Pleanála & Ors., it was held that the provisions of Art 6 (2) – (4) of the Habitats Directive must be interpreted together

"32...as a coherent whole in the light of the conservation objectives pursued by the directive"

and that they impose a series of specific obligations necessary to achieve and maintain favourable conservation status. A plan or project will negatively impact upon a site if it prevented the

“39...lasting preservation of the constitutive characteristics”

of the site for which it was designated, with reference to the sites conservation objectives. Significantly it was determined that

“40...authorisation for a plan or project ....may therefore be given only on condition that the competent authorities ....are certain that the plan or project will not have lasting adverse effects on the integrity of the site. That is so where no reasonable scientific doubt remains as to the absence of such effects.”

In Kelly v An Bord Pleanála & Ors.,[2013 No 802 J.R.] with reference to Commission v Spain c-404/09 the High Court held in para 36 that that the competent authority must carry out an AA for a plan or project in light of the best scientific knowledge in the field and that the final determination of the competent authority must include complete, precise and definitive findings.

“36...This formulation as to the nature of the obligations imposed under Article 6(3) of the Habitats Directive has been affirmed and expanded upon in subsequent decisions of the CJEU. In Commission v. Spain (Case C-404/09) [2011] E.C.R. I-11853, the CJEU referred again to the obligation to identify the affects of the proposed development on the European sites conservation objectives "in the light of the best scientific knowledge in the field" and referred again to the test that "no reasonable scientific doubt remains as to the absence of such effects". At paras. 99 and 100, the CJEU stated:

"99. Under Article 6(3) of the Habitats Directive, an appropriate assessment of the implications for the site concerned of the plan or project implies that, prior to its approval, all aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities are to authorise an activity on the protected site only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects (see, in particular, Commission v Ireland, at paragraph 243).

100. An assessment made under Article 6(3) of the Habitats Directive cannot be regarded as appropriate if it contains gaps and lacks complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the SPA concerned (see, to that effect, Case C-304/05 Commission v Italy [2007] ECR1-7495, paragraph 69.”

The case repeated the conclusion of CJEU at in Case C-258/11, namely that an AA
“44... cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt.”

And in Waddenzee Case c-127/02:

"61...under Article 6(3) of the Habitats Directive, an appropriate assessment of the implications for the site concerned of the plan or project implies that, prior to its approval, all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities...concerned in the light of the site's conservation objectives, are to authorise such an activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects."

The Kelly Judgement has provided a very helpful clarification of the requirements of an AA and in particular in a summary of what must be delivered by the process in order for it to be lawfully conducted

"40...(i) Must identify, in the light of the best scientific knowledge in the field, all aspects of the development project which can, by itself or in combination with other plans or projects, affect the European site in the light of its conservation objectives. This clearly requires both examination and analysis.

(ii) Must contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps. The requirement for precise and definitive findings and conclusions appears to require analysis, evaluation and decisions. Further, the reference to findings and conclusions in a scientific context requires both findings following analysis and conclusions following an evaluation each in the light of the best scientific knowledge in the field.

(iii) May only include a determination that the proposed development will not adversely affect the integrity of any relevant European site where upon the basis of complete, precise and definitive findings and conclusions made the Board decides that no reasonable scientific doubt remains as to the absence of the identified potential effects.”

Appropriate Assessment and Forestry
A complete appropriate assessment for forestry must clearly identify, in the light of the best scientific knowledge in the field, all aspects of planting, management and harvesting which can, by itself or in combination with other plans or projects, affect a European site.

The site synopsis provided by the NPWS for each of the six SPAs provide important information about the conservation status of the Hen Harrier populations within each site and also about the major threats and pressures within each site. This information should inform how a particular plan or project will impact on the Hen Harrier population within each site. The impact on the Hen Harrier population will then feed into the conservation objectives for the species on a national level. Despite the fact that the population within the six SPAs has declined by 26.6% since the 2005 survey it is still clear that the SPAs are
essential for the species supporting between 44% and 47% of the national population (51 – 69 pairs) (Barton et al., 2006; Ruddock et al., 2015).

The main threat identified by the NPWS for each of the six SPAs is further afforestation while windfarm development is also highlighted as a potential threat within several of the SPA: Mullaghanish to Musheramore Mountains (004162), Slieve Aughty Mountains (004168), Slieve Beagh (004167), Slieve Bloom Mountains (004160), Slievefelim to Silvermines Mountains (004165), Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle (004161)

“The main threat to the long-term survival of Hen Harriers within the site is further afforestation, which would reduce and fragment the area of foraging habitat, resulting in possible reductions in breeding density and productivity.”

Much of the scientific literature underpinning this conclusion is presented in the ‘Hen Harrier Conservation and the Forestry Sector in Ireland’ document, which was written by the Golden Eagle Trust in consultation with the Forestry Services and the National Parks and Wildlife Service (NPWS, 2015).

The threats and potential threats identified in the ‘Forestry Report’ will have to be addressed in any AA. Some of these threats include direct impact of forestry on hen harriers due to habitat alteration and loss relevant to the breeding season both within and outside the SPA network. Another impact of forestry identified within the report and the scientific literature include the loss of foraging habitat. According to the scientific literature post-thicket or mature forest is generally avoided by Hen Harriers for hunting (Barton et al. 2006; Madders, 2000; Madders, 2003; O’Donoghue, 2004). Using remote tracking technology Irwin et al. (2012) found that Hen Harriers within forested habitats appear to avoid forest stands less than 3 years and greater than 15 years of age. These finding are supported by the findings of the WIND HARRIER report (unpublished) presented to the HH TRP consultative committee which demonstrated that foraging Hen Harriers strongly favoured peatlands habitats relative to availability and strongly avoided closed canopy forestry relative to availability. The avoidance of closed canopy forestry would mean that forestry plantations are only useful as foraging habitat for about 12 years (Irwin et al. (2012). Data provided by COFORD indicates that the silvicultural rotation length of sitka spruce in Ireland ranges from 45-70 years with an average age of 57.5 years (Horgan et al., 2003). This is in agreement with the average rotation time for sitka spruce in the UK of 59 years (Dewar & Cannell, 1992). Therefore the conversion of a suitable foraging habitat would lead to a loss of foraging habitat for an average of 45.5 years. An AA would have to demonstrate that the foraging opportunities provided by pre-thicket and in particular second rotation forestry outweigh the loss of open habitat due to afforestation. Such an assessment should pay particular attention to the impact of afforestation on Meadow Pipit (Anthus pratensis) Skylark (Alauda arvensis), Willow Warbler (Phylloscopus trochilus) and Stonechat (Saxicola torquata) given their importance as prey species during the breeding season (O’Donoghue, 2010) and their intolerance of these species to afforestation (O’Connell et al., 2015). There is currently a knowledge gap regarding the relative value of different habitats for hen harriers. This lack of knowledge was highlighted by the BIOFOREST project as being particularly critical in relation to the quality of second-rotation forests (Iremonger et al., 2006).
The importance of hedgerows and other linear features as foraging habitat for hen harriers is well established (Irwin et al., 2012, O'Donoghue, 2012). The envelopment of hedgerows and other linear features by blocks of forestry may therefore result in the loss of foraging habitat. An AA will have to address this potential negative impact.

The foraging distances of Irish hen harriers as recorded by Irwin et al (2012) is greater than that recorded for in Scotland (Arroyo et al., 2009; Arroyo et al., 2014). This may be due to Irish Hen Harriers breeding in forested landscapes having to forage over larger areas in order to provision their broods. It has been suggested that the loss of foraging habitat and the fragmentation of foraging habitat due to forest maturation is likely to be the driving force behind the greater foraging distances observed in Ireland than in the UK (Arroyo et al., 2009; Irwin et al., 2012; Arroyo et al., 2014). Irish Hen Harriers breeding in forested landscapes will have to forage over larger areas in order to provision their broods. If this is the case it has serious implications for the condition of breeding Hen Harriers and the productivity of Irish broods. Any AA would have to disprove such an impact.

Other impacts of forestry on hen harrier ecology identified within the report include habitat fragmentation on a site and landscape level and as a result reduced habitat quality/extent. The forestry document also highlighted direct disturbance issues associated with forestry (NPWS, 2015). These are recognised by the forestry service appropriate assessment procedure (2012) as including: timber felling (thinning, clearfell); timber extraction to roadside; timber loading at roadside; mechanical cultivation for both afforestation and reforestation; forest road construction (and associated developments); the driving of fencing posts; and any other operation(s) the Forest Service may deem as creating disturbance. A number of pressures related to forestry were identified in the most recent national hen harrier survey (Ruddock et al., 2015).

One of the key interactions between hen harrier and forestry highlighted within the forestry report was the ecological trap caused by the mismatch between breeding success and hen harrier preference for second rotation pre-thicket forestry (Irwin et al., 2012; Wilson et al., 2009).

The forestry document also highlighted issues relating to edge effects and susceptibility to predation. Increased afforestation may be causing indirect negative impacts on Hen Harriers as forest habitats may act as reservoirs for predators such as corvids, Fox, Mink and Pine Marten that prey on the ground-nesting birds in the surrounding area and close to forest edges (Ainsworth et al., 2016; Douglas et al., 2014; NPWS, 2015; Wilson et al., 2014). These predators which typically persist at higher abundances in fragmented landscapes and may show behavioural associations with habitat edges (Ainsworth et al., 2016). Predation of Hen Harriers by Pine Martens has been observed in the Slieve Blooms SPA (Ruddock et al., 2015). The predation of Hen Harriers by Pine Martens is especially noteworthy as Pine Martens are arboreal predators and their presence on a regional and national level is linked to forest cover and the connectivity of forest cover (O'Mahony et al., 2006). In Ireland evidence of pine marten have found in a variety of habitat types from conifer plantations, to semi-natural woodland, scrub dominated habitats and mixed forest (O'Mahony et al., 2006). Pine Martens are however known to favour mature forest stands and avoid open habitats such as bogs and fields (Brainerd and Rolstad, 2002; Storch et al., 1990). Habitats traditionally associated with Hen Harriers (Ruddock et al., 2015). A number of studies also demonstrate that the probability of predator occurrence tends to decrease with increasing distance from forest edges and that predators prefer smaller forest fragments (Chalfoun et
Any AA must consider the increased risk of predation as an indirect impact of increased forest cover. Increased levels of predation may also impact on hen harrier indirectly through increased competition with other predators for prey items such as passerines and mammals.

Wilson et al. (2012) found that Hen Harrier breeding success can decrease noticeably when the percentage of second rotation pre-thicket forest in the surrounding landscape is greater than 10%. On this point Irwin et al. (2012) sets out that ‘In a forest landscape with a well-balanced age-structure, approximately one quarter of the forest estate will be in pre-thicket stage at any one time. A maximum threshold of 40% for total forest cover in the landscape would therefore ensure that the percentage of pre-thicket forest did not regularly exceed 10%.’

The question when carrying out an appropriate assessment is not at what point will forestry drive the collapse of a hen harrier population regionally but rather at what threshold will a negative impact occur?

Significance of effects in view of the SPA conservation objectives
According to Article 6(3) of the Habitats Directive any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.

There are six SPAs designated for the Hen Harrier within the Republic of Ireland: Mullaghanish to Musheramore Mountains (004162), Slieve Aughty Mountains (004168), Slieve Beagh (004167), Slieve Bloom Mountains (004160), Slievefelim to Silvermines Mountains (004165), Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle (004161).

The conservation objectives for all six SPAs are:

To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: A082 - Hen Harrier - *Circus cyaneus*.

The favourable conservation status of a species is defined in the Habitats Directive and is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Population Dynamics
There have been four national surveys of the Hen Harrier in Ireland to date (Norriss et al., 2002, Barton et al., 2006, Ruddock et al., 2012, Ruddock et al., 2015). Based on the analysis of the population dynamics data carried out in the most recent survey for the Hen
Harrier it can be concluded that the species is not maintaining itself on a long-term basis. The subset analyses carried out as part of the most recent survey in order to standardise the comparison of numbers between years and reduce biases associated with increasing survey effort between surveys has revealed that the national population has undergone declines in the short, medium and long term (Ruddock et al., 2015).

- The first subset comparison shows a decline of -16.4% over the last five years in the maximum population estimate;
- The second subset comparison shows a total decline of -16.7% from 2010 to 2015 and -9.7% between 2005 and 2015 in the maximum population estimates; and
- The third subset comparison shows an overall decline of -33.5% from 1998 – 2000 to 2015 (Ruddock et al., 2015).

Natural Range and Suitable Habitat Availability

There has been an increase in recorded distribution since the last survey in 2010 particularly with the number of possible pairs and whilst some of this may be due to increasing survey effort, some of this may be due to redistribution from the loss of pairs from within core breeding areas this may indicate a shifting range from formerly suitable areas to other areas which may be less suitable and hence the high number of additional possible pairs recorded (Ruddock et al., 2015). This redistribution theory however has yet to be substantiated. In any regard the ongoing decline in the national population will inevitably impact upon the species national range and this has been recorded historically with the loss of breeding hen harriers from former strongholds like the Wicklow Mountains (Ruddock et al., 2012).

The range of the species in the medium to long term will be linked to the quality and availability of suitable habitat. As Hen Harriers are traditionally associated with upland habitats, peatlands and rough grasslands the conservation status of these habitats is a valuable reference for the species long term prospects. According to the NPWS many activities including drainage, reclamation, agricultural improvement, peat extraction, erosion, burning, and afforestation and overstocking have resulted in large scale loss and degradation of upland habitats. The focus of wind energy developments on upland areas has also had serious impacts on sensitive habitats through fragmentation, disturbance, hydrological changes, soil erosion and landslides (Perrin et al., 2014). The ongoing loss of semi-natural grasslands to pressures such as agricultural improvement, afforestation and scrub encroachment is well established (O’Neill et al., 2013). Many of these pressures will continue to increase due to factors such as the ongoing intensification of the agricultural sector under Food Harvest 2020 and Food Wise 2025, the expansion of national forest estate towards 2046 and the increase in windfarm development. The NPWS in ‘The Status of EU Protected Habitats and Species in Ireland’ report list the overall conservation status of Irelands peatlands (4010 Wet heath Bad, 4030 Dry heaths, 7110 Raised bog (active)*, 7120 Degraded raised bogs, 7130 Blanket bog (active)*) as bad. Each of the Annex I grassland habitats were also considered to have a bad conservation status (NPWS, 2013).

Based on the current trends the long term outlook for the species and its traditional habitats are unfavourable. Any AA for a plan or project is required to be considered in light of the precautionary principle and the conservation objectives for the sites designated for the species, and falls to be considered amongst extensive pressures on the Hen Harrier and its habitat impacting on its favourable conservation status.
Specific examples of improper procedure

An Taisce have made somewhere in the region of 80 submissions in relation to forestry applications in or adjacent to the Six Hen Harrier SPAs since 2013. This does not include submissions made in relation to other sites of conservation interest to Hen Harriers which lie outside of the SPA network. This figure is significant given that An Taisce only makes observations in instances where it is deemed that a potential significant negative impact may occur. The figure is also large given that there has been a moratorium on further afforestation in the Six Hen Harrier SPAs (Slieve Bloom Mountains SPA, Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA, Mullaghanish to Mushermore Mountains SPA, Slievefelim to Silvermine Mountains SPA, Slieve Beagh SPA and Slieve Aughty Mountains SPA).

In the case of application CN72850 afforestation was approved within the Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle (004161). No screening for AA or a full AA were carried out. The NPWS acknowledged that the site lay within a Hen Harrier SPA but did not object to the application or call for an AA. The site also lay within a Hen Harrier Red Zone. This example highlights confusion around the definition of a plan or project as well as the conditions which trigger an AA. This application should have been subjected to an AA and approval should have been refused based on the direct, indirect and cumulative negative impacts associated with forestry.

Application CN67351 and CN67361 were both approved despite the fact they lie within the Stacks to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161) and also in the Lower River Shannon cSAC (002165).

In relation to CN72821 technical approval was given for afforestation within Flughany Bog SAC/NHA, Site Code: 000497. An Taisce had clearly identified the need to carry out an Appropriate Assessment (AA) to consider any possible impact of approval on the direct, indirect and cumulative effect of afforesting plot 3 which is directly within the SAC/NHA and the effect of afforesting plot 1, 2 and 4 which lie directly adjacent to the Flughany Bog SAC/NHA. The NPWS made 'No Comment' on this application. This is despite the fact that Conifer forestry was highlighted by the NPWS as one of the key conservation issues within the site. Afforesting the site would be in clear contradiction of the Conservation Objectives of the site and would not be in line with the main issues for the site which are clearly identified in the NPWS Conservation Plan for Flughany Bog SAC (2005) - http://www.npws.ie/sites/default/files/publications/pdf/CP000497.pdf

Following An Taisce's appeal of the approval of CN72821 the application was only then referred to the Forestry Services Ecologist Katherine Duff for observation and comment. Following a site visit the ecologist opined that Plot 3 lay within the SAC/NHA boundary and that Plot 3 had direct hydrological connectivity with some of the best active raised bog habitat within the SAC. Active raised bog habitat (a priority habitat) lies within 220m of plot 3 while the edge of the high bog comprising a mosaic of pools, hummocks and hollows with a high sphagnum cover >60% lay within a mere 80m of Plot 3. The ecologist opined that ground preparation in plots 3, 2 and 1 are likely to result in indirect negative impacts on the hydrology of the SAC. Plot 1 was found to directly adjoin an area of Annex I habitat Wet Heath. Plot 2 contains Fen Meadow and potential Marsh Fritillary habitat. The fact approval was given for CN72821 by the forest service without any objection from the NPWS
demonstrates that there are clear failures in the current approach to forestry approvals. This approval would have led to both direct and indirect negative impacts on a number of Annex I habitats and Annex II species under the Habitats Directive including a designated SAC/NHA priority habitat.

In relation to application CN71582, approval was given for a large forestry plantation partly within and partly outside of Slieve Rushen Bog NHA (site code: 00009). This site is of national importance for hen harriers and other upland habitats and species. This approval highlights the lack of protection afforded to Annexed species like hen harriers outside of their six SPAs and the lack of protection afforded to NHAs in general. It also highlights a failure to accept the clear negative impact of forestry on upland biodiversity and the damage that fragmentation and edge effects cause upland species. An Taisce successfully appealed the approval of this application and afforestation of plots within Slieve Rusheen Bog NHA. Our objection to another plot on that basis that it would create a barrier to movement for species within the landscape and fragment suitable habitat was also upheld. A field inspection by the Forest Service Ecologist deemed that plot 4 of the application was wet heath, an Annex I habitat. By virtue of the habitats size and quality and its connectivity to Slieve Rusheen Bog NHA the approval of afforestation in this plot was also overturned. The fact that approval was given by the Forest Service to afforest an Annex I habitat warrants review. As does the failure of the NPWS to object to this application. Field surveys of sites which are likely to harbour important habitats or species should be carried out mandatorily by a trained ecologist.

The afforestation of NHAs is a recurring issue. Even NHAs containing habitats as threatened and sensitive as raised bogs have been approved for afforestation (CN67700 - Black Castle Bog NHA, Site Code:000570, CN68771 - Lough Tee Bog NHA, Site Code: 000307).

Recommendations

The forestry service must ensure that the protection of Annex I and priority habitats as required under Irish and EU law and the Forestry Services Environmental Requirements for Afforestation Guidelines (2016) are implemented. This may require appointing more trained ecologists within the Forestry Service and/or training for foresters in habitat classification. The protection of any site which is likely to host an Annex I habitat due to its location, altitude, soil type etc should be assessed by a trained ecologist. The protection of Annex I peatlands such as Wet Heath [4010], Dry Heath [4030], Alpine and Sub Alpine Heath [4060], Blanket Bog Active* [7130] and Rhynchosporion depressions [7150]and Annex I grasslands such as Molinia Meadows [6410] and Species-rich Nardus upland grassland* [6230] should be an urgent priority.

New afforestation should not take place on habitats that support diverse assemblages of open-habitat specialists particularly when these are red/amber-listed species or Annex I species under the Habitats Directive.

The forest service must review their guidelines and procedures and ensure compliance with the provisions relating to the protection of HNV farmland from afforestation in EU regulation No 807/2014 of 11 March 2014 (supplementing Regulation (EU) No 1305/2013) i.e. 
"Minimum environmental requirements with which the afforestation of agricultural land must comply should be laid down ensuring that no inappropriate afforestation of sensitive habitats including areas under high natural value farming takes place and that the
need for resilience to climate change is taken into account. On sites designated as Natura 2000, afforestation should be consistent with the management objectives of the sites concerned. Special attention should be paid to specific environmental needs for particular sites such as the prevention of soil erosion. More stringent rules should be provided for afforestation operations leading to the creation of larger forests in order to take into account the impact of scale of those operations on the ecosystems and to ensure that they comply with the objectives of the Green Infrastructure Strategy (1) and new EU Forest Strategy (2).

The forest service must review their Environmental Requirements for Afforestation Guidelines (2016) and ensure that the habitats of Annex I species and Bird of Conservation Concern are protected from afforestation where appropriate. The forest service must ensure that there is no further afforestation of sites which are nationally important for breeding hen harriers. In the six hen harrier SPAs forestry should be removed to achieve a maximum threshold of 40% for total forest cover in the landscape as per Irwin et al (2012).

The forestry service should carry out a review of their implementation of the legal requirements of Article 6(3) of the Habitats Directive and address the issues we have highlighted, including issues at screening, appropriate assessments stage and the failure to assess cumulative impacts.

Steps should be taken to ensure that no disturbance of habitats of red listed floral species occurs.

In order for Environmental Requirements for Afforestation Guidelines (2016) to be implemented An Taisce request that future conditions to approval reflect the site specific nature of the guidelines. It is on the basis of these guidelines that we make plot level recommendations. This is the level of detail required by the governing environmental legislation.

Water Quality impact of Irish Forestry

As part of National Characterisation Report for Ireland forestry was identified as one of the land-use activities posing a potential risk in terms of diffuse pollution (Anon, 2005). Forestry in Ireland, along with agriculture are accepted as major sources of diffuse pollution. Pressures associated with forestry are increased acidification from plantations in acid sensitive catchment, sedimentation during afforestation, road construction and clear-felling and erosion on steep catchments and eutrophication from fertilisation on steep catchments and forest harvesting on peat soils (Hutton, et al., 2008).

The distribution of forestry nationally is not homogenous and as such it is a greater source of pollution in some catchments than others. Forestry is however a significant water management issue in certain parts of the country due to the status of forestry as a significant land use and also due to other contributing factors such as local abiotic conditions and forestry management (Hutton, et al., 2008). According to the integrated water quality assessment for the North Western and Neagh Bann River Basin District in 2013, a total of 168 river stations in the North West International River Basin District (NWIRBD) had a
biological Q value that was less than ‘good’ status (i.e. <4). The suspected causes of pollution at 93 or 55.4% of these stations was agriculture while 32 or 19% of pollution incidences were due to forestry. The third biggest pressure was municipal waste water which was identified as a pressure at 22 or 13.1% of stations (EPA, 2014). Similarly in the Western River Basin District (WRBD) forestry is one of the most significant suspected causes of pollution. The main causes of river station in the WRBD river stations being in unsatisfactory condition (i.e. biological classification less than Good) was 31% agriculture, 21% municipal waste water and 11% forestry (EPA, 2014).

The HYDROFOR study was a 7-year assessment of the Impacts of forestry operations on the ecological quality of water in Ireland (Kelly-Quinn et al., 2016). This comprehensive study reaffirmed the eutrophication, acidification and sedimentation impacts of commercial forestry during the closed canopy, harvesting and planting phases on rivers and lakes in Ireland. The study again highlighted the established negative impacts of forestry operations on surface water quality and freshwater ecology. The report recommended that some impacts could be reduced by careful onsite management. However on peaty soils the impact on hydrochemistry and aquatic macroinvertebrates was shown in catchments with both low and high forest cover, relating to elevated DOC concentrations and lower pH. These research findings, in combination with the potential for sediment and nutrient losses during harvesting and preparation for replanting and biodiversity concerns, support a recommendation for the cessation of conifer afforestation on peat soils (especially blanket and raised peat bogs) in acid-sensitive (< 15 mg CaCO3/L) headwater catchments. In relation to reforestation of sites in such catchments, there are serious concerns with respect to the aforementioned impacts. These recommendations have yet to be implemented.
One of the most perturbing pressures of Irish forestry on water quality is the widespread use of Cypermethrin. Cypermethrin a Priority Substance pesticide which is highly toxic to aquatic invertebrates is widely used by semi-state forestry company Coillte. Of the 6,352ha planted by Coillte in 2016 **69% has been treated with Cypermethrin** (Coillte, 2016). Cypermethrin is very toxic even at low concentrations (Marigoudar, et al., 2009). Under various lab experiments Cypermethrin has been demonstrated to be acutely toxic to an array of freshwater invertebrates and some species of fish (Stephenson, 1982). Cypermethrin is acutely toxic to crustaceans and reduces the abundance of abundance of rotifers, protozoans and bacteria and the chlorophyll-a concentration of planktonic and periphytic algae (Friberg-Jensen, et al., 2003). The reduction in predatory crustaceans is likely to lead to fundamental changes in the species composition of lower trophic levels (Friberg-Jensen, et al., 2003). At high doses cypermethrin is lethal to finfish (Marigoudar, et al., 2009).

It is likely that forestry will continue to grow in areas of the country where forestry has traditionally been a significant and growing land use such as the North Western, Western and South Western River Basin Districts as well upland areas in other parts of the country. The current water quality issues associated with forestry will be exacerbated as forestry expands nationally. This will be a challenge to Ireland meeting our targets under the WFD unless changes in practice are adopted.
The Environmental Requirements for Afforestation Guidelines (2016) made significant progress in improving the afforestation guidelines in relation to the protection of water quality. Increased setback for example were established for peat soil types and High Status water bodies under the WFD. Unfortunately An Taisce are not satisfied that these new guidelines are being implemented. A recurring issue we observe with afforestation approvals is that the conditions for approval to not stipulate what setback are required as a condition to approval nor do they give the level of site specific detail which would be necessary to properly implement the guidelines and avoid water quality impacts.

In the case of approvals which simply state ‘all guidelines to apply’ it is impossible for An Taisce as statutory consultees to know if our concerns or the environmental guidelines are being adhered to unless the conditions for approval are clear. Stating that the water element of the Environmental Guidelines will apply is meaningless when the guidelines themselves vary depending on the soil type, slope and proximity to High Status Sites and Natura 2000 sites. It is necessary that the approval is clearly linked to site specific conditions. It is unclear to us whether the recommendations of Forestry Inspectors are being double checked or if ecological assessments are being carried out. There is a recurring issue where peat soils are being defined as mineral peat and a minimal mineral soil setback is being implemented rather than the required peat soil setback. This is occurring in areas where Teagasc have identified the soil type as being peat for example.

In order for all relevant guidelines to be implemented An Taisce request that future conditions to approval reflect the site specific nature of the Forestry Service Water Quality Guidelines and the updated Environmental Requirements for Afforestation (2016). It is on the basis of these guidelines that we make plot level recommendations. This is the level of detail required by the governing environmental legislation.

High Status Sites
The Water Framework Directive (WFD; 2000/60/EC) requires all EU Member States to categorise their water bodies according to their ecological status as high, good, moderate, poor and bad. The WFD also requires that Member States identify water bodies that have been minimally impaired by anthropogenic pressures (Irvine & Ní Chuanigh, 2010). High status sites are indicators of largely undisturbed conditions and reflect natural background status or only minor distortion by anthropogenic influences (Ní Chatháin et., 2012). These are the reference sites from which all other sites are compared in order to estimate an Ecological Quality Ratio (EQR) based on observed state compared with reference. High status sites are important in this regard in that they provide a baseline against which monitored sites can be compared (Irvine & Ní Chuanigh, 2010).

There has been a dramatic decline in the number of high status river sites in Ireland since 1987. The percentage number of high quality sites had almost halved in the 22 years between 1987 and 2012 (EPA, 2015). In each survey period the decline continued, from 29.6% of the total sampled in the 1987-1990 period to 16.4% in 2007-2009 (Figure 3). Although there was a slight increase in the numbers of high status sites in the latest survey (18.3%) EPA 2010-2012 survey (EPA, 2015). Only 11.5% of rivers, 9% of lakes and 3.6% of transitional waters were considered to be of high status for the 2010-2012 period (EPA, 2015).
High Status Rivers equate to an EPA river monitoring score of Q4 or Q5. The number of sites assigned Q5 high status reference condition continues to decline in the latest survey (38 sites (2007-2009) to 27 (2010-2012)) (EPA, 2015).

The smallest pressure can impact on high status. Small increases in the amount of P and N can damage the sensitive ecology associated with these sites (Ní Chatháin, et al., 2012). Significantly the national network of high status water bodies are clustered and high status sites are negatively correlated with the intensification of land uses such as agriculture and forestry (Irvine & Ní Chuanigh, 2010). A report commissioned by the Irish Environmental Protection Agency to suggest new approaches to ensuring that high status water bodies remain at high status concluded that in order to protect the remaining high status sites and in order to reverse the trend of decline, it is important to tackle the principal pressures causing the ecological damage. Forestry activities were identified as being one of these pressures. To date the necessary protective measures have not been implemented to protect high status sites from further afforestation (Ní Chatháin, et al., 2012).

Beyond the requirements of the Water Framework Directive the loss of high status sites in Ireland is negatively impacting on species such as the freshwater pearl mussel (Margaritifera margaritifera) the endemic subspecies the Nore freshwater pearl mussel (Margaritifera durrovensis) and the Atlantic salmon (Salmo salar). The freshwater pearl mussel and the Nore freshwater pearl mussel are listed under Annex II and V of the Habitats Directive. According to the NPWS (2013) report on The Status of EU Protected Habitats and Species in Ireland both species have bad conservation status with an overall declining trend in conservation status (NPWS, 2013). Likewise the Atlantic salmon is listed under Annex II and V of the Habitats Directive. Its overall conservation status is inadequate as are its future prospects. Diffuse pollution to surface waters due to agricultural and forestry activities is considered as a threat and pressure of high importance on freshwater pearl mussels (NPWS, 2013).
The distribution of HNV farmland and rivers of good ecological status are both negatively correlated with agricultural intensity and so areas of HNV farmland are often found in association with High Status Water Bodies. Recent research compared areas of high and very high HNV farmland likelihood, with the distribution of river water bodies of good ecological status (2010–2012). Of the assessed river lengths, 63% of the river water bodies at good status and 79% of the river water bodies at high status occurred in areas with high HNV farmland potential (Moran & Sullivan, 2016).

Afforestation is a threat and pressure for HNV farming and High Status sites under the WFD. According to Moran & Sullivan (2016) the maintenance of high-status water bodies in these areas requires an integrated and targeted approach to the management of HNV farmland to meet the requirements of the Water Framework Directive. The management of HNV farmland for biodiversity has the potential to have co-benefits for water quality and quantity, such as the regulation of flooding and maintaining base flow. Improved co-ordination and spatial targeting of initiatives for HNV farmland could play a major role in meeting the requirements of the Water Framework Directive and the Birds and Habitats Directives. An example of how there is a lack of joined up thinking within the forestry sector in relation to the need to protect both HNV farmland and High Status Sites is the use of native woodland belts to protect water quality in rivers supporting freshwater pearl mussel from commercial forestry. This is in many cases an overlap in the spatial distribution of SPAs designated for open habitat specialists like Hen Harriers and waterbodies designated for freshwater pearl mussels. In these instances it would be in the interests of both terrestrial and freshwater
biodiversity to maintain or re-establish extensive HNV farming practices. Currently this win – win scenario is not being implemented due to the drive to aggressively increase afforestation on marginal land. The identification and protection of HNV farmland and High tuts sites must be a priority at both a national and EU level. Afforestation in many of these areas should not be allowed.

Recommendations
The majority of the national forest estate predates the current Forestry and Water Quality Guidelines (2000) meaning that vast areas may not be compliant with the guidelines and therefore a threat/pressure on water quality. Replanted forestry must adhere to the relevant Water Quality guidelines.

The age structure of the national forest estate means that a large proportion of the forestry in Ireland will be felled over the coming decades. This will result in an increase in water pollution. Steps should be taken to ensure that such bottlenecks do not occur in the future. Replanting in catchments which host High Status Sites should be carried out so that a heterogeneous age profile is achieved.

During onsite assessment aquatic zones are identified as a permanent or seasonal river, stream or lake shown on an Ordnance Survey 6 inch map. This is in An Taisce’s opinion a deeply flawed method of identifying waterbodies and wetlands. The definition of a waterbody within the Forestry and Water Quality Guidelines (2000) is linked to whether a river featured in the old Ordinance Survey Ireland 6” map series. According to a personal communication with OSI the criteria for featuring a river in the 6” map was that the river had a name. This does not seem a reasonable basis for adjudging whether a river deserves an aquatic buffer under the Forestry and Water Quality Guidelines. Many seasonal rivers are not shown on the OS maps and as the maps are based on older maps they are prone to becoming outdated. It is also noted that the EPA water layer on iFORIS may not capture all aquatic zones onsite. The definition of a waterbody needs to be updated and a new guideline adopted which is linked to the potential of forestry to negatively impact on water quality and aquatic biodiversity on site and downstream. The definition of a wetland used by the Department of Environment is “natural or artificial areas where biogeochemical functions depend notably on constant or periodic shallow inundation, or saturation, by standing or flowing fresh, brackish or saline water”.

The ground preparation works associated with forestry in many instances require drainage. The drainage of wetlands in the planning regulations requires an EIA, where it is proposed, for example, to drain or reclaim a wetlands area of less than 0.1 hectares, that development will be exempted from the requirement to obtain planning permission only where it would not be deemed to have a significant adverse effect on the environment. Where it is deemed that the drainage of less than 0.1 hectares of wetlands would be likely to have a significant adverse effect on the environment, a planning application with an environmental impact assessment will be required. Development consisting of drainage and/or reclamation of wetlands (including estuarine marshes or callows) is 2 ha.

As has been highlighted previously the predominance of coniferous species nationally and in particular of sitka spruce is an issue when it comes to acidification (Johnson et al., 2008). The age structure and the related height structure of Irish forestry nationally will also lead to greater acidification affect (Johnson et al., 2008). The location of so much forestry on soil
types that are sensitive to acidification and the concentration of forestry at high altitudes is also an issue which is highlighted in the scientific literature (Johnson et al., 2008). Increasing the amount of broadleaf species nationally will reduce acidification and have obvious biodiversity benefits. Reducing the amount of forestry being planted in peaty soils and at altitude will also reduce acidification. In the UK the agreed approach is to undertake a catchment-based critical load assessment for waters failing or at risk of failing good status due to acidification (Forest Service UK, 2003). Given the ongoing loss of high status sites and the above highlighted issues it would be beneficial to carry out a catchment based assessments of pressures associated with forestry.

The opening-out of stream sides can promote biological recovery in streams showing acidification. Targeting such streams for earlier clearance of dense conifers, conversion to open, native broadleaved woodland and linking restored zones can aid the migration of fish and recolonization by invertebrates (Forest Service UK, 2003). Restructuring closed canopy conifer stands can help reduce pollutant capture and the risk of acidification by creating a more diverse forest with different aged stands, more open space, and a wider range of tree species including broadleaves. Restructuring should be prioritised in areas with - forest cover is over 50%, acid sensitive soils, areas with high-status sites or designated waterbodies (SAC/SPA/NHA/pNHA).

The impact of individual pressures on macroinvertebrate communities has been well researched but the cumulative impact of various forestry related pressures is less well understood. New bio-indicators may be needed to answer some of the questions around instream impacts moving forward.

Given the toxicity of Cypermethrin it should be completely banned in Ireland.

Sedimentation and eutrophication increase as the extent of soil disturbance increases. Limiting the area of land within a given catchment which is either being planted or harvested at any given time will limit the amount of sediment within the aquatic environment. This may be particularly beneficial in catchments with high erodible soils. Controlling the proportion of a catchment disturbed at any one time will also reduce N and P inputs (Hutton et al., 2008). The forestry service Code of Best Forest Practice – Ireland (Forest-Service, 2000b) advises that harvesting operations should take place between April and October. This is when ground conditions tend to be drier and water quality impacts associated with harvesting are therefore reduced. However the forestry service “Appropriate Assessment Procedure (AAP) requirements regarding Hen Harrier SPAs, felling and other disturbance operations” state that no disturbance operation(s) associated with the felling licence are to take place within Hen Harrier ‘Red Areas’ during their breeding season (1st April to 15th August, inclusive) (Forest-Service, 2012). Restricting felling and other operations associated with ground disturbance to August 16th – October increases the likelihood of forestry associated water pollution. This is a major issue in areas where there is an overlap of Hen Harrier SPAs and Freshwater Pearl Mussel SACs. In such areas it is questionable whether current forestry practices can avoid having a significant negative impact on both protected species simultaneously. This conflict between forestry, the Habitats and Birds Directives and the Water Framework Directive must be resolved.

Despite the increased risk of P loading Ireland’s uplands and western seaboard are generally associated with higher Q values and high-status sites. This is likely to be due to the lower incidences of other pressures such as intensive agriculture and municipal and urban waste
water (Hutton et al., 2008). However the EPA Water Quality in Ireland 2010-2012 report (2015) highlights the ongoing decline in Ireland’s Q5 and high status (Q4-Q5) sites. Forestry is likely to be one of the main sources of pressures on the chemical, physical and ecological integrity of the water bodies in these sites. What is most concerning is the fact that the true impact of forestry is yet to be manifested. Given that just under three quarters of the national forest estate consists of trees of 30 years old or less a large proportion of the national forest estate will be felled within a relatively short timeframe (Forest Service, 2014).

In relation to forestry and High Status sites An Taisce support the findings/recommendations and the key strategies proposed by the EPA in their “Management Strategies for the Protection of High Status Water Bodies” report (Ní Chatháin et., 2012).

**Findings/Recommendations:**

(i) Planning and development in high status catchments is an environmental issue;

(ii) High status catchments provide valuable ecosystem services;

(iii) High status catchments have little to no capacity for further intensification;

(iv) High status catchments and protected areas require similar protection strategies; and

(v) County Development Plans and all plans and policies should reflect the sensitivity of high status water bodies.

**The key strategies proposed are:**

(i) High status catchment delineation and prioritisation for protection measures;

(ii) Establishment of a spatial network of high status waters;

(iii) Establishment of a ‘blue dot’ monitoring system by the EPA;

(iv) Potential additional measures under the WFD over and above European Directive requirements;

(v) Assessment of potential impacts, and consideration of the risk of failing to meet high status;

(vi) Planning/Licensing control and assessment of cumulative impacts;

(vii) Centralised GIS database, or activities database;

(viii) Integrated monitoring and protection;

(ix) Unregulated activities – where control mechanisms are required; and

(x) Public awareness campaigns.
As there is a direct overlap in areas containing high status sites and the distribution of marginal land targeted for the expansion of forestry it is likely that forestry will continue to drive further losses on high status sites with associated impacts on protected species such as the Atlantic salmon and freshwater peal mussel. As high status sites have no capacity to absorb further deterioration in water quality any increase in nutrient status, pH, or sediment loads associated with forestry will lead to the loss of high status. As many high status sites are found in upland areas with peaty highly erodible soils the disturbance associated with drainage and clear felling are highly likely to result in water pollution and may result in bog bursts in extreme circumstances.

There is a strong overlap with high status sites and many of our upland areas of high biodiversity value. Many of these areas are managed for conservation or are part of High Nature Value farming systems. Under the current RDP several schemes will be introduced under Pillar II in the form of Locally Led Agri-Environment Schemes. These schemes will include a freshwater pearl mussel scheme, a hen harrier scheme and an upland scheme. These schemes will also to complemented by the by the Green Low Carbon Agri-Environment Scheme (GLAS). Given the spatial overlap between the areas involved in these schemes and high status catchments there is a need for a landscape conservation approach to which focuses on the need to support traditional extensive HNV farming. Measures that protect high status sites should be part considered as part of other schemes which are targeted at upland areas.

There is a need to review forestry practices, forestry consent and the appropriate assessment procedure and the forestry and water quality guidelines has been covered in detail in the forestry section. Pressures exerted by forestry such as eutrophication, sedimentation and acidification will all negatively impact upon high status sites. These pressures will only increase as forest cover expands nationally.

There is an urgent need to explore the benefits of continuous cover forestry as an alternative to the current model in catchments which contain high status sites.

High status sites should be afforded the same level of protection as protected habitats, under the habitats and birds directives with the same approach to planning and appropriate assessment. High status sites should be connected and be part of a conservation strategy on a landscape scale. A national network of aquatic buffers and riparian habitat would protect aquatic biodiversity as well as providing habitat and corridors for terrestrial wildlife.

The protection of high status sites needs co-ordination at national level and RBD level by all local and public authorities. A detailed, of threats and pressures, within individual high status catchments will inform remediation efforts and inform the screening for potential impacts by local and public authorities and to trigger impact assessments, which may be required of applicants. Policies and objectives within CDPs will provide a focus for protection and restoration of these sensitive catchments (Ní Chatháin et., 2012). The protection of high status waters requires an effective policy framework and protection mechanisms. It also requires locally focussed stakeholder engagement and a redirection of funding targeted to be fit for purpose. Relying on current policies and structures to protect high status water bodies is unlikely to be effective. (Irvine & Ní Chuanigh, 2010).

In order for the new water quality elements of the Environmental Requirements for Afforestation Guidelines (2016) to be implemented An Taisce request that future conditions to approval reflect the site specific nature of the Forestry Service Water Quality Guidelines
and the updated Environmental Requirements for Afforestation (2016). It is on the basis of these guidelines that we make plot level recommendations. This is the level of detail required by the governing environmental legislation.

Climate
An Taisce were one of the contributing members to the Environmental Pillar and Stop Climate Chaos published report ‘Not So Green: Debunking the Myths around Irish Agriculture.’ The report draws on extensive policy and scientific evidence to challenge government and industry claims regarding the sustainability of Irish agriculture, in terms of its efficiency, its contribution to global food security, and its adequacy in climate mitigation. The document also highlights inadequacies in the Irish Government’s approach to LULUCF (Land use, land use change and forestry), and challenges the argument that afforestation presents a viable option to offset emissions from agriculture.

Chapter 2 of the report titled *Challenging the Use of Afforestation for Carbon Sequestration* totally discredits the claim that Ireland’s Forestry Programme can contribute to Ireland’s EU climate obligations by offsetting agricultural greenhouse gas emissions.

In Summary the report reads:

Using land use sinks to offset agricultural emissions is NOT scientifically justifiable.

- Government and industry claim that the high level, and projected increase, of emissions from livestock can be off-set by an increase in afforestation. This argument is scientifically flawed because the off-set available is only a small fraction of potential fossil fuel emissions (Mackey et al., 2013). Also, as detailed by the Intergovernmental Panel on Climate Change (Ciais et al., 2013), such land sequestration is impermanent (relative to the thousands of years of mitigation required), highly uncertain, and subject to carbon cycle rebound effects that seriously reduce their value. Widespread afforestation also presents significant threats to Ireland’s biodiversity, where planted forest replaces more diverse habitats.

- Ireland has undergone considerable afforestation with non-native conifers over the course of the 20th century. Forest management for bioenergy and wood has stored far less carbon than would have occurred without management. Darker conifers absorb more sunlight increasing global warming (Naudts et al., 2016).

- Irish plans for developing a bioenergy sector from forestry are relying on a critical EU climate accounting error (Searchinger, 2009) which incorrectly counts bioenergy from all biomass sources as carbon neutral. In fact, timber harvested from existing forests burned for electricity adds net carbon to the atmosphere.

- Although forestry and soils are regarded by the Irish government as viable land-use options for offsetting agricultural emissions, wetlands and peatlands are not. The failure by government to include peatlands is likely explained by the fact that our peatlands are currently being used unsustainably for the industrial scale extraction of peat for burning and horticultural purposes. This extraction and associated drainage creates large emissions, making peatlands, which were once a net sink, now a major emission source. Peatlands are still Ireland’s largest terrestrial carbon reservoir. Purposely selecting one land-use sink to
offset emissions, while continuing to actively destroy a much greater reservoir and a former sink (i.e. Ireland’s peatlands), is unjustifiable.

• There is no scientific justification for offsetting emissions against any particular sector or group of sectors against possible but highly doubtful, enhanced carbon sequestration in land-use sinks. Carbon removals should be additional to emission reductions, not replacing them (Carbon Market Watch, 2016).

Real carbon sequestration in Ireland: the need to preserve our peatlands

• A contradiction exists whereby the Irish government want to include certain land uses to offset agricultural emissions, namely forestry and soils but they do not want to include wetlands, which are Ireland’s greatest terrestrial carbon sink. Ireland’s highly degraded peatlands are a source of very large flux emissions. Disturbances in the form of industrial and domestic peat extraction, private afforestation, overgrazing, wind farms and recreational activities are having major negative impacts on the hydrology, ecology and sequestration capacity of Ireland’s peatlands.

Peatlands cover less than 3 per cent of the global land surface but store more carbon than is contained in the vegetation of the world’s forests (Parish et al., 2008). The Republic of Ireland is third only to Finland and Canada in proportional area of peatland cover with peat soils covering 20 per cent of the country (Gore ., 1983). In their healthy state, bogs will not only store carbon but they will continue to absorb CO2 as they grow (Wilson et al., 2013). In Ireland however, we have a poor record of managing our bogs and, it is estimated that at the national level, emissions from Irish peatlands and related activities (e.g. combustion, horticulture) are around 11.01 Mt CO2 yr-1 to the atmosphere (Wilson et al., 2013). In comparison annual net C sequestration rates for Irish forests are equivalent to 3.6 MT CO2 yr-1. The sequestration through afforestation is finite, potentially short term and reversible. The actual climate contribution of the Irish forestry sector is highly dependent moving forward on afforestation rates and when the overall environmental and climate impacts are considered it is clear that this is not a credible approach to climate action.

In addition neither Ireland nor the EU can have a credible approach to LULUCF unless peat and soil carbon sink issues are addressed. If properly acknowledged and managed, sequestered carbon could yield important income in terms of agri-climate environmental measures under the Rural Development Plan Regulations. In the UK, the recommended approach to sustainable soil carbon sequestration is to include the management and protection of carbon stocks in existing highly organic soils such as those found in the uplands, peatlands, grasslands and native forests (Billett et al., 2004). Such measures are complimentary to obligations under the Birds Directive and commitments under the National Peatland Strategy (NPWS., 2014) and EU Biodiversity Strategy.

Not So Green: Debunking the Myths around Irish Agriculture
Conclusion

Commercial forestry in Ireland is dominated by intensively managed plantations of non-native conifers. It is clear that the right trees in the right place under the right management can deliver a host of benefits for both Irish society and the environment. Unfortunately the Irish forestry sector continues to be dominated by too many bad trees species in unsuitable areas under unsustainable management. This has resulted regrettably in the forestry sector being a major driver of biodiversity loss both inside and outside of the Natura 2000 network. The loss, degradation and fragmentation of habitat due to the intensification of land use practices such as agriculture and afforestation are the greatest threats to Irish biodiversity. For some habitats and species the situation is now critical and unless swift and decisive action is taken to protect designated habitats and species and High Nature Value farming a range of species including the Hen Harrier and the Curlew will be pushed towards national extinction. Irish forestry is associated with negative impacts on water quality during both afforestation, management and harvest stages of the forestry cycle. It is implicated in the loss of High Status Sites in Ireland over the last two decades and with the associated impacts on the species such as freshwater pearl mussel, the Nore freshwater pearl mussel and the Atlantic salmon. Many of these impacts are occurring because environmental legislation and guidelines are simply is not being properly implemented.

Under these circumstances the current forestry programme has failed to adhere to the overarching EU Policy Framework Europe 2020 strategy of "smart, sustainable and inclusive growth". It has failed to reach its targets for native woodland and broadleaf cover. On the broader role of Irish forestry in relation to the EU climate strategy it is our position that the use of intensive commercial forestry to offset emissions from an expanding and intensifying agricultural sector in Ireland will incentivise the expansion of both sectors to the detriment of the Irish environment. Such a move would not be aligned with important environmental legislation such as the Habitats Directive, Birds Directive or the Water Framework Directive and would run counter to the EUs Biodiversity Strategy 2020. Policies should be pursued which align the EUs climate and biodiversity strategy's. The conservation and restoration of credible carbon sinks such as peatlands, wetlands or more stable and more biodiverse sinks such as permanent native woodland cover and semi-natural grasslands on high carbon soils should be encouraged through LULUCF. Sustainable models of forestry such as continuous cover native broadleaves and agroforestry should be given greater attention moving forward.

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