



Department of Agriculture, Food and the Marine



Appropriate Assessment (AA) Natura Impact Statement

Agri-Food Strategy to 2030

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1 INTRODUCTION

1.1 Purpose of this Natura Impact Statement

RSK Ireland Ltd (hereafter RSK) has been instructed by the Department of Agriculture, Food and the Marine (DAFM) to carry out an Appropriate Assessment (AA) for the Agri-Food Strategy to 2030 (AFS). The AFS is a voluntary stakeholder led strategy facilitated by the DAFM.

This statement has been completed by ADAS, an RSK company.

The process of AA was introduced under Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive), transposed into Irish domestic law through the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended in 2013. These Regulations also transpose Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds (the Birds Directive).

The obligation to undertake an AA derives specifically from Article 6(3) and 6(4) of the Habitats Directive, and both involve a number of steps and tests that need to be applied in sequential order. Article 6(3) is concerned with the strict protection of sites, while Article 6(4) is the procedure for allowing derogation from this strict protection in certain restricted circumstances. Similarly, Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011 sets out the requirements for undertaking an AA. Each step in the four stage assessment process precedes and provides a basis for other steps. The results at each step must be documented and recorded carefully so there is full traceability and transparency of the decisions made.

The purpose of the AA is to protect sites designated as Special Areas of Conservation (SACs; under the Habitats Directive) and Special Protection Areas (SPAs; under the Birds Directive) – collectively known as Natura 2000 sites – including maintaining the integrity of the internationally important species and habitats for which they were designated. An AA is not a prohibition on new development or activities but involves a case-by-case examination of the implications for each Natura 2000 site, its qualifying features and its conservation objectives. In general terms, implicit in Article 6(3) is an obligation to put concern for potential effects on Natura 2000 sites at the forefront of every decision made in relation to plans and projects at all stages, including decisions to provide funding or other support.

Once the screening stage has determined that an AA is required, then the current normal practice is that the proponent of the plan or project prepares and submits information necessary to undertake the AA to the competent authority in the form of a Natura Impact Statement (NIS). DAFM is the responsible authority for decision-making with regard to the screening and AA for the AFS. However, public authorities that wish to adopt a plan or programme are required to submit a NIS and any other evidence to the Minister of Housing, Local Government and Heritage (Regulation 42) not later than six weeks before it proposes to adopt or undertake the plan or project to which the NIS and evidence relates. DAFM must take into account any submissions made by the Minister of Housing, Local Government and Heritage. 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. An AA has therefore been carried out and this NIS presents the process and results of the AA.

1.2 Structure of this Statement

The areas considered in this NIS, and their location in the report, are as follows:

- Overview of the AFS – Section 1.3;
- Background and explanation of the AA process Section 2;
- Identification of relevant Natura 2000 sites, and compilation of information on their qualifying interests and conservation objectives – Section 3;
- Assessment of potential effects of agriculture (direct, indirect and cumulative) on the qualifying interests of Ireland's Natura 2000 sites – Section 3;
- Review of the AFS, outlining key goals and actions relevant to Ireland's Natura 2000 sites – Section 4;
- Likely effects of the AFS – Section 4;
- Mitigation measures – Section 5; and
- Summary and conclusions – Section 6

1.3 Agri-Food Strategy to 2030

The agri-food sector is a key aspect of Ireland's economy, community and culture, exporting to at least 175 countries around the world and contributing a significant aspect of Ireland's global profile and reputation.

The 2030 Strategy builds on its predecessor programmes; Food Harvest 2020 and most recently Food Wise 2025. It aims to establish a vision of how the sector is to develop over the period to 2030 for the benefit of its stakeholders and the wider Irish economy, society and environment. This is reflected in the terms of reference for the 2030 Stakeholder Committee, *"to outline the vision and key objectives, with associated actions, required to ensure the economic, environmental and social sustainability of the agri-food sector in the decade ahead. It is intended that the Committee's report will be short, specific and cross-sectoral, with ambitious but realistic actions"*. A key feature of each of these strategies has been the level of joint engagement by stakeholders and Government.

Food Wise 2025

Food Wise 2025 is the current agri-food strategy. The strategy includes eight overarching sustainability recommendations with over 80 individual environmental actions.

The Environmental Sustainability Committee identified 26 priority actions within the sustainability chapter. At the end of 2019, approximately 27% of these actions are reported as target achieved; 42% have substantial action undertaken and are ongoing; and 31% of actions have commenced and are progressing. Approximately 88% of all of the actions in the sustainability chapter are reported as target achieved/substantial action undertaken and ongoing. The remaining actions are all either ongoing or annual actions. Some of the positive environmental actions that have taken place include:

- Pilot Farm Hazardous Waste Collection Scheme;
- Code of Good Practice for Reducing Ammonia Emissions from Agriculture;

- Voluntary Nitrates Derogation Review;
- DAFM Water Network;
- Agricultural Sustainability Support and Advisory Programme (ASSAP);
- Profiling energy use within the agriculture sector;
- Establishment of an Inventory Refinement Group: to ensure standardisation and use of common data in the inventories for the agriculture and land use sector;
- A high-level Bioeconomy Implementation Group;
- Publication of the Agriculture, Forest and Seafood Climate Change Sectoral Adaptation Plan;
- European Innovation Partnerships projects focusing on themes such as: the preservation of agricultural landscapes; water quality; resource efficiency; climate mitigation/adaptation and biodiversity
- Number of workshops including the Grassland Symposium, the Cross-sectoral Seminar on Climate Change Adaptation and the 2018 Environmental Sustainability Dialogue;
- Public consultation and publication of a climate and air roadmap for the agriculture sector; and,
- Research projects such as LANDMARK Project and scheme evaluations including the Beef Data and Genomics Programme (BDGP) and the Green, Low-Carbon, Agri-Environment Scheme (GLAS).

Despite a number of positive actions, there has been an increase in greenhouse gas (GHG) emissions and in air pollutants such as ammonia over the Strategy period; which presents a particular challenge as emissions from the sector have been higher than the limits set in the National Emissions Ceilings Directive since 2016. Furthermore, water quality has declined and biodiversity continues to decline, with many of the European designated sites in unfavourable condition. Further information is provided in Section 3, which covers the current baseline data.

Strategic Priorities

The backdrop to the development of the AFS takes into account the importance of the agri-food sector to the Irish economy, the contribution of primary producers to this and the consequent importance of the sector to regional and rural prosperity and employment. It also considers Food Wise 2025, including the context and environment in which it was developed, the projections that were agreed for output, export, value added and employment growth, the five pillars of innovation, competitiveness, environmental sustainability, human capital and market development, and then a brief review of performance so far; the evolving external environment, particularly issues such as Covid-19, Brexit, EU policy changes, the natural environment including climate change, changes in the global food system, international trade developments and the emergence of disruptive technology and the growing importance of the bioeconomy. These were set out in Appendix I of the Public Consultation Document that was issued by DAFM as part of the public consultation process in 2019. The Committee has agreed to adopt a 'Sustainable Food Systems' approach in the development of the strategy. The synthesis chapter for the AFS states that '*A Sustainable Food System (SFS) is a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food and nutrition for future generations are not compromised.*' This generates three underlying principles:

- It is profitable throughout (economic sustainability)
- It has broad based benefits for society (social sustainability)
- It has a positive or neutral impact on the natural environment (environmental sustainability).

This has resulted in the development of four main missions, which will act as the core of the strategy. These are:

- A Climate Smart, Environmentally Sustainable Agri-food Sector
- Viable and Resilient Primary Producers with Enhanced Well-being
- Food that is Safe, Nutritious and Appealing; Trusted and Valued at Home and Abroad
- An Innovative, Competitive and Resilient Agri-food Sector driven by Technology and Talent

Each of these missions has a series of goals, as follows:

Mission 1: A Climate Smart, Environmentally Sustainable Agri-food Sector:

Goal 1: Develop a Climate Neutral Food System so that by 2050, the Climate Impact of Methane is Reduced to Zero and remaining Agricultural Emissions are Balanced by Removals; and Improve Air Quality.

Goal 2: Restore and Enhance Biodiversity.

Goal 3: Protect High Status Sites and Contribute to the Protection and Restoration of Good Water Quality and Healthy Aquatic Ecosystems, as Set Out in the Water Framework Directive.

Goal 4: Develop Diverse, Multi-Functional Forests.

Goal 5: Enhance the Environmental Sustainability of the Seafood Sector.

Goal 6: Embed the Agri-food Sector in the Circular, Regenerative Bioeconomy.

Goal 7: Strengthen Origin Green and Other Sustainability Supports to Reflect the Higher Level of Ambition for the Agri-Food Sector.

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-being:

Goal 1: Improve Competitiveness and Productivity of Primary Producers.

Goal 2: Improve the Creation and Equitable Distribution of Value.

Goal 3: Increase Primary Producer Diversification & Resilience.

Goal 4: Improve the Social Sustainability of Primary Producers.

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad:

Goal 1: Prioritise Coherent Food and Health Policies to Deliver Improved Health Outcomes.

Goal 2: Enhance Customer and Consumer Trust in our Food System, Providing Evidence of a Safe, Ethical Food Supply

Goal 3: Increase Value Add in Food & Drink Through Insight, Product Development and Differentiation.

Goal 4: Develop Market Opportunities at Home and Abroad.

Mission 4: An Innovative, Competitive and Resilient Agri-food Sector, Driven by Technology and Talent:

- Goal 1: Move to a Challenge-focused Innovation System.
- Goal 2: A Strategic Funding Approach to Research, Development and Innovation.
- Goal 3: Develop a Dynamic Knowledge Exchange Environment.
- Goal 4: Enhance the Use of Technology and Data.
- Goal 5: Improve Competitiveness and Resilience.
- Goal 6: Attract and Nurture Diverse and Inclusive Talent.
- Goal 7: Policy Coherence and Synergies in Sustainable Food Systems (SFSs) between Ireland's Domestic Policy and Its Development Cooperation and Foreign Policy.

Each of these goals comprises a number of actions. The AFS includes chapters for these four main missions and their associated actions. These are discussed further in the Policy Response section (Section 4.2).

1.4 Geographic Coverage

The geographic area covered by the Strategy comprises the whole of the Republic of Ireland including Ireland's Exclusive Economic Zone (EEZ). The Irish agri-food industry encompasses the agriculture; food and beverage; fishery; fish processing; forestry; and forestry processing sectors.

1.5 Characterisation of the Area

Ireland has 26 counties and is split into three Regional Assembly Areas: Northern and Western Region, Eastern and Midland Region and Southern Region. Ireland's EEZ extends out to a 200 nautical mile limit.

As recommended by the former Department of the Environment Heritage and Local Government (DEHLG) guidance (2009), the AA will also take into account trans-boundary impacts where it is identified that the Strategy measures have the potential to impact on Natura 2000 sites in Northern Ireland. The importance of trans-boundary impacts is also recognised by the Northern Ireland Department of Agriculture, Environment and Rural Affairs (DAERA).

2 APPROACH TO THE APPROPRIATE ASSESSMENT

2.1 Best Practice Guidance

Our AA approach takes into account the procedures provided under the following guidance documents:

- DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities; and
- DEHLG (2010) Circular NPW 1/10 & PSSP 2/10.

We may also refer to the following EU guidance documents:

- EC (2001), 'Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive'.

The AA process has also been discussed with NPWS and incorporates their recommendations.

2.2 The AA Process

The guidance produced by DEHLG (2009) sets out a four stage process for carrying out AA. These stages are shown in *Figure 1* below and described in the following sections.

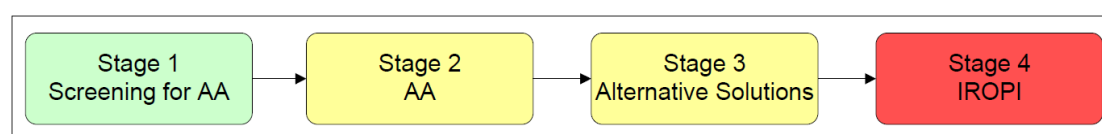


Figure 1: Stages in the AA Process

2.3 Stage 1 - Screening for AA

Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

- Whether a plan or project is directly connected to or necessary for the management of the site; and
- Whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA). Screening should be undertaken without the inclusion of mitigation, unless potential impacts can clearly be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan. The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no impact. The guidance states that the requirement is not to prove what the impacts and effects will be, but rather to establish beyond reasonable scientific doubt that adverse effects on site integrity will not result.

This stage involves identification of Natura 2000 sites and their qualifying interests and conservation objectives, as well as a review of the likely goals and actions to be included in

the AFS. A preliminary impact assessment is carried out to screen the AFS's measures for the likelihood of significant effects. This process also identifies whether the AFS is likely to have in-combination effects with other plans and programmes on Natura 2000 sites.

The Screening Statement is the main output of Stage 1 of the AA process. The statement was issued to the 2030 Stakeholder Committee and to the Environmental Analysis Steering Group (EASG) to feed into the relevant stage of the AFS; it also fed into the Strategic Environmental Assessment (SEA) Scoping Report. The screening statement was consulted on by the NPWS.

2.4 Stage 2 - Appropriate Assessment

As stated in Regulation 42 of the European Communities (Bird and Natural Habitats) Regulations 2011:

Where a public authority is required to conduct an Appropriate Assessment pursuant to paragraph (6) in relation to a plan or project that it proposes to undertake or adopt, it shall—

- (a) prepare a Natura Impact Statement,*
- (b) compile any other evidence including, but not limited to, scientific evidence that is required for the purposes of the Appropriate Assessment, and*
- (c) submit a Natura Impact Statement together with evidence compiled under subparagraph (b) to the Minister not later than six weeks before it proposes to adopt or undertake the plan or project to which the Natura Impact Statement and evidence relates.*

This stage considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. Any possible implications for the affected site(s) in view of the site(s)' conservation objectives will be identified and characterised.

A plan or project may have a significant effect on a Natura 2000 site if it:

- Reduces the area of an Annex I habitat, the habitat of an Annex II species, or the overall Natura 2000 site;
- Damages the physical quality of the environment (e.g. water quality and supply, soil compaction) within the Natura 2000 site;
- Causes serious or ongoing disturbance to species or habitats for which the Natura 2000 site is designated, e.g. increased noise or human activity;
- Results in direct or indirect damage to the size, characteristics or reproductive ability of populations within the Natura 2000 site; or
- Interferes with mitigation measures put in place for other plans or projects.

The assessment considers how the effect on the integrity of sites could be avoided or improved by changes to the AFS missions, goals and actions. Depending on the outcome of the impact prediction and feasibility of changing the AFS missions, goals and actions, mitigation measures may need to be formulated to minimise the negative impacts of the AFS. If the final assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to Stage 3, or the plan or project should be abandoned.

The results of Stage 2 (AA) is documented within this NIS which has been issued to NPWS and other relevant stakeholders as well as being published on DAFM's website. The NIS also fed into the SEA Environmental Report.

2.5 Stage 3 - Alternative Solutions

This stage examines any alternative solutions or options that could enable the plan to proceed without adverse effects on the integrity of a Natura 2000 site. The process must return to Stage 2 as alternatives will require appropriate assessment in order to proceed. Demonstrating that all reasonable alternatives have been considered and assessed, and that the least damaging option has been selected, is necessary to progress to Stage 4.

As revealed later in this NIS, the AA process (undertaken in collaboration with DAFM), has successfully identified, assessed and mitigated all adverse effects to the extent that no negative impact on the integrity of the Natura 2000 sites will occur. It is therefore not necessary to proceed to Stage 3.

2.6 Stage 4 - IROPI

Stage 4 is the main derogation process of Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI, i.e. relating to human health or public safety reasons) for allowing a plan or project that will have adverse effects on the integrity of a Natura 2000 site to proceed in cases where it has been established that no less damaging alternative solution exists. The extra protection measures for Annex I priority habitats come into effect when making the IROPI case. Compensatory measures must be proposed and assessed; these must be practical, implementable, likely to succeed, proportionate and enforceable, and they must be approved by the Minister.

As revealed later in this NIS, the AA process (undertaken in collaboration with DAFM), has successfully identified, assessed and mitigated all adverse effects to the extent that no negative impact on the integrity of the Natura 2000 sites will occur. It is therefore not necessary to proceed to Stage 4.

2.7 Results of the Screening Process

A Screening Statement, the main output of Stage 1 of the AA process, was produced in August 2020 and sent to NPWS for consultation. The conclusion of the screening process was that the AFS, both alone and in combination with other plans and programmes, could potentially have significant effects on Natura 2000 sites (in view of their conservation objectives) depending on where and how certain measures are implemented. As such, it was considered that a Stage 2 AA is required. The consultation response from NPWS is provided in Appendix A and has been taken into account in the Stage 2 AA.

2.8 Links with Strategic Environmental Assessment

There are clear links and analogies between AA of plans and SEA. They are parallel but separate processes that commonly overlap but also differ in some key respects. SEA is a systematic process for evaluating the environmental consequences of proposed plans or programmes to ensure environmental issues are fully integrated and addressed at the earliest appropriate stage of decision making, with a view to promoting sustainable development. The process of SEA was introduced under European Directive 2001/42/EC12 on the assessment of the effects of certain plans and programmes on the environment (SEA Directive), and came into force in 2001.

AA is narrower in focus and requires more rigorous tests, with the conservation and protection of Natura 2000 sites at its core. Nonetheless both SEA and AA contribute to the integration of environmental considerations in the adoption of a plan and promote sustainable development.

The three main inter-relationships between AA and SEA are:

- AA is a tool that assists in addressing environmental issues as part of the SEA in relation to Natura 2000 sites;
- AA assists the SEA process in the systematic and explicit appraisal of alternatives in relation to Natura 2000 sites; and
- Undertaking AA in parallel with SEA provides for an efficient use of resources and expertise. Both processes benefit each other's findings.

The AA has been carried out alongside the SEA of the Strategy.

3 NATURA 2000 SITES IN IRELAND

3.1 Ireland's Biodiversity – International Context

Ireland has a number of internationally important habitats representing 59 of those listed in Annex I of the Habitats Directive. Of these, 16 are deemed to be priority habitats at the national level, including limestone pavements, machair, turloughs and active peatlands. Peat bogs cover approximately 13.7% of land, the majority of which are located in the south-west, west and north of the country.

A range of mammal species occur across Ireland, including good populations of the Annex 2 (Habitats Directive) species otter (*Lutra lutra*) and pine marten (*Martes martes*). This latter is particularly prevalent in the Burren region (Clare). A large number of cetacean species are recorded off shore, with several whales and dolphins. Pinnipeds are represented by grey seal (*Halichoerus grypus*) and harbour seal (*Phoca vitulina*). Nine bat species occur in Ireland (all Annex 2 species), the majority of which are widespread. However, lesser horseshoe (*Rhinolophus hipposideros*) is confined to the west coast.

Invertebrate species, important in a European context, are the butterfly, marsh fritillary (*Euphydryas aurinia*), Kerry slug (*Geomalacus maculosus*), the whorl snails *Vertigo* species and freshwater pearl mussel (*Margaritifera margaritifera*).

Only a small number of plant species are protected under Annex 2. These include marsh saxifrage (*Saxifraga hirculus*) found in upland flushes near the west coast, floating water-plantain (*Luronium natans*) found in slow-flowing water and slender naiad (*Najas flexilis*), confined to base-enriched water. The country is relatively rich in algae, bryophytes and lichens, with the west coast being particularly important with respect to the last two groups. However, only two species of bryophyte – slender green feather-moss (*Hamatocaulis vernicosus*) and petalwort (*Petalophyllum ralfsii*) are included on Annex 2 and no species of lichen.

Ireland includes important breeding habitat for seabirds, and is particularly important for its breeding populations of manx shearwater (*Puffinus puffinus*) and storm petrel (*Hydrobates pelagicus*). Coastal areas provide important habitats for chough (*Pyrrhocorax pyrrhocorax*) (sea cliffs) and breeding dunlin (*Calidris alpina*) (machair). Small areas (largely islands) in the north-west and west are key areas for breeding corncrake (*Crex crex*). Ireland's wetlands are an important resource for over 50 species of overwintering migratory birds such as light-bellied brent goose (*Branta bernicla hrota*), black-tailed godwit (*Limosa limosa*), whooper swan (*Cygnus cygnus*), Greenland white-fronted goose (*Anser albifrons flavirostris*) and ringed plover (*Charadrius hiaticula*). Blanket bog and upland areas provide habitats for species such as merlin (*Falco columbarius*), dunlin and golden plover (*Pluvialis apricaria*). Agricultural areas also represent a share of the SPA network and upland agricultural areas provide habitat for hen harrier (*Circus cyaneus*) while the more intensively farmed coastal lowlands provide habitat for internationally important numbers of swans and geese (NPWS, 2020).

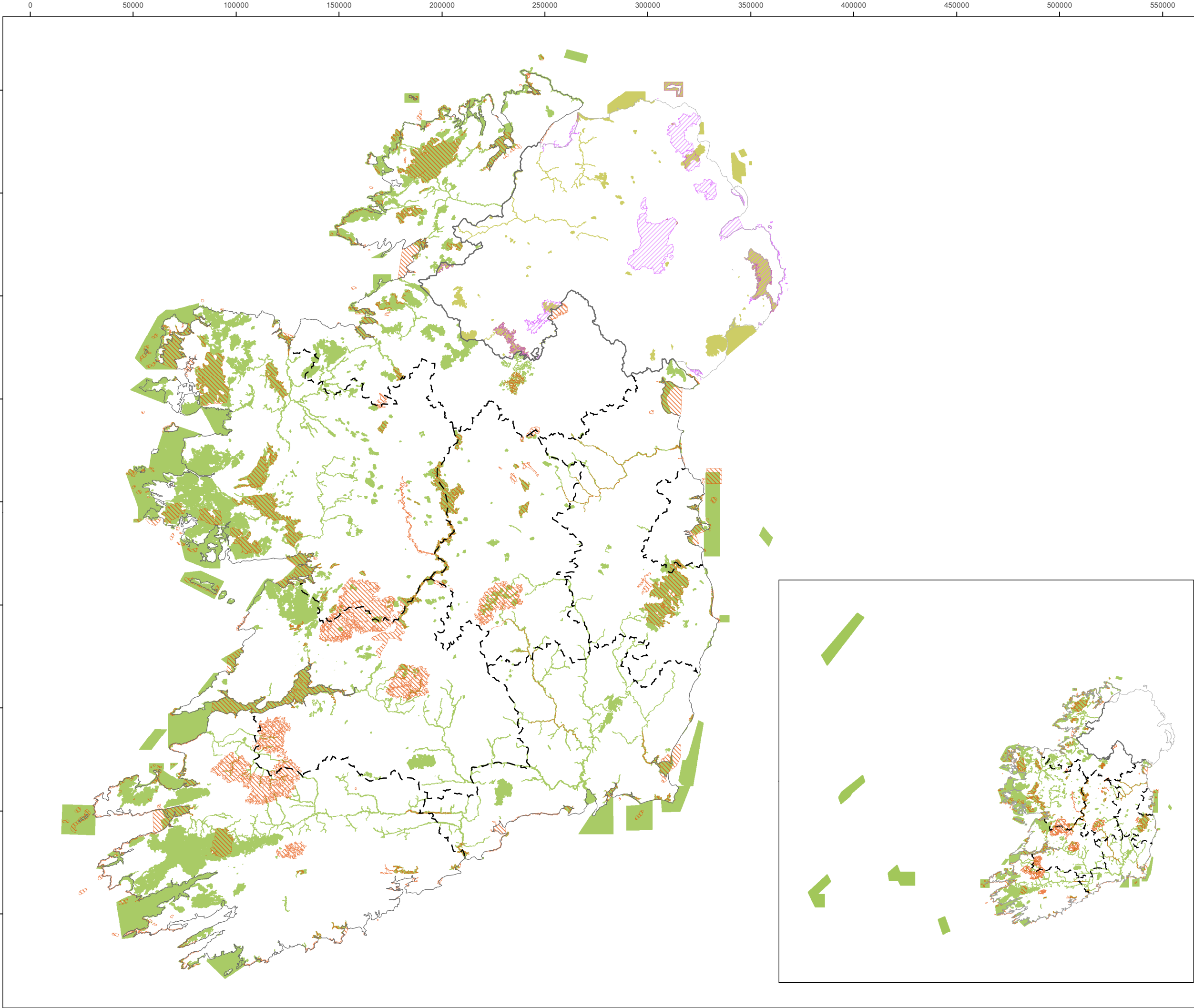
3.2 Nature Conservation Designations

There are a number of nature conservation designations in Ireland:

- SACs, including candidate SACs, are sites designated under the Habitats Directive, requiring the conservation of important, rare or threatened habitats and species (other than birds) across Europe.

- SPAs, including proposed SPAs, are sites designated under the Birds Directive to conserve certain migratory or rare birds and their habitats.
- Ramsar sites are Wetlands of International Importance, declared through the Ramsar Convention of 1971 to which Ireland is a signatory.
- Natural Heritage Areas (NHAs), including proposed NHAs, are an Irish designation, considered important for the habitats present or which hold species of plants and animals whose habitat needs protection at the national scale.
- Statutory nature reserves are areas of importance to wildlife, typically owned by the State and protected under Ministerial order.

Those sites designated as SACs and/or SPAs, collectively known as Natura 2000 sites, are the focus of this AA. As revealed in Ireland's National Biodiversity Action Plan 2017 - 2021, about 10% of the country is considered to be of prime importance for nature conservation; this comprises (in 2020) 439 SACs and 165 SPAs. Ireland's Natura 2000 sites are mapped in *Figure 2*. Six of the 439 SACs are offshore sites.



- Special Protection Areas
- Special Area of Conservation

Northern Ireland

- Special Protection Area
- Special Area of Conservation

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

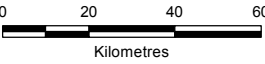


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Rev	Date	Description	Drm	Chk	App

Agri-food Strategy to 2030
SEA Scoping Report



TITLE: Figure 2:
Natura 2000 Sites
Map 1 of 1



SCALE:1:1,750,000 @ A3



REV 00

The number of Natura 2000 sites in each region of Ireland are provided in *Table 1* below (these are derived from GIS data; sites that cross regional boundaries are counted in each region in which they appear).

Table 1: Natura 2000 Sites in Ireland

	Special Areas of Conservation	Special Protection Areas
Border Region	76	39
Midland Region	47	19
Western Region	150	42
Dublin Region	13	10
Mid-East Region	33	11
Mid-West Region	67	14
South-East Region	29	15
South-West Region	53	29
Ireland Total*	433 plus 6 offshore sites	154

* The total number of sites may be less than the number of sites in each region added up, because some sites extend over more than one region.

Source: GIS datasets from NWPS.

It can be seen from *Table 1*, that the density of European sites (both SACs and SPAs) is far greater in the west of the country, and particularly in the counties of Galway, Donegal and Mayo. Here, Annex I habitats such as blanket bog, semi-natural grasslands and a range of water-dependent habitats are predominant in the SAC selection, alongside SPAs designated for seabirds, crough, breeding wildfowl and corncrake. In the east of the country, in Wicklow, Waterford, Carlow and south-east Ireland, Natura 2000 sites tend to be concentrated along the major river catchments and in coastal areas. In particular, a number of estuary sites are represented as SPAs (and often contiguous with SACs) in these coastal areas. Blanket bog and other upland habitat sites are particularly well represented in the border region, as well as in the west.

It is worth noting that the EC has recently decided to refer Ireland to the Court of Justice of the EU because Ireland failed to designate 154 out of 423 Sites of Community Importance (SCI) as SACs within the appropriate deadline as well as failing to establish site-specific conservation objectives for 87 sites and conservation measures for any of the 423 sites (EC, 2020).

In terms of CORINE land cover, the DAHG (2013) Prioritised Action Framework for Natura 2000 report reveals the following classification of Natura 2000 sites:

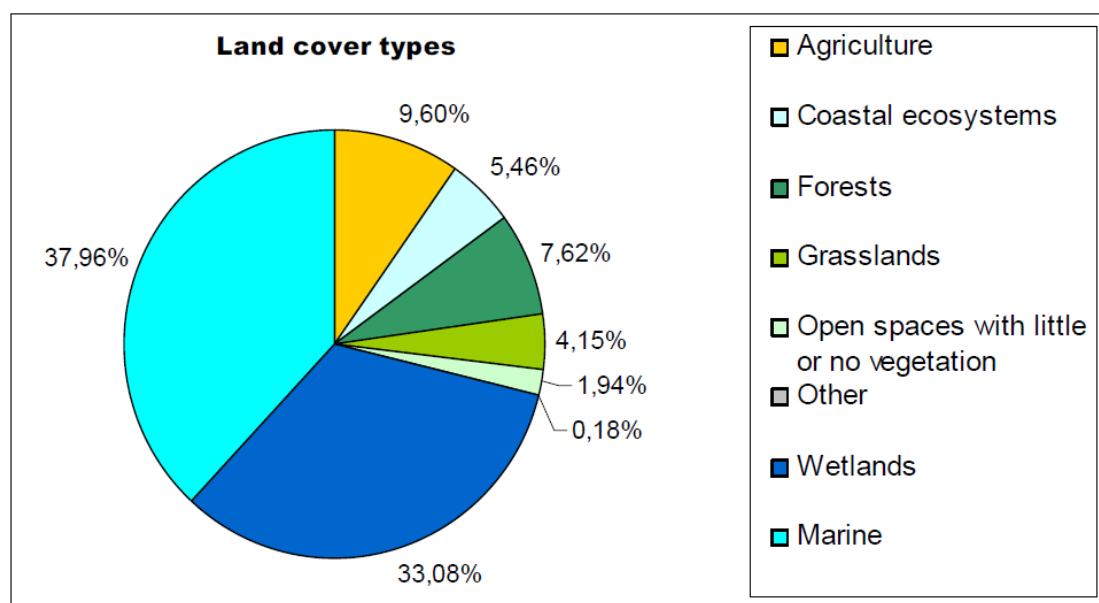


Figure 3: Natura 2000 sites in Ireland by Corine land cover type

Table 2 below shows the number of SACs in each county, categorised according to predominant habitat type. Note that many sites contain more than one habitat type within the site. Some sites cross county boundaries and are mentioned in all counties concerned. Again, it can be seen that there are greater numbers of SACs in the west of the country. In particular, there is a higher density of peatland sites in the west and north-west (Donegal, Mayo and Galway), though also good representation in Offaly and Roscommon. Limestone pavement is represented in Mayo, Galway and Clare. This last is particularly important for this SAC type (along with cave and quarry), as it includes the Burren, one of the largest areas of limestone pavement in the world. Turloughs and lakes are also found in greater concentrations in the west, with Galway having the highest numbers. Indeed, Galway contains examples of nearly all SAC habitat types in Ireland. Coastal sites are also well represented in the west, though Wexford has a high number (10) in the south-east. Both rivers and mountains are more evenly represented throughout the country. Woodland has a slightly higher representation in the south-west, with Cork supporting seven sites.

Table 2: Predominant Habitat Types of Ireland's SACs

	Peat-land	Mountain	Grass-land	Eskers	Machairs	Turloughs	Callows	Limestone Pavement	Cave/Quarry	Wood-land	Rivers	Estuaries	Lakes	Coastal	Total
Carlow		1									3				4
Cavan	1	3									1		1		6
Clare	3	1	1			2		2	13	2	2	1	4	3	34
Cork	2	3								7	4	1	2	10	29
Donegal	11	3				1				2	2		9	20	48
Dublin			1							1		2		6	10
Galway	8	3	1	1	3	14	1	2	3	5			12	10	63
Kerry	3	3							4	3	3	1	3	8	28
Kildare	3										2		1		6
Kilkenny	4					1			1		2				8
Laois	2	1	1	1							1				6
Leitrim		4			1								1		6
Limerick	2	3	1							3	2				11
Longford						1									1
Louth		1									2			3	5
Mayo	9	4			1	8		1	4	2	1		7	12	49
Meath	1										3		1		5
Monaghan													1		1
Offaly	8	1		4			1			1	1		1		17
Roscommon	7		1	1		6	1						4		20
Sligo	3	2			1	1				1	1	1	2	4	16
Tipperary	3	6	2				1			1	5				18
Waterford		1								3	3			4	11
Westmeath	3			1			1				1		5		11
Wexford		2	1								2		2	10	17
Wicklow	2	1								5	2			5	15
Total	75	43	9	8	6	34	5	5	25	36	43	6	56	95	445

3.3 Qualifying Features of Natura 2000 Sites

An AA should focus exclusively on the qualifying interests of the Natura site affected (i.e. the reasons for which the site was designated) and must consider any impacts on the conservation objectives of the site. Qualifying features of interest for SACs include internationally important habitats listed on Annex I of the Habitats Directive (including priority types which are in danger of disappearance), and internationally important species, as listed on Annex II. For SPAs, qualifying features are those bird species listed on Annex I of the Birds Directive.

3.3.1 Special Areas of Conservation

The conservation objectives for SACs are determined under Article 4 of the Habitats Directive and are intended to ensure that the Annex I habitats and/or Annex II species present onsite (the qualifying interests) are maintained in a favourable condition. The conservation objectives for SPAs are determined from the conservation interests of these sites.

Ireland has a significant number of internationally important habitats totalling 58 of those listed in Annex I of the Habitats Directive. Of these, 16 are deemed to be priority habitats at the national level. Those priority habitats of most relevance to agricultural activities on land include dunes, orchid-rich grasslands, machair, turloughs, active peatlands, calcareous fens and coastal lagoons. In-shore water habitats are highly relevant to aquaculture activities and other in-shore fishing. Of these, coastal lagoons are listed as a priority habitat.

In addition to priority habitats, a much greater range of Annex 1 habitats are linked to agricultural activities. These would include all habitats that are subject to grazing (e.g. grasslands, heathlands, peatlands, machair, saltmarsh). They would also include all freshwater-dependent habitats (e.g. oligotrophic, mesotrophic and eutrophic waters). The majority of in-shore habitats, such as reefs, large shallow inlets and bays and estuaries, also clearly have links with aquaculture and other in-shore fishing. Further details on the Annex I habitats present in Ireland are provided in *Table 3*. This shows the importance of the country for peatlands (both acidic bogs and calcareous fens), heaths, grasslands as orchid-rich sites, freshwater habitats (in particular, turloughs), fixed coastal dunes, machair and coastal lagoons. These are all designated as Priority Habitats.

Sixty-eight Irish species (of which eight are vagrants) must be afforded protection through Annex II of the Habitats Directive. The species of most relevance to agricultural activities include slender naiad (aquatic plant), Geyer's whorl snail, marsh fritillary (butterfly), Atlantic salmon, pollan (fish), lesser horseshoe, otter and freshwater pearl mussel. A small number of species have links with both on-shore and off-shore agricultural activities. These are principally fish (e.g. salmon and twaite shad). Further offshore, fishing activities have links with a wide range of cetacean species, including several whales and dolphins (for example, SACs have been established for bottlenose dolphin (*Tursiops truncatus*) and harbour porpoise (*Phocoena phocoena*)). Further details are provided in *Table 4*.

Table 3: Annex I Habitats in Ireland

EU Habitat Code	EU Habitat Name	Classed as a priority habitat in Ireland	Overall status of habitat in Ireland	Number of SACs for which this is a qualifying feature
Grasslands				
6130	Calaminarian grasslands of the <i>Violetalia calaminariae</i>	No	Inadequate	3
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>)(*important orchid sites)	Yes	Bad	33
6230	Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)	Yes	Bad	9
6410	<i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)	No	Bad	14
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	No	Bad	3
6510	Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)	No	Bad	10
Peatlands				
7110	Active raised bogs	Yes	Bad	51
7120	Degraded raised bogs still capable of natural regeneration	No	Bad	53
7130	Blanket bog (*active only)	Yes	Bad	50
7140	Transition mires and quaking bogs	No	Bad	16
7150	Depressions on peat substrates of the <i>Rhynchosporion</i>	No	Bad	63
7210	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	Yes	Inadequate	17
7220	Petrifying springs with tufa formation (<i>Cratoneurion</i>)	Yes	Inadequate	19
Heath and scrub				
4010	Northern Atlantic wet heaths with <i>Erica tetralix</i>	No	Bad	39
4030	European dry heaths	No	Bad	48
4060	Alpine and Boreal heaths	No	Bad	33
Rocky habitats				
8110	Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>)	No	Inadequate	3
8120	Calcareous and calcschist screes of the montane to alpine levels (<i>Thlaspietalia rotundifoliae</i>)	No	Inadequate	3
8210	Calcareous rocky slopes with chasmophytic vegetation	No	Inadequate	12

EU Habitat Code	EU Habitat Name	Classed as a priority habitat in Ireland	Overall status of habitat in Ireland	Number of SACs for which this is a qualifying feature
8220	Siliceous rocky slopes with chasmophytic vegetation	No	Inadequate	15
8240	Limestone pavements	Yes	Inadequate	23
8310	Caves not open to the public	No	Favourable	9
8330	Submerged or partly submerged sea caves	No	Favourable	10
Sclerophilus scrub				
5130	<i>Juniperus communis</i> formations on heaths or calcareous grasslands	No	Favourable	22
Freshwater habitats				
3110	Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>)	No	Inadequate	32
3130	Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>	No	Bad	9
3140	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.	No	Bad	18
3150	Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> -type vegetation	No	Inadequate	9
3160	Natural dystrophic lakes and ponds	No	Inadequate	10
3180	Turloughs	Yes	Inadequate	45
3260	Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation	No	Inadequate	21
3270	Rivers with muddy banks with <i>Chenopodion rubri</i> p.p. and <i>Bidention</i> p.p. vegetation	No	Favourable	1
Dunes				
2110	Embryonic shifting dunes	No	Inadequate	33
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	No	Inadequate	46
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)	Yes	Bad	43
2140	Decalcified fixed dunes with <i>Empetrum nigrum</i>	Yes	Favourable	5
2150	Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)	Yes	Inadequate	11
2170	Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salix arenariae</i>)	No	Inadequate	11
2190	Humid dune slacks	No	Inadequate	15
21a0	Machairs (* in Ireland)	Yes	Inadequate	19
Forests				
91A0	Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in British Isles	No	Bad	40

EU Habitat Code	EU Habitat Name	Classed as a priority habitat in Ireland	Overall status of habitat in Ireland	Number of SACs for which this is a qualifying feature
91D0	Bog woodland	Yes	Favourable	11
91e0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)	Yes	Bad	25
91J0	<i>Taxus baccata</i> woods of the British Isles	Yes	Bad	5
Coastal habitats				
1110	Sandbanks which are slightly covered by sea water all the time	No	Favourable	2
1130	Estuaries	No	Inadequate	19
1140	Mudflats and sandflats not covered by seawater at low tide	No	Inadequate	42
1150	Coastal lagoons	Yes	Bad	25
1160	Large shallow inlets and bays	No	Bad	22
1170	Reefs	No	Inadequate	41
1210	Annual vegetation of drift lines	No	Inadequate	24
1220	Perennial vegetation of stony banks	No	Inadequate	36
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts	No	Inadequate	28
1310	<i>Salicornia</i> and other annuals colonizing mud and sand	No	Favourable	23
1330	Atlantic salt meadows (<i>Glaucio-Puccinellietalia maritima</i>)	No	Inadequate	38
1410	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	No	Inadequate	33
1420	Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)	No	Bad	2

Table 4: Annex II Species in Ireland

EU Species Code	EU Species Name	Classed as a priority species in Ireland	Overall condition of species in Ireland	Number of SACs for which this is a qualifying feature
Invertebrates				
1013	Geyer's whorl snail (<i>Vertigo geyeri</i>)	No	Bad	14
1014	Narrow-mouthed whorl snail (<i>Vertigo angustior</i>)	No	Inadequate	13
1016	Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>)	No	Inadequate	7
1024	Kerry slug (<i>Geomalacus maculosus</i>)	No	Favourable	7
1029	Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	No	Bad	19
1065	Marsh Fritillary (<i>Euphydryas aurinia</i>)	No	Inadequate	14
1092	White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	No	Bad	15
Fish				
1095	Sea Lamprey (<i>Petromyzon marinus</i>)	No	Bad	12
1096	Brook Lamprey (<i>Lampetra planeri</i>)	No	Favourable	10
1099	River Lamprey (<i>Lampetra fluviatilis</i>)	No	Unknown	10
1103	Twaite shad (<i>Alosa fallax</i>)	No	Bad	5
5076	Pollan (<i>Coregonus autumnalis</i>)	No	Bad	3
1106	Atlantic Salmon (<i>Salmo salar</i>)	No	Inadequate	26
5046	Killarney Shad (<i>Alosa killarnensis</i>)	No	Favourable	0
Amphibians				
6284	Natterjack Toad (<i>Epidalea calamita</i>)	No	Bad	0
1213	Common Frog (<i>Rana temporaria</i>)	No	Favourable	0
1223	Leatherback Turtle (<i>Dermochelys coriacea</i>)	No	Unknown	0
Mammals				
1303	Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	No	Inadequate	41
1309	Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)	No	Favourable	0
5009	Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	No	Favourable	0
1317	Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>)	No	Unknown	0

EU Species Code	EU Species Name	Classed as a priority species in Ireland	Overall condition of species in Ireland	Number of SACs for which this is a qualifying feature
1322	Natterer's Bat (<i>Myotis nattereri</i>)	No	Favourable	0
1314	Daubenton's Bat (<i>Myotis daubentonii</i>)	No	Favourable	0
1330	Whiskered Bat (<i>Myotis mystacinus</i>)	No	Favourable	0
1326	Brown Long-eared Bat (<i>Plecotus auritus</i>)	No	Favourable	0
1331	Leisler's Bat (<i>Nyctalus leisleri</i>)	No	Favourable	0
1334	Mountain Hare (<i>Lepidus timidus hibernicus</i>)	No	Favourable	0
1351	Harbour porpoise (<i>Phocaena phocaena</i>)	No	Favourable	2
1355	Otter (<i>Lutra lutra</i>)	No	Favourable	45
1357	Pine Marten (<i>Martes martes</i>)	No	Favourable	0
1364	Grey seal (<i>Halichoerus gyrfus</i>)	No	Favourable	10
1365	Harbour seal (<i>Phoca vitulina</i>)	No	Favourable	13
1345	Humpback Whale (<i>Megaptera novaengliae</i>)	No	Unknown	0
1349	Bottlenose Dolphin (<i>Tursiops truncatus</i>)	No	Favourable	0
1350	Short-beaked Common Dolphin (<i>Delphinus Delphi</i>)	No	Favourable	0
1351	Harbour Porpoise (<i>Phocoena phocoena</i>)	No	Favourable	0
2027	Killer Whale (<i>Orcina orca</i>)	No	Unknown	0
2029	Long-finned Pilot Whale (<i>Globicephala melas</i>)	No	Favourable	0
2030	Risso's Dolphin (<i>Grampus griseus</i>)	No	Favourable	0
2031	Atlantic White-sided Dolphin (<i>Lagenorhynchus acutus</i>)	No	Favourable	0
2032	White-beaked Dolphin (<i>Lagenorhynchus albirostris</i>)	No	Favourable	0
2034	Striped Dolphin (<i>Stenella coeruleoalba</i>)	No	Favourable	0
2035	Cuvier's Beaked Whale (<i>Ziphius cavirostris</i>)	No	Favourable	0
2038	Sowerby's Beaked Whale (<i>Mesoplodon bidens</i>)	No	Favourable	0
2618	Minke Whale (<i>Balaenoptera acutorostrata</i>)	No	Favourable	0
2621	Fin Whale (<i>Balaenoptera physalus</i>)	No	Favourable	0
5020	Blue Whale (<i>Balaenoptera musculus</i>)	No	Unknown	0
2624	Sperm Whale (<i>Physeter microcephalus</i>)	No	Favourable	0

EU Species Code	EU Species Name	Classed as a priority species in Ireland	Overall condition of species in Ireland	Number of SACs for which this is a qualifying feature
5033	Northern Bottlenose Whale (<i>Hyperoodon ampullatus</i>)	No	Unknown	0
2619	Sei Whale (<i>Balaenoptera borealis</i>)	No	Unknown	0
Plants				
1393	Slender green feather-moss (<i>Hamatocaulis vernicosus</i>)	No	Favourable	8
1395	Petalwort (<i>Petallophyllum ralfsii</i>)	No	Favourable	20
1421	Killarney fern (<i>Trichomanes speciosum</i>)	No	Favourable	18
1528	Marsh saxifrage (<i>Saxifraga hirculus</i>)	No	Favourable	5
1400	White cushion moss (<i>Leucobryum glaucum</i>)	No	Favourable	0
1409	Sphagnum species	No	Inadequate	0
1413	Lycopodium group	No	Inadequate	0
1378	Cladonia subgenus Cladina	No	Inadequate	0
1376	Maërl	No	Bad	0
1833	Slender naiad (<i>Najas flexilis</i>)	No	Inadequate	24

3.3.2 Special Protection Areas

Over 60% of the 31 bird species protected through the Birds Directive that now occur in Ireland on a regular basis belong to the breeding seabird and wintering water bird groups. This has in part led to the situation that the majority (> 80%) of Ireland's SPAs are designated for these two bird groups. These include a series of offshore islands for seabirds, particularly off the west coast. A small number of offshore islands are designated for tern species (particularly off the east coast). Wintering waterbird SPAs are largely estuary sites, represented in the east of the country, with further examples in the south west and north west. A small number of loughs are designated for species of breeding wildfowl, for example common scoter (*Melanitta nigra*) and pochard (*Aythya ferina*). Other species listed on Annex I of the Birds Directive for which SPAs have been designated in Ireland include chough, peregrine (*Falco peregrinus*), hen harrier, corncrake, kingfisher (*Alcedo atthis*), merlin, golden plover and dunlin (see Table 5 for more information). The majority of these have been designated on the west coast (in particular, chough and corncrake).

The bird species of most relevance to agricultural activities in Ireland include whooper swan (*Cygnus cygnus*), Bewick's swan (*Cygnus columbianus bewickii*), Greenland white-fronted goose, chough, corncrake, hen harrier and wader and wildfowl species (e.g. golden plover, dunlin, curlew, common scoter, pochard). Terns (*Sterna* species) are more intimately connected with in-shore activities, including aquaculture. The majority of seabirds (for example, manx shearwater, storm petrel, guillemot (*Uria aalge*), razorbill (*Alca torda*), puffin (*Fratercula arctica*) and black guillemot (*Cephus grille*) are largely dependent on off-shore waters in the winter period and around islands and sea cliffs in the summer. In general, they are thus more closely linked to fishing activities within the 200 nautical mile limit.

It should also be borne in mind that the majority of Annex I bird species are highly mobile and are likely to occupy different habitats at different stages of the year. For example, hen harrier largely breed on upland heather moorland and tend to winter in estuarine and reedbed habitats. Furthermore, this species, in keeping with a large number of others, are likely to be present within SPAs for part of the time and outside these at other times (e.g. when hunting or foraging for food). A number of species are only present at particular times of year (e.g. certain waders and wildfowl are only present in the winter whereas corncrake are summer visitors). The legislation makes it clear that Annex I bird species are fully protected within and outside SPAs, and thus any assessment of plans and policies must include consideration of the species' wider use of the countryside, outside designated sites.

Table 5: Annex I Bird Species in Ireland

EU Species Code	EU Species Name	Classed as a priority species in Ireland	Conservation status in Ireland	Residential status in Ireland	Number of SPAs for which this is a qualifying feature
Divers and Grebes					
A001	Red-throated Diver (<i>Gavia stellata</i>)	Yes	Amber	Wintering	5
A002	Black-throated Diver (<i>Gavia arctica</i>)	No	Amber	Wintering	0
A003	Great Northern Diver (<i>Gavia immer</i>)	No	Amber	Wintering	4
Seabirds					
A014	Storm Petrel (<i>Hydrobates pelagicus</i>)	Yes	Amber	Breeding	11
A015	Leach's Petrel (<i>Oceanodroma leucorhoa</i>)	Yes	Red	Breeding	1
Waterfowl					
A037	Bewick's Swan (<i>Cygnus columbianus bewickii</i>)	No	Red	Wintering	3
A038	Whooper Swan (<i>Cygnus Cygnus</i>)	Yes	Amber	Wintering	22
A395	Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Yes	Amber	Wintering	21
A396	Barnacle Goose (<i>Branta leucopsis</i>)	Yes	Amber	Wintering	22
A059	Pochard (<i>Aythya farina</i>)	No	Red	Wintering	0
A065	Common Scoter (<i>Melanitta nigra</i>)	No	Red	Breeding	13
A067	Goldeneye (<i>Bucephala clangula</i>)	No	Red	Wintering	0
Birds of Prey					
A082	Hen Harrier (<i>Circus cyaneus</i>)	Yes	Amber	Breeding	8
A098	Merlin (<i>Falco columbarius</i>)	Yes	Amber	Breeding	6
A103	Peregrine (<i>Falco peregrinus</i>)	No	Green	Breeding	10
Crakes and Rails					
A122	Corncrake (<i>Crex crex</i>)	Yes	Red	Breeding	10
Waders					
A140	Golden Plover (<i>Pluvialis apricaria</i>)	Yes	Red	Wintering	36
A160	Curlew (<i>Numenius arquata</i>)	No	Red		0

EU Species Code	EU Species Name	Classed as a priority species in Ireland	Conservation status in Ireland	Residential status in Ireland	Number of SPAs for which this is a qualifying feature
A466	Dunlin (<i>Calidris alpina schinzii</i>)	Yes	Red	Breeding	6
A170	Red-necked (Phalarope <i>Phalaropus</i>)	No	Red	Breeding	0
Gulls, Terns and Skuas					
A176	Mediterranean Gull (<i>Larus melanocephalus</i>)	No	Amber	Breeding	0
A177	Little Gull (<i>Larus minutus</i>)	No	Amber	Passage	0
A191	Sandwich Tern (<i>Sterna sandvicensis</i>)	Yes	Amber	Breeding	9
A192	Roseate Tern (<i>Sterna dougallii</i>)	Yes	Amber	Breeding	4
A193	Common Tern (<i>Sterna hirundo</i>)	Yes	Amber	Breeding	13
A194	Arctic Tern (<i>Sterna paradisaea</i>)	Yes	Amber	Breeding	16
A195	Little Tern (<i>Sterna albifrons</i>)	Yes	Amber	Breeding	8
Passerines					
A224	Nightjar (<i>Caprimulgus europaeus</i>)	No	Red	Breeding	0
A229	Kingfisher (<i>Alcedo atthis</i>)	No	Amber	Breeding	2
A282	Ring ouzel (<i>Turdus torquatus</i>)	No	Red	Breeding	0
A346	Chough (<i>Pyrrhocorax pyrrhocorax</i>)	Yes	Amber	Breeding	18

3.3.3 Transboundary Considerations

As Ireland shares a boundary with Northern Ireland, there is potential for agriculture to affect biodiversity and nature conservation in Northern Ireland, in particular designated Natura 2000 sites near the border or with hydrological connections and mobile species such as birds and bats. It should be noted that, due to the UK's recent withdrawal from the EU, Natura 2000 sites within Northern Ireland (and the rest of the UK) are now termed the 'National Site Network'.

Northern Ireland has a large area of land of nature conservation value, including 17 SPAs and 57 SACs. Some of the designated sites are located on the border with Ireland, including 10 SACs and 4 SPAs. A high proportion of the National Site Network sites are in poor condition (Northern Ireland Environment Agency (NIEA) and DAERA, 2020).

Northern Ireland's State of the Environment Report (NIEA, 2013) determined that despite increased action to halt biodiversity loss, there has been a steady decline. There has been an overall decline in priority habitats, in particular grasslands, as well as a decline in priority species such as breeding waders. The key pressures on biodiversity were found to be land-use change, particularly agriculture and development, pollution, invasive species and fisheries practices. While the Northern Ireland Breeding Bird Survey suggested an average increase in common bird species between 1994 and 2018, there has been a decrease in wetland bird species (NIEA and DAERA, 2020).

3.4 Overview of Conservation Status

According to the *Interim Review of the Implementation of the National Biodiversity Action Plan 2017-2021* (Biodiversity Working Group, 2020), the conservation status of 85% of EU protected habitats in Ireland is unfavourable, while 46% are demonstrating ongoing declines in conservation status with peatlands, grasslands and some marine habitats a particular concern. For comparison, the overall proportion of protected habitats with an unfavourable conservation status in EU is 72%, showing that Ireland has a higher proportion in unfavourable status than the EU average (European Court of Auditors, 2020).

There are 68 Habitats Directive-listed species in Ireland, of which 8 are described as vagrants. Of the remaining 60 species, 57% are in favourable condition and 30% are in unfavourable condition. While 72% demonstrate stable or improving trends, 15% demonstrate a trend of ongoing decline. Population increases and range expansion have been observed for several bat species, marsh fritillary, otter and pine marten, however ongoing declines are reported for all whorl snails, freshwater pearl mussel and lesser horseshoe bat (Department of Culture, Heritage and the Gaeltacht (DCHG), 2019).

3.5 Relevant Natura 2000 Sites

In line with the former DEHLG Guidelines (2009), the following sites were screened in as relevant:

- i) Any Natura 2000 sites within or adjacent to the plan or project area.
- ii) Any Natura 2000 sites within the likely zone of impact of the plan or project. A distance of 15 km is currently recommended in the case of plans, and derives from UK guidance (Scott Wilson et. al., 2006).
- iii) Natura 2000 sites that are more than 15 km from the plan or project area depending on the likely impacts of the plan or project, and the sensitivities of the ecological receptors, bearing in mind the precautionary principle. In the case of sites with water dependent habitats or species, and a plan or project that could affect water quality or

quantity, for example, it may be necessary to consider the full extent of the upstream and/or downstream catchment.

The AFS applies to the whole territory of Ireland; agricultural land encompasses much of the country, and fishing includes Ireland's EEZ, which extends to a 200 mile nautical limit. The missions, goals and actions are therefore applicable to farmers, other land-owners and fisheries (including aquaculture). It is therefore not possible to screen out any Natura 2000 sites on a geographical basis. It should also be noted that it is not feasible nor desirable to assess individual Natura 2000 sites at a national scale.

Agricultural, forestry and fisheries activities have the potential to detrimentally affect a wide range of habitats and species through a number of different pathways. Section 3.5.1 discusses the main potential sources of impact. Much of the information in this section has been obtained from the Status of EU Protected Habitats and Species in Ireland reports (NPWS, 2019a, b, c).

3.5.1 Potential Impacts on Natura 2000 Sites from Agriculture

It is not the place of this NIS to identify impacts on specific Natura sites, rather to identify impact pathways and to discuss their relevance to site 'types'. For example, diffuse pollution is likely to have detrimental impacts on a range of water-dependent Natura habitats and species. Impacts are therefore discussed at the 'strategic level' in relation to a range of similar sites, and are not broken down to individual site level (as would be appropriate at project level Appropriate Assessment).

Habitats

Agriculture (and to a lesser extent forestry) has been identified as a key contributor to the declines in conservation status described in 3.4. *The Status of EU Protected Habitats and Species in Ireland* (DCHG, 2019) reports that over 70% of habitats are being impacted by agricultural practices, including:

- Inappropriate grazing regimes (over or undergrazing);
- Land abandonment (abandonment of grassland management);
- Activities generating diffuse pollution to surface and groundwaters;
- Activities generating air pollution; and
- Agricultural activities generating marine pollution.

In addition, agricultural practices such as inappropriate drainage and inappropriate herbicide and pesticide use are also contributing to the deterioration of habitats.

Blanket bog, alpine heath and wet heath were cited as being particularly vulnerable to air pollution from nitrogen. Certain forestry practices (e.g. clear-felling) have also been implicated in the decline of some aquatic species such as freshwater pearl mussel (*Margaritifera margaritifera*).

The above assessment is in line with the findings of NPWS (2019a, b) who identified pressures and threats facing 54 of 59 habitats assessed. Of these, the most frequent pressures were found in the agriculture category.

A feature of the distribution of protected sites in Ireland is such that the burden for their protection falls unequally on different agricultural sectors, with upland and marginal farmers, where farming is often less profitable, having the greatest responsibility for implementation of habitat and species conservation and climate change mitigation. This situation has been exacerbated by a north-west – south-east divide in terms of Common Agricultural Policy benefits.

In line with global trends, coastal and marine biodiversity is coming under pressure from human activities including nutrient and chemical discharge and through direct physical disturbance and habitat degradation from pollution, litter, man-made noise and light. These pressures are mainly in transitional and coastal waters. Fishing impacts on both pelagic (i.e., water column) and seabed communities, particularly for species with low growth rates, soft substrates or cold water coral reefs, and some areas have been heavily impacted by this activity. There are also concerns about the level of by-catch of birds and marine mammals in certain fisheries (DCHG, 2017).

There are concerns that as a result of the UK's withdrawal from the EU, along with potential future increased restrictions on access to UK waters and restrictions on direct landings of certain fishery products such as live bivalve molluscs to UK ports, this may result in displacement of vessels to Irish waters, resulting in additional pressure on fish stocks and general marine biodiversity (DAFM, 2020).

Climate change is also expected to have an increasingly negative impact on habitats, particularly coastal and upland habitats, and various species as well as increasing ocean acidification. The rise in temperatures, changes in precipitation patterns, weather extremes (storms and flooding, sea surges, flash floods) and sea-level rise is predicted to affect the abundance and distribution of some Irish species. Degraded upland habitats are likely to become less resilient to the impacts of climate change (DCHG, 2017). Climate change is also predicted to result in increased spread of invasive species, affecting terrestrial, freshwater and marine ecosystems (DCHG, 2019). There is a clear link between certain agricultural practices and Greenhouse Gases (e.g. methane production from cattle herds and nitrous oxides from fertilisers).

The wide ranging potential ramifications of agricultural practices is reflected in the number of habitats and species included in Table 6. It can be seen that the Table includes the majority of Annex habitats and species represented by the Natura 2000 series in Ireland.

Species

In general, current pressures on Annex species appear to be less severe. Of 60 species assessed by NPWS (2019a, c), 57% were found to be in favourable status with 30% in unfavourable (inadequate or bad) status. 72% of species showed stable or improving trends whereas 15% showed declining trends. Many species remain in favourable status, with population increases and range expansions for several bat species, otter, pine marten and the majority of cetaceans. Species rated as inadequate or bad include marsh fritillary (though this species has shown population increases), the whorl snails, freshwater pearl mussel and lesser horseshoe.

Impacts from agricultural activities (and to a lesser extent, forestry) can have an effect on a wide range of species – fish, molluscs, terrestrial mammals and vascular plants. This is partly due to the wide sphere of influence of some agricultural activities. For example, point sources of pollution from agriculture may influence a much wider area through groundwater supplies or nearby watercourses. Certain forestry practices (e.g. clear-felling) have also been implicated in the decline of some aquatic species such as the freshwater pearl mussel (*Margaritifera margaritifera*).

The recent European Court of Auditors report on *Biodiversity on Farmland* (2020), identified that populations of birds and grassland butterflies, which are good indicators of change in farmland biodiversity, have declined in Europe by more than 30% since 1990. The report concluded that the effect of CAP direct payments on farmland biodiversity is limited and that agricultural intensification remains one of the main causes of biodiversity loss and ecosystem degradation.

There are a number of pressures and threats on different bird groups including:

- Terrestrial birds - agriculture and forestry (changes to grazing and grassland management and use of pesticides), development and climate change (Lewis et al., 2019);
- Wintering waterbirds - climate change, energy production (e.g. wind farms), hunting, recreational and other disturbance, shellfish harvesting and aquaculture, as well as afforestation, bycatch, and mixed source water pollution/eutrophication (Lewis et al., 2019); and,
- Seabirds - offshore wind energy developments, climate change, the fishing industry via overfishing or by way of incidental seabird bycatch, mammalian predation, recreational disturbance and plastic waste (Cummins et al. 2019).

Grazing and drainage are the two issues that have most effect on terrestrial SPA bird species. For example, both under and overgrazing can have detrimental impacts on species such as hen harrier and merlin. Excessive grazing and/or inappropriate cutting times will have negative impacts for corncrake. Drainage is particularly detrimental to breeding waders such as curlew, golden plover and dunlin. In addition, eutrophication of water bodies is a key issue for duck species such as pochard, common scoter and goldeneye.

Invasive and non-native species are increasing and species such as the zebra mussel (*Dreissena polymorpha*), grey squirrel (*Sciurus carolinensis*) and Pacific oyster (*Magallana gigas*), may displace native species and considerably alter biodiversity, and subsequently, ecosystem processes and services. While to date the majority of invasive species have been plants (including hottentot fig (*Carpobrotus edulis*), giant rhubarb (*Gunnera tinctoria*), and giant hogweed (*Heracleum mantegazzianum*)), in the future invertebrates and vertebrate species may increase (DCHG, 2017). Invasive species are having a greater impact on freshwater and marine species (Biodiversity Working Group, 2020). The direct annual cost of invasive species to Ireland's economy was estimated in 2013 to be over €200 million, but may be higher with the increasing trend of invasive species (DCHG, 2017).

Table 6 includes those Annex I bird species assessed as being at threat from agricultural and inshore fishing activities. As with Annex I habitats and Annex II species, apart from a few exceptions, the majority of Ireland's Natura 2000 bird species are included.

More detail on potential effects are described in the following sections.

Agricultural Intensification

The term 'agricultural intensification' as used here encompasses grazing issues and increased fertiliser use. Grazing issues can be subdivided into overgrazing and undergrazing. In terms of SAC habitats, grazing issues will have disproportionate effects on grasslands, heath, mires and some dune systems. Almost all Annex I habitats within these categories have been rated as 'bad' in the latest NPWS assessment (2019a, b). A number of habitats have been especially prone to overgrazing issues (e.g. orchid-rich calcareous grassland, species-rich *Nardus* grasslands, blanket bog, raised bogs, limestone pavement). Overgrazing by sheep is a particular issue. For other habitats, in recent years, agricultural extensification in the form of under-grazing and abandonment have become more important detrimental factors. These include *Molinia* meadows, fens, limestone pavement and heath. Saltmarshes can be prone to both inappropriate grazing regimes as well as land reclamation schemes (conversion to improved grassland).

Grazing issues can also have negative impacts on a range of species. Overgrazing is an important factor in the decline of whorl snail species whereas under-grazing is an issue for marsh fritillary (associated with *Molinia* meadows). Appropriate grazing levels are also key in providing suitable structural vegetation conditions for a range of breeding birds. These

include chough, hen harrier, merlin and breeding waders. Undergrazing related to land abandonment is recognised as an increasing concern in more remote parts of the west of the country. This could lead to a greater homogenisation of Annex habitats, as well as unwanted scrub encroachment. Conversely, it is also possible that a period of land abandonment could lead to biodiversity gains on previously overgrazed habitat (particularly grasslands, heath and peatlands).

Problems associated with inappropriate grazing levels are often compounded by increases in fertiliser use. Thus, already stressed habitats are prone to further degradation under heavy and continued fertiliser use. This is particularly applicable to grasslands.

For example, the decline of lowland hay meadows is partly attributable to the application of fertilisers and their subsequent conversion to more improved grasslands. Persistent use of fertilisers will lead to a reduction in diversity, favouring a small suite of species suited to nutrient-rich conditions (e.g. perennial ryegrass (*Lolium perenne*) and white clover (*Trifolium repens*)). Fertiliser use will also have detrimental impacts on a range of other habitats such as bogs and fens. The application of nitrogen and phosphorus are especially problematic (see diffuse pollution below).

Intensification of grasslands through grazing and increased fertiliser use has also had negative impacts on a number of species. For example, range increases in lesser horseshoe populations have been curtailed by a lack of suitable foraging habitat. Conversion and intensification of small areas of habitat have negatively impacted on corncrake numbers, and those of other traditional farmland bird species.

Atmospheric Factors

Nitrogen, in the form of ammonia, associated with intensive pig and poultry farming, is a key concern with respect to low nutrient habitats such as blanket bog, wet and dry heath. Deposition of nitrogen on these habitats can cause increasing vegetation homogenisation and species impoverishment. Dairy and beef production also produce high levels of ammonia emissions. This is particularly relevant to the south and south-east of the country, where ammonia emissions from cattle are highest.

Agricultural activities have been identified as a major contributor to increased levels of GHG. These include nitrous oxide emissions from soils, fertilisers and manure from grazing animals. Cattle are also a significant source of methane, recognised as one of the most important GHG and resultant climate change. Whilst the effects of climate change on species and habitats are to a certain extent speculative, the following impacts have all been cited as possible under different scenarios:

- Shift in species further north and to higher altitudes;
- Phenological mis-matches (e.g. between migrant birds and availability of prey such as caterpillars);
- Changes to plant community composition (i.e. alterations in habitats);
- Particular vulnerability of certain habitats due to altitude e.g. montane;
- Increased risk of spread of non-native and invasive species;
- Increased risk of wildfires;
- Lack of frosts coupled with occasional unseasonal heavy frosts leading to effects on bud dormancy;
- Increased risk of flooding leading to erosional effects (e.g. blanket bog), impacts on habitats suited to intermittently high water tables (e.g. lowland fen sites) and increased concentrations of nutrients such as nitrogen.

Potential effects may be exacerbated through factors such as the poor dispersal ability of some plant (and other) species. Furthermore, habitats that are already in sub-optimal

condition (e.g. through inappropriate grazing) are likely to be especially vulnerable to climate change impacts. Increased intensity and frequency of flooding can also have detrimental ramifications for Annex species. For example, the repeated flooding of the Shannon Callows is thought to be implicated in the loss of corncrake from this area. Flooding could also have detrimental impacts on ground-nesting species such as hen harrier and merlin (drowning of chicks and eggs).

Diffuse Pollution of Surface Water and Groundwater

In addition to intensification impacts on the immediate surrounding habitat, fertiliser applications of nitrogen and phosphorus can cause diffuse pollution of surface water and groundwater. In recent years, there have been significant increases in nutrient levels (especially phosphate), sediment and dissolved organic carbon from agricultural activities. In addition, increased rainfall and, in particular, an increase in storm events as a result of climate change, is likely to result in increases in direct losses of chemical fertilisers from agricultural land. Diffuse pollution is having particularly deleterious effects on a range of water-dependent habitats. These include peatlands (bogs, fens), wet grasslands (e.g. *Molinia* grasslands) and watercourses and water bodies themselves. These last include the following Annex 1 habitats: oligotrophic isoetid lake habitats, hard-water lake habitats, turloughs, acid oligotrophic lake habitats and vegetation of flowing waters.

Species associated with these habitats and especially those suited to low nutrient conditions will also be detrimentally impacted. These include slender naiad, floating water-plantain and pollan. A range of other species will be affected by changes in water nutrient status as well as increases in sediment loading. These would include fish species such as Atlantic salmon, lampreys and shad, as well as freshwater pearl mussel and white-clawed crayfish. A small number of SPA bird species are also tied to shallow water bodies for breeding and these would also be impacted by diffuse pollution. Species affected would include pochard, common scoter and goldeneye. It should be noted that there are many surface waters that are not formally designated as SAC habitats but that support populations of Annex II fish and/or Annex I bird species.

Drainage

Draining of agricultural land can result in severe alterations to major nutrient sinks and sources, increases in soil temperature and humidity and changes to soil structure and composition. The drainage of bogs and wet grasslands as part of the intensification process can result in changes to hydraulic conditions, leading to increased sediment load to water; and a more direct pathway to rivers for pollutants originating on 'dry land'. Oligotrophic and oligo-mesotrophic waters and natural eutrophic and dystrophic lakes in Ireland are under extreme pressure from reduced water levels caused by such activities. Turloughs are also especially vulnerable to impacts on water levels. *Vertigo* species of snail are affected by the drying out of fens as it reduces the suitability of their preferred habitat.

Drainage of wet grasslands and peatlands is also particularly detrimental for breeding wader species such as curlew, dunlin and golden plover.

Reduced Breeding Success or Increased Predation, Possibly Resulting in Reduced Population Viability

Drainage and intensification has reduced the breeding habitat available for ground nesting birds, whilst it has also increased predation of such species through creation of suitable

habitat for predators. Effects are likely to be highest at farmland edges, e.g. predation by corvids such as hooded crow (*Corvus cornix*).

The main reason for the decline in freshwater pearl mussel populations is because of a lack of recruitment, i.e. the species has been unable to successfully reproduce, or the young mussels have not survived (DAFM, 2013). This is in part because the gravel river beds within which the mussels live have become infiltrated by sediment and/or overgrown by algae or macrophytes, typically as a result of agricultural activities. The population at several of the priority mussel catchments will become extinct within a generation if the habitat quality within those catchments is not improved.

Inshore and Off-shore fisheries

A number of potential issues are evident in relation to offshore Annex habitats. These include the effects of pollution, encompassing direct run-off from agriculture on-shore and nutrient build-up from aquaculture sources (e.g. salmon farming and mussel farming in in-shore waters). Pollution can affect estuaries, tidal mudflats and saltflats, large shallow inlets and bays and lagoons. This last habitat is highly prone to eutrophication impacts from adjacent agriculture. Inappropriate dredging and other fishing methods that can damage the sea bed can also have detrimental impacts on delicate habitats such as reefs and large shallow inlets and bays. The introduction of alien species (in particular, Pacific oyster) through aquaculture, will have deleterious effects on a range of marine Annex habitats as well as associated native species.

A range of fish species, associated with inland waters for at least part of their life cycle, have the potential to be overfished. These include salmon, lamprey species and shad. This could be the result of bycatch as well as direct fishing. Overfishing of juveniles could be particularly detrimental to population levels. In addition, a number of Annex bird species, such as divers, petrels and terns, could be susceptible to the effects of overfishing (either directly or through by-catch). Seabirds are also at risk of bycatch themselves (i.e. being caught in fishing lines, etc.). Plastic waste from the fishing industry, as well as from on-shore sources, is a further detrimental factor, smothering marine habitats and being ingested by such species as leatherback turtle.

Relevant Natura 2000 Habitats and Species

The AA seeks to identify which qualifying features of Ireland's Natura 2000 sites are currently under pressure from agricultural activities, and which are thought likely to be under threat in future. Based on the discussion in the preceding paragraphs, it is clear that the majority of habitats and species encompassed by the Natura 2000 series are at risk from agricultural activities. Natura 2000 sites with the Annex I habitats, Annex II or IV species¹ or Annex I bird species listed in *Table 6* could potentially be adversely affected by agriculture, forestry and fisheries activities.

Table 6: Habitats and Species under Pressure from Agricultural Activities

Annex I Habitats	Annex II/IV Species and Annex I Birds
Grasslands	Invertebrates
6130 Calaminarian grasslands of the <i>Violetalia calaminariae</i>	1013 Geyer's whorl snail (<i>Vertigo geyeri</i>)

¹ Species listed under Annex IV of the Habitats Directive are not qualifying features of SACs, however they are in need of strict protection at the EU level.

Annex I Habitats	Annex II/IV Species and Annex I Birds
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>)(*important orchid sites)	1014 Narrow-mouthed whorl snail (<i>Vertigo angustior</i>)
6230 Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)	1016 Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>)
6410 <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>)	1029 Freshwater pearl mussel (<i>Margaritifera margaritifera</i>)
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	1065 Marsh Fritillary (<i>Euphydryas aurinia</i>)
6510 Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)	1092 White-clawed Crayfish (<i>Austropotamobius pallipes</i>)
Peatlands	Fish
7110 Active raised bogs	1095 Sea Lamprey (<i>Petromyzon marinus</i>)
7120 Degraded raised bogs still capable of natural regeneration	1096 Brook Lamprey (<i>Lampetra planeri</i>)
7130 Blanket bog (*active only)	1099 River Lamprey (<i>Lampetra fluviatilis</i>)
7140 Transition mires and quaking bogs	
7150 Depressions on peat substrates of the <i>Rhynchosporion</i>	1103 Twaite Shad (<i>Alosa fallax</i>)
7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	5076 Pollan (<i>Coregonus autumnalis</i>)
7220 Petrifying springs with tufa formation (<i>Cratoneurion</i>)	1106 Atlantic Salmon (<i>Salmo salar</i>)
Heath and scrub	Amphibians
4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>	6284 Natterjack Toad (<i>Epidalea calamita</i>)
4030 European dry heaths	Mammals
4060 Alpine and boreal heaths	1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)
Rocky Habitats	Plants
8210 Calcareous rocky slopes with chasmophytic vegetation	1395 Petalwort (<i>Petallophyllum ralfsii</i>)
8220 Siliceous rocky slopes with chasmophytic vegetation	1528 Marsh Saxifrage (<i>Saxifraga hirculus</i>)
8240 Limestone pavement	1833 Slender Naiad (<i>Najas flexilis</i>)
Freshwater habitats	Birds
3110 Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>)	A001 Red-throated Diver (<i>Gavia stellata</i>)
3130 Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>	A002 Black-throated Diver (<i>Gavia arctica</i>)
3140 Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.	A003 Great Northern Diver (<i>Gavia immer</i>)
3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation	A014 Storm Petrel (<i>Hydrobates pelagicus</i>)
3160 Natural dystrophic lakes and ponds	A015 Leach's Petrel (<i>Oceanodroma leucorhoa</i>)
3180 Turloughs	A037 Bewick's Swan (<i>Cygnus columbianus bewickii</i>)
3260 Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation	A038 Whooper Swan (<i>Cygnus Cygnus</i>)

Annex I Habitats	Annex II/IV Species and Annex I Birds
3270 Rivers with muddy banks with <i>Chenopodium rubri</i> p.p. and <i>Bidenton</i> p.p. vegetation	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)
Dunes	A396 Barnacle Goose (<i>Branta leucopsis</i>)
2110 Embryonic shifting dunes	A059 Pochard (<i>Aythya farina</i>)
2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	A065 Common Scoter (<i>Melanitta nigra</i>)
2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)	A067 Goldeneye (<i>Bucephala clangula</i>)
2140 Decalcified fixed dunes with <i>Empetrum nigrum</i>	A082 Hen Harrier (<i>Circus cyaneus</i>)
2150 Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)	A098 Merlin (<i>Falco columbarius</i>)
2170 Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salix arenariae</i>)	A122 Corncrake (<i>Crex crex</i>)
2190 Humid dune slacks	A140 Golden Plover (<i>Pluvialis apricaria</i>)
21a0 Machairs (* in Ireland)	A160 Curlew (<i>Numenius arquata</i>)
Coastal habitats	A466 Dunlin (<i>Calidris alpina schinzii</i>)
1110 Sandbanks which are slightly covered by sea water all the time	A191 Sandwich Tern (<i>Sterna sandvicensis</i>)
1130 Estuaries	A192 Roseate Tern (<i>Sterna dougallii</i>)
1140 Mudflats and sandflats not covered by seawater at low tide	A193 Common Tern (<i>Sterna hirundo</i>)
1150 Coastal lagoons	A194 Arctic Tern (<i>Sterna paradisaea</i>)
1160 Large shallow inlets and bays	A195 Little Tern (<i>Sterna albifrons</i>)
1170 Reefs	A229 Kingfisher (<i>Alcedo atthis</i>)
1230 Vegetated sea cliffs of the Atlantic and Baltic coasts	A282 Ring ouzel (<i>Turdus torquatus</i>)
	A346 Chough (<i>Pyrrhocorax pyrrhocorax</i>)

4 POTENTIAL EFFECTS OF THE AGRI-FOOD STRATEGY

4.1 Existing Initiatives

Prior to discussing the goals and actions contained in the AFS, it is worth highlighting a number of other relevant initiatives, schemes and regulations. These include:

- The NPWS has published detailed site-specific conservation objectives for 327 SACs and 37 SPAs (NPWS, 2020). The objective of the Habitats Directive is to maintain or restore the favourable conservation status of habitats or species and the conservation objectives define the favourable conservation condition for a particular habitat or species at that site. Some of the schemes outlined below are specifically targeted at SAC/SPA conservation objectives.
- Approximately 50,000 farmers participated in the GLAS scheme under the RDP 2014-2020 and as of 2019 approximately 796,000 ha were covered by area based actions. Natura 2000 sites are specifically targeted by the scheme, as are a range of Annex species (e.g. hen harrier, corncrake, chough, breeding waders). Approximately 23,191 ha of land is covered by the Burren Programme, a locally led Agri-environment climate measure, with 328 participating farmers. The Burren Programme targets a number of SAC habitats for management, including large areas of limestone pavement, dry grasslands (important orchid sites) and turloughs. It also encompasses Annex 1 bird species such as chough. Another programme is the Hen Harrier Programme, which is aimed at farmers with land designated for the protection of breeding hen harrier. Currently 57,732 ha is covered by this scheme. The Pearl Mussel Project, a European Innovation Partnership (EIP) for Freshwater Pearl Mussel catchments, covers approximately 21,405 ha of farmland (Biodiversity Working Group, 2020).
- The Prioritised Action Framework (PAF) is a strategic multiannual planning tool, aimed at providing a comprehensive overview of the prioritised measures that are needed to manage the EU-wide Natura 2000 network and its associated green infrastructure. The draft PAF for Ireland identifies the financing needs for these measures for the period 2021 - 2027 and links them to the relevant EU funding programmes. The estimated costs in the draft PAF for Ireland are not commitments to funding, rather they are indications of the level of investment required to manage and restore habitats and species in the Natura 2000 network.
- Ireland is also a party to the EU Biodiversity Strategy. The European Commission has adopted the new EU Biodiversity Strategy for 2030 and an associated Action Plan (annex). The strategy is a comprehensive, ambitious, long-term plan for protecting nature and reversing the degradation of ecosystems.
- Ireland has undertaken Red List assessments of the threat of extinction of vascular plant, bryophyte and non-marine vertebrate taxa as well as the better known invertebrate groups. Although most are not considered threatened, just over 14% of the taxa were assessed as under threat of extinction (including natterjack toad) (DCHG, 2017).
- Stocks of Atlantic salmon have been declining and only 34% of Irish salmon waters are considered to have healthy salmon populations.

- According to the Marine Institute Stockbook 2018 and Shellfish Stockbook 2018, there are 28 fish stocks whose biomass levels are below those capable of delivering maximum sustainable yield (MSY), 46 stocks were above levels that could support MSY and 60 were unknown (Biodiversity Working Group, 2020). To avoid overfishing and ensure a sustainable long-term seafood industry, fisheries are managed through the EU Common Fisheries Policy (CFP). This includes the setting of annual Total Allowable Catches (TAC) for most commercial fish stocks, from which national quotas are derived.
- The breeding distributions of bird species that are associated with farmland, such as curlew and lapwing have declined substantially over recent decades, with curlew on the brink of local extinction according to survey work in 2015 and 2016 (DCHG, 2017). However, the Curlew Conservation Programme has been running for three years to implement conservation measures in core breeding areas and in 2019 a record high number of breeding pairs and increase in breeding productivity was recorded (Biodiversity Working Group, 2020).
- Short term assessments also undertaken for breeding bird populations and a selection of wintering bird populations reported declines of 18% and 52% respectively (Biodiversity Working Group, 2020). The 2013 assessment of the status of 185 regularly occurring bird species placed 37 species on the Birds of Conservation Concern in Ireland Red list, 90 on the Amber list and 58 on the Green list. The number of Red-listed species had increased by 12 and Amber-listed species by five since the previous review in 2007 (DCHG, 2017). The more recent Countryside Bird Survey (CBS) (Lewis, L. et al., 2019) identified that over an 18-year period, population trend analyses indicate that 47% of species are increasing, 27% of species are stable and approximately 26% are in decline. In terms of seabirds, monitoring data identified that over approximately 16 years, 85% of assessed species were increasing while two were showing stable trends and one was decreasing. However, when compared to an approximately 32 year period, 68% species were estimated to have increased, 11% showing stable trends and 21% decreased (Cummins, S. et al., 2019).

4.2 The Agri-food Strategy

In developing the AFS, the Committee has agreed to adopt a ‘Sustainable Food Systems’ approach. This has resulted in the development of four main missions, which will act as the core of the strategy. These are:

- A Climate Smart, Environmentally Sustainable Agri-food Sector
- Viable and Resilient Primary Producers with Enhanced Well-being
- Food that is Safe, Nutritious and Appealing; Trusted and Valued at Home and Abroad
- An Innovative, Competitive and Resilient Agri-food Sector, driven by Technology and Talent

Of most relevance to this AA and to the interaction between agriculture and biodiversity is Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector. This Mission is explored in detail below. It should be noted that the three other Missions are in alignment with Mission 1, and there is extensive cross-referencing between the four. They are outlined briefly below, with relevant sections highlighted.

4.2.1 Mission 1: A Climate Smart, Environmentally Sustainable Agri-food Sector

The context for the AFS, including Mission 1, is provided in a separate overview chapter. This raises the important issues of climate change and biodiversity loss. The chapter also recognises that the next CAP budget will have a major focus on these issues and therefore, will result in significant changes to the way Ireland farms and fishes. A number of challenges are identified in the introduction to Mission 1. The most relevant of these are:

- Climate mitigation and adaptation. Irish agriculture accounts for one third of national emissions of Greenhouse Gases (GHGs). This is partly a reflection of the size of the agriculture sector relative to the broader economy (and the historical absence of heavy industry). Ammonia emissions are also cited as a key issue with respect to air quality. Almost all ammonia emissions in Ireland are generated by agriculture.
- Biodiversity. The introduction to Mission 1 recognises that changes in agriculture, forestry and fishing activities have impacted on biodiversity on land and sea.
- Water quality. There is also an acknowledgement of the explicit link between agriculture and forestry and water quality.

In order to respond to these challenges, seven goals have been identified:

- 1) Develop a climate neutral agri-food system so that by 2050, the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by removals; and improve air quality.
- 2) Restore and Enhance Biodiversity.
- 3) Protect high status sites and contribute to the protection and restoration of good water quality and healthy aquatic ecosystems, as set out in the Water Framework Directive
- 4) Develop Diverse, Multi-Functional Forests.
- 5) Enhance the Environmental Sustainability of the Seafood Sector.
- 6) Embed the Agri-food Sector in the Circular, Regenerative Bioeconomy.
- 7) Strengthen and invest in Origin Green and other sustainability supports to reflect the higher level of ambition for the agri-food sector.

These goals are addressed further through a series of strategic actions. The most relevant to this AA are outlined below.

Goal 1. Develop a climate neutral agri-food system so that by 2050, the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by removals; and improve air quality.

At the core of this goal is the 'Ag-Climatise' programme, which sets a vision for a 'climate neutral agriculture sector by 2050'. It includes 29 actions, with specific and challenging targets aimed at reducing the environmental footprint of agriculture. Ag-climatise actions and target are based on Marginal Abatement Cost Curves (MACCs). In particular, Ag-Climatise foresees a significant reduction in methane emissions, equating to 24 – 47% (the latter reached by 2050). An ambitious interim target of 10% reduction by 2030 is proposed. This will be achieved through stabilising emissions from the national herd and implementing new technologies. There are plans to establish the sustainable environmental footprint of the dairy and beef sectors with a view to, amongst other things, reducing total methane, nitrous oxide and ammonia emissions and positively contributing to improving water quality and biodiversity. Practices and technologies that lead to reductions in GHGs are likely to have many positive

resultant synergies and knock-on benefits for biodiversity, through for example, improvements in water quality and reductions in ammonia emissions.

On-farm carbon trading will be explored, with a focus on sustainable land management practices that reduce carbon dioxide (CO₂) loss from land (e.g. prevention of emissions from emission sensitive soils, sequestration of carbon, grass growth and crop modelling). A certification mechanism will also be introduced equivalent to a Carbon Code.

Renewable Energy (RE) sources will be increased, especially anaerobic digestion and solar energy. Agriculture can play a key role in this respect. Research will also take place in relation to grass varieties such that sward density and longevity can be produced through lower levels of nitrogen application and good nutrient management. Research will be particularly geared to increasing knowledge and expertise in methane science and soil carbon sequestration.

The food and beverage industry will continue to drive down GHG emissions. This will include both larger companies and smaller enterprises, the latter of which have been falling behind in reducing their CO₂ emissions.

Goal 2. Restore and Enhance Biodiversity. This goal is of high relevance to the AA. It is helpful to review the biodiversity proposals under four sub-headings: baseline biodiversity studies, pesticides, pollinators and habitats.

Baseline biodiversity studies. It is proposed that baseline biodiversity studies are carried out on every farm. These will include habitats and hedgerows. The objective is that the baseline studies will inform future policy development and allow measurement of progress. DAFM and Teagasc will also consider building further biodiversity measurements into the National Farm Survey. In addition to baseline biodiversity studies, the 2030 Strategy Committee have suggested that a national land use review is undertaken to develop a 50-year vision on sustainable land use, land cover and land management which would include farmland, forests and peatlands. Work has begun by Natural Capital Ireland on compiling Natural Capital accounts for Ireland. An overall objective is to prioritise 10% of farmed areas for biodiversity by 2030. These will be spread across all farms throughout the country.

Pesticides. There is a commitment that Ireland will play an active and constructive role in the development of measures to realise the objectives for pesticide use reduction in the EU Biodiversity Strategy 2030 and the Farm to Fork Strategy and in particular, the objective of reducing pesticide use by 50% by 2030. At the same time, there are fears that this may lead to in-field crop losses, greater levels of food waste and a lack of competitiveness. Solutions may take the form of new crop varieties, using New Plant Breeding Techniques and the widespread use of Integrated Pest Management. Crop rotation will lead to more diverse crops. There is also a need for further research and knowledge transfer. The strategy recognises that a balance needs to be struck between pesticide reduction and crop losses and reduction in competitiveness.

Pollinators. An All-Ireland Pollinator Plan is being produced and this should be disseminated to farmers. It is suggested that this is implemented through making space for habitats that pollinators can use, alongside a significant restoration of semi-natural grassland habitats.

Habitats. Key actions include ensuring that agriculture does not contribute to habitat destruction. This will be achieved through better enforcement of existing environmental rules, including strengthened implementation of the Environmental Impact Assessment (EIA) Agricultural Regulations. Agri-environment schemes should be more targeted to protect and enhance Ireland's habitats and species. For example, there should be payments for specific measures such as addressing the decline in farmland birds. Therefore, agri-environment schemes should be based more on results-based actions and there should be a greater use of higher level measures underscored with a results-based payment system. It is stated that

Ireland has over 1M ha High Nature Value farmland, and that this should be particularly targeted by schemes, and locally adapted to different landscapes. Specific mention is made of the restoration management of grazed peatlands. This could be achieved through, for example, European Innovation Partnerships. Measures promoting greater biodiversity in forests should also be adopted e.g. a minimum broadleaf rule as well as setbacks from watercourses and archaeological features. Again, payment should be linked to significant public goods and societal benefits and not to profit foregone.

Goal 3. Protect high status sites and contribute to the protection and restoration of good water quality and healthy aquatic ecosystems, as set out in the Water Framework Directive. A key focus here is a reduction in nitrogen, phosphorus and sediment. The agriculture sector needs to transition to lower nitrogen use systems, particularly in regions with identified water quality problems. This will be achieved through implementing the actions in Ag-Climate as well as through managing and mitigating losses of phosphorus and sediment to water. Specific actions include a greater recovery of nitrogen and phosphorus from livestock manures. Modelling of nitrogen, phosphorus and sediment is proposed at a catchment level and nutrient profiling at a field scale. Both these will reduce nutrient losses to water.

Co-benefits of reducing nitrogen levels would be a reduction in GHGs and ammonia emissions, while simultaneously improving water quality and biodiversity. Other strategic actions in this respect are an increased use of multi-species pasture swards (particularly including more clover) and the development of bio-fertilisers. Mitigation strategies should be developed at the catchment level to improve water quality. A National Soil Sampling and Analysis Programme will be implemented with an emphasis on nutrient cycling, primary production and carbon sequestration.

Agricultural use of pesticides impacting water will be reduced through the principles of integrated pest management. Strategic actions in relation to water quality also advocate for more targeted, results-based agri-environment schemes, underlining the importance of providing the right measure in the right place. There will be more integration of forestry measures to encourage the planting of native riparian woodland to provide watercourse protection. More generally, multi-stakeholder collaboration will be encouraged, alongside the use of targeted regulations, via the Water Framework Directive and Nitrates Directive. Soil management will also be a key consideration, and a National Soils Strategy will be developed.

Goal 4. Develop diverse, multi-functional forests. Strategic actions in relation to this goal include maintaining and protecting the existing forest estate and reducing deforestation. Forests will be managed with ecosystem services in mind e.g. climate adaptation. There will be an emphasis on the multiple benefits that forestry can deliver for society including timber and wood products. Options to afforest state owned lands will be examined. At the same time, farmers will be placed at the centre of a new and improved afforestation scheme. Such a scheme may include the planting of trees to create filtration buffers that can reduce sedimentation of adjacent water courses/interception of nutrient run-off. New native woodlands can also provide habitat corridors. Woodland could take the form of shelterbelts, riparian planting and continuous cover forestry. Again, there should be an emphasis on results-based payments. Farm businesses will be actively encouraged to increase forest cover. Licensed tree felling and afforestation will comply with existing environmental requirements.

Goal 5. Enhance the environmental sustainability of the seafood sector. A new integrated marine plan will be developed, building on the previous 'Harnessing Our Ocean Wealth' though with a greater focus on sustainability. To ensure a sustainable long-term seafood industry, Total Allowable Catches (TACs) should continue to be informed by science and fishing at Maximum Sustainable Yield (MSY) should be followed. Ireland should continue to be proactive in developing ways of omitting juvenile fish and non-target fish in fishing gear. This

will help meet the Landing Obligation, which will eliminate wasteful and unsustainable discarding of fish and improve fisheries sustainability. The strategy points out that the majority of Ireland's marine Natura 2000 sites are located in and around inshore waters. Thus, measures designed to mitigate impacts on these sites should be particularly targeted at inshore fisheries. Leading on from this, management measures must be specifically designed to take account of the conservation objectives for relevant habitats and species. Education and information should also be provided on the potential impact of changing environmental conditions. The possibility of the introduction of exotic species, particularly in in-shore waters and in relation to aquaculture is also an important consideration. Ireland is aiming for an initial target of 10% of Marine Protected Areas under the Marine Strategy Framework Directive, as soon as practical, with a longer term aim of 30% Marine Protected Areas by 2030. At the same time, Seafood Sustainability Programmes will be further developed and the Clean Oceans Initiative will be prioritised. This latter aims to address the problem of plastic and marine litter in the ocean. Furthermore, assessment will be conducted into the potential impacts of climate change on the seafood sector i.e. issues in relation to changing fish distribution, rising sea temperatures and the industry's contribution to GHGs.

Goal 6. Embed the Agri-Food Sector in the Circular, Regenerative Bioeconomy. The emphasis here is on regenerative production systems. Thus, livestock, arable, marine and horticulture systems should examine the use of raw materials from each other's supply chains and waste flows. Three areas of action are evident. Firstly at the primary level, there is much potential in the development of bio-based value chains e.g. in the seafood sector, the use of fisheries discards, seaweed farming, new pharmaceuticals from marine ecosystems and so on. Renewable energy such as anaerobic digestion also has much potential. Secondly, there is a cross-cutting theme which would include the scaling up of circular bioeconomy approaches. Cross-cutting would also include the establishment of a knowledge hub and a central observatory for biomass resources which would allow for the comparison and analysis of different technologies. The third area would centre on tackling food waste and packaging. This would include the development of clear national and sectoral targets for 2025 and 2030. It would also encompass research into the extent of food loss at the primary stage in an Irish context (in line with the EU Farm to Fork Strategy). Finally, more sustainable packaging should be pursued at the earliest opportunity.

Goal 7. Strengthen Origin Green to reflect the higher level of ambition for the agri-food sector. This goal recognises the strengths of Origin Green to date, but argues that the strategy now needs to build on this and to adopt a higher level of ambition. This includes building on metrics in the areas of climate, water quality, animal health and welfare, carbon sequestration and the circular bioeconomy. Sustainability needs to be built further into the strategy, through closer links with the Agricultural Knowledge and Information System (AKIS). Further research will be carried out in relation to the health and sustainability benefits of grass-based food. More businesses will be encouraged to sign up to Origin Green. This will run alongside a marketing push, outlining the benefits of Origin Green to the wider public.

4.2.2 Mission 2: Viable and Resilient Primary Producers with Enhanced Well-being

Mission 2 is extensively cross-referenced with Mission 1. Although its main focus is on production, productivity, competitiveness and social sustainability, the chapter emphasises that this should not be at the expense of environmental considerations. In relation to the dairy and beef sectors, a key action is that they should be managed in order to produce a sustainable environmental footprint, including minimising total emissions while making a positive contribution to improved water quality and biodiversity. This action is therefore in line with Mission 1, Goal 1. In achieving this, the following will be reviewed:

- The impact of management practices and the application of existing technologies at farm level, including emerging methane and ammonia mitigation technologies
- Promoting better pasture management, including reducing chemical nitrogen use and increasing clover
- Continued progress on genetics

In relation to beef and sheep, similar actions are proposed, including continuing improvements in pasture management. This will be achieved through improving soil fertility and the reduction of chemical nitrogen use and increasing clover. A further action under beef and sheep is that farm income supports should be increasingly targeted at environmental sustainability.

Under pigmeat and poultry, a key action is to implement specific environmental targets and actions for the sector, encompassing GHG emissions reductions, including ammonia and a better energy efficiency, including renewables.

The section on tillage also highlights the importance of improving soil fertility, but at the same time reducing overall chemical nitrogen use. This would include greater nutrient integration with other sectors through the use of organic manure. There is a stated ambition to at least maintain and potentially increase the overall extent of tillage and horticulture areas.

Under forestry, one of the actions is to develop a new Forestry Strategy for Ireland.

This Mission also covers seafood, advocating MSC certification for rope and bottom grown mussels used by the aquaculture sector to demonstrate their sustainability credentials. It also states that salmon should be exclusively produced to the EU organic certification standard.

Cross referencing to Mission 1 is also included in the areas of afforestation on farms and the bioeconomy. This latter talks of primary producers diversifying their farming systems in a way that is more circular and environmentally sustainable. The Burren Programme is cited as an exemplar, where farming places an increasing emphasis on 'ecosystem services' such as cleaner water, more flowering plants and a beautiful landscape. As with many other elements of the AFS, the emphasis is on annual results-based payments linked to better environmental field scores.

4.2.3 Mission 3: Food that is Safe, Nutritious and Appealing; Trusted and Valued at Home and Abroad

Mission 3 largely focuses on the health and nutritional value of food. Its main crossover with Mission 1 is in relation to prioritising products derived from grass-fed systems.

4.2.4 Mission 4: An Innovative, Competitive and Resilient Agri-food Sector driven by Technology and Talent

This Mission clearly focuses on the agri-food sector being driven by enhanced technology and in this respect does not have a great deal of crossover with Mission 1. However, the role of farmer representative organisations is emphasised and the action states that farm advisors should be trained in and be able to train farmers in '.... Maintaining and enhancing biodiversity.' It states that environmental resource management modules should be included in primary producer education and training.

This Mission also provides the Hen Harrier Project as an example of field-based technology. This project includes 1600 participants who manage 37, 610 ha of land within SPAs (at least partly designated for hen harrier). Data collection was made on almost 19, 000 fields through the use of an App. The Project also includes a nest protection management system. The

chapter states that this type of field based technology could be used widely in the development of results-based schemes as part of the next CAP.

4.3 Likely Effects of the AFS

This section outlines the likely effects of the AFS on Natura 2000 habitats and species across Ireland. It takes each of the potential impact pathways identified in Section 3.5.1 and describes to what extent the AFS actions address these. Each of these impact pathways are intimately connected to agricultural, forestry and fisheries activities and are the key routes by which agriculture can affect the status of Natura 2000 sites. The actions within the AFS are therefore critical in determining the future direction of these impact pathways (positive or negative).

4.3.1 Agricultural Intensification

As described in Section 3.5.1, agricultural intensification encompasses both grazing impacts and fertiliser use. Within the AFS, grazing is not specifically mentioned in terms of actions, apart from indirectly in relation to targeting of agri-environment schemes. However, grazing levels would form a key consideration in the proposal to carry out baseline biodiversity studies on each farm in Ireland. Many semi-natural habitats (particularly grasslands, heathlands, peatlands and saltmarsh) will only remain or attain favourable condition if grazing levels are appropriate. The proposal to carry out baseline surveys is especially relevant (in terms of grazed habitats) for farms within SACs containing the habitats listed above. The importance of protecting Natura 2000 grassland, heathland, peatland and saltmarsh habitats is also recognised in the proposed strengthening of the EIA (Agriculture) Regulations. This action will act as a counter measure to agricultural intensification. Allied to this is the more refined targeting of agri-environment schemes, alongside results-based payments. These actions should all provide a greater measure of protection for those Natura 2000 habitats that rely on specific grazing levels to maintain optimum diversity. In essence, it is targeting the right measures for the right Natura 2000 habitats. The AFS also talks of a greater use of higher level measures with respect to agri-environment schemes. Again, this would favour the inclusion of more biodiverse habitats, including those reliant on specific grazing levels. At a more strategic level, the AFS advocates a new national land use review.

Running alongside an increased targeting of agri-environment measures and strengthening of the EIA (Agriculture) Regulations, are actions with respect to pollinators. These are particularly targeted at grassland habitats and include the implementation of a National Pollinator Plan, with the specific aim of increasing diversity. A key element of this will be a reduction in pesticide use, which will result in greater insect abundance and diversity and lead to more diverse grasslands. Improved targeting of agri-environment measures, strengthening of implementation of EIA (Agriculture) Regulations and increased consideration of pollinators will also benefit a small number of Annex II species, in particular, marsh fritillary (lightly grazed purple moor-grass and rush-pastures) and whorl snails (calcareous fens with open vegetation).

In terms of fertiliser use, a key aim is to reduce use of nitrogen and phosphorus. This will be achieved through the various measures in the Ag-climatise programme as well as other actions such as the recovery of nitrogen from livestock manures. A reduction in nitrogen and phosphorus will be highly beneficial for a wide range of Natura 2000 habitats including a number of terrestrial systems that are reliant on low levels of these nutrients to achieve optimum condition (e.g. peatlands, most grasslands, heathlands, some woodlands). Reduction in nitrogen, phosphorus and sediment levels will also have indirect benefits for most water-dependent Natura habitats (e.g. turloughs, oligotrophic, mesotrophic and dystrophic waters). These are all nutrient-poor systems and addition of nitrogen, phosphorus

and/or sediment is detrimental to their condition. Therefore any measures to reduce these are beneficial to a large proportion of Natura 2000 habitats. At the same time, most Annex II species (e.g. pollan, slender naiad, freshwater pearl mussel) dependent on these Annex I habitats would also benefit from reductions in nutrients and sediment. Furthermore, a small number of SPA species such as pochard, common scoter and goldeneye are dependent on shallow water bodies, with abundant food sources. Reductions in nutrients will also have indirect benefits for these species. Both Mission 1 and Mission 2 chapters discuss better pasture management. This will be partly achieved through a reduction in nitrogen and phosphorus levels.

4.3.2 Atmospheric Factors

The main potential impact pathways here are nitrogen emissions and methane. The former has largely been discussed above in relation to decreasing fertiliser use. It would also include ammonia emissions, which could have detrimental impacts on a similar range of Natura 2000 habitats such as low nutrient grassland, heathland and peatland systems. Livestock production is a key contributor to nitrogen levels, particularly in the south and south-east of the country, where these farming systems are the most prevalent. Actions to counteract increased nitrogen levels are outlined under Section 4.3.1.

As discussed in Section 3.5.1, methane is a particularly potent GHG leading to increased levels of climate change and subsequent potential indirect impacts on a wide range of Natura 2000 habitats and associated species. Increased frequency and duration of flooding is cited as a key concern for several habitats, especially those that are dependent on an intermittently high water table (e.g. fen systems, Molinia and rush-pasture grasslands) and upland peatlands that may be subject to bog burst or extensive erosion. Therefore, actions to reduce methane levels would be highly beneficial to these Natura 2000 habitats. The AFS contains a number of actions in this respect. These are mainly contained within the stipulations of the Ag-climate programme. Key objectives are to stabilise and then reduce herd emissions (by 24-47% by 2050, and at least a 10% reduction of biogenic methane by 2030). This will be achieved through the plugging of hotspots of emissions from organic soils, implementation of new technologies, in line with an increase in research into methane and other GHG emissions. Carbon reduction is also a focus for the AFS, which states that on-farm carbon trading will be investigated. Further, the food and beverage industry will continue to drive down GHG emissions, particularly through carbon capture technologies.

4.3.3 Diffuse Pollution of Surface Water and Ground Water

Impacts in relation to diffuse pollution and water-dependent Natura sites are outlined in Section 3.5.1. These mainly centre on the build-up of nutrients, including nitrates and phosphates in low nutrient systems such as Annex 1 habitats: oligotrophic isoetid lake habitats, hard-water lake habitats, turloughs, acid oligotrophic lake habitats and vegetation of flowing waters. Ramifications of nutrient build up are also evident for a number of Annex II species associated with freshwater bodies (slender naiad, floating water-plantain, pollan, freshwater pearl mussel), as well as those found (at least partly) in in-shore waters (Atlantic salmon, lampreys and shad). Annex bird species (particularly common scoter, goldeneye and pochard) could also be impacted. Potential impacts on Natura 2000 sites and species also include those associated with sedimentation and pesticides.

The AFS has a particular focus on reducing nitrogen impacts as outlined in Sections 4.3.1 and 4.3.2 above. This will be largely achieved through measures contained in Ag-climate and the review of Ireland's Nitrates Action Programme. Additional actions in relation to watercourses and water bodies include forestry 'setbacks' so that trees are not planted right up to the

water's edge (leading to sedimentation and diffuse pollution issues). Alternative proposals include the use of planting of specific species known for their filtration capability, thus reducing sedimentation. Pesticides will be tackled through the use of integrated pest management. Greater use of targeted regulations will be made through the Water Framework Directive and Nitrates Directive. Better soil management will also be achieved through a National Soils Strategy. Importantly with respect to impacts on watercourses and water bodies, the AFS states that mitigation strategies will be implemented at a catchment level. This would be key to achieving results for Natura 2000 sites, as opposed to attempting to manage issues at a site level.

4.3.4 Drainage

Drainage can have an impact on most Annex I water-dependent habitats, but, as outlined in Section 3.5.1, is particularly detrimental to 'isolated' water bodies such as oligotrophic and oligo-mesotrophic waters, natural eutrophic and dystrophic lakes and turloughs. Reduced water levels in these systems can lead to a concomitant build-up of nutrients, sediment and other pollutants. Drainage of wet grasslands and peatlands also has a major impact on Annex bird species, especially breeding waders (e.g. curlew, golden plover, dunlin).

Baseline biodiversity studies, allied with the better targeting of agri-environment schemes, as outlined in Section 4.3.1, will lead to increasing identification of key examples of Natura 2000 habitats that should not be impacted by drainage activities. The increasing use of higher level measures under agri-environment schemes would also be beneficial for most water-dependent Natura 2000 habitats, as these often require detailed and site-specific management (set in the context of wider, catchment level water sources). One such measure would be the re-wetting of peatlands and wet grasslands. Strengthening of the implementation of the EIA (Agriculture) Regulations would be an additional strong action in preventing damage to high quality (Natura) examples of wet grasslands and peatlands (and potentially encompassing the water body habitats outlined above).

The actions detailed in Section 4.3.3 in relation to Ag-climatise in reducing nitrate levels would be highly applicable to the potential build-up of nitrates and other pollutants in water bodies with compromised water levels. Similarly soil management measures and the use of EU Directives such as WFD and the Nitrates Directive will all contribute to reducing the build-up of nitrate and other pollutant levels.

4.3.5 Reduced Breeding Success or Increased Predation, Possibly Resulting in Reduced Population Viability

Potential impacts under this heading are largely the indirect result of other effects. These would include most of the issues outlined in Section 4.3.1 – 4.3.4 (i.e. intensification, atmospheric factors, diffuse pollution and drainage). Reduced breeding success and population viability are clearly issues in relation to Annex II species, as opposed to Annex I habitats. The AFS actions outlined in the above sections will have associated positive impacts on Annex II species (and Annex I bird species). They will not be repeated here, but include those associated with achieving optimum grazing levels and reducing diffuse and atmospheric pollution.

4.3.6 Inshore and Off-shore Fisheries

A number of impacts in the in-shore environment are outlined in Section 3.5.1. These encompass pollution and nutrient build-up from aquaculture, dredging and other invasive fishing techniques, the introduction of alien species, overfishing and issues associated with by-catch and plastic waste. Effects are felt on a number of Annex I habitats (estuaries, tidal

mudflats, large shallow inlets and bays and lagoons), Annex II species (salmon, lampreys, shad) and Annex I bird species (divers, petrels, terns).

A number of actions are proposed in the AFS in relation to in-shore and offshore fisheries. These include a more sustainable approach to both aquaculture and dredging supported through a new Integrated Marine Plan. This approach will be further bolstered by TAC levels informed by science and implemented under a robust fisheries control system underpinned by sustainable fishing practices such as the Landing Obligation. The AFS also has ambitious targets for increasing the extent of protected marine areas. Further benefit will be gained through the Clean Oceans Initiative with respect to reducing plastic and other waste.

These actions in combination are likely to have a large beneficial effect on Annex 1 habitats and Annex II species, as well as Annex I bird species. Actions in relation to preventing nutrient run-off into estuaries, lagoons and so on, will further assist in returning habitats to favourable condition. Finally, an action is proposed to increase research into climate change and its effects on fish distribution, rising sea temperatures and the industry's contribution to GHGs.

4.4 Cumulative Impacts

Cumulative impacts, combining point impacts over wider areas, are likely to be of more significance in relation to species and habitats of very limited occurrence. This is because these are more prone to overall extinction due to their limited populations or habitat requirements. This could apply to habitats which by definition are of very restricted extent, such as petrifying springs with tufa formation (prone to changes in pH) and turloughs or to species with very small populations in Ireland such as the freshwater pearl mussel, which is critically endangered. Marsh fritillary is another species that is highly prone to local extinctions (often as a result of drainage), the cumulative impact of which can lead to overall negative population effects and local extinctions.

Cumulative impacts will also be more significant for those species for which Ireland is a key area of distribution within Europe. This would apply to the freshwater pearl mussel and the slender naiad.

The majority of potential cumulative impacts are associated with changes in nutrient status, particularly associated with increases in nitrogen in water-dependent systems (e.g. petrifying springs, turloughs) as well as changes in sediment levels acting detrimentally on species such as freshwater pearl mussel. It is considered that the AFS goes a long way to addressing the potential for such impacts, and this, in combination with additional mitigation in relation to phosphates and sedimentation (see Section 5), means that cumulative impacts are unlikely to occur.

4.5 In-Combination Effects

Assessing the possible effects the Agri-Food Strategy may have on Natura 2000 sites (in view of their conservation objectives) in combination with other plans or projects is a key part of the AA process.

The plans and programmes that have been considered are listed in Appendix B to the SEA Environmental Report. Some of these, such as the River Basin Management Plan for Ireland 2018-2021 produced by the then Department of Housing, Planning and Local Government (DHPLG) and Ireland's National Biodiversity Action Plan produced by DCHG (2017) contain environmental protection objectives seeking to benefit Natura 2000 sites that the Agri-Food Strategy supports.

However, certain plans and programmes could potentially have negative impacts on Natura 2000 sites in-combination with the Agri-Food Strategy. These are listed below and have been considered as part of this process:

- **Republic of Ireland**
 - DAFM (2015). National Strategic Plan for Sustainable Aquaculture Development;
 - Department of Communications, Energy and Natural Resources (DCENR) (2014) Offshore Renewable Energy Development Plan;
 - Department of Public Expenditure and Reform (2011) Infrastructure and Capital Investment 2012-2016: Medium Term Exchequer Framework.
 - DCENR (2014) Draft Bioenergy Plan;
 - DAFM (2014) Rural Development Programme 2014-20;
 - DAFM (2015) Forestry Programme for Ireland 2014-2020;
 - Government of Ireland (2018) National Planning Framework; and
 - Fine Gael, Fianna Fail, Green Party (2020) Programme for Government – Our Shared Future.
- **Northern Ireland / UK**
 - Department for the Economy (DfE) (2017) Industrial Strategy for Northern Ireland; and
 - UK Fisheries Bill (in progress).
- **Europe**
 - EC (2020) Farm to Fork Strategy; and
 - EC CAP Strategic Plans (in progress).

It is considered that with mitigation measures in place it is unlikely for there to be significant in-combination effects with any of these plans on Natura 2000 sites or on the qualifying features for which these sites were designated. For example, where intensification or land use pattern may impact on a Natura 2000 site, individual appropriate assessments would be required.

5 MITIGATION

5.1 Mitigation Measures

In general, the AFS provides a well-considered approach to the protection of biodiversity in Ireland and by extension, the reduction in frequency and magnitude of impacts on Natura 2000 sites and species. There is clearly a multiplicity of potential impacts on a wide range of Natura habitats and species arising from agricultural activities (including those from forestry and fisheries). This means that any strategy addressing these potential impacts needs to be broad in scope and to include cross-checking of its various missions, goals and actions. Key areas for mitigation are in relation to the location and extent of Natura 2000 sites (i.e. where these sites lie in proximity to agricultural activities), managing agricultural activities in accordance with national and EU legislative mechanisms, managing diffuse and atmospheric pollution and regulation and management of fisheries. The AFS addresses all these issues in some detail and provides appropriate mechanisms for reducing and counteracting impact pathways. There are a small number of additional measures that would provide further reassurance in terms of mitigation. These are:

- Of overriding importance is the targeting of the most appropriate measures in the most appropriate places. It is imperative that the location of Natura sites is well documented in relation to potential agricultural activities. This would include consideration of potential impact pathways at a catchment level for water bodies (oligotrophic, mesotrophic and dystrophic waters, turloughs) and at a landscape level for flowing water features (in particular, the larger river sites). It would also include consideration of mobile Annex species (particularly birds, mammals (volant and non-volant) and fish) and species that use different parts of a SAC or SPA at different stages of their life cycle (or a combination of Natura habitat and non-Natura habitat). For example, there are many surface waters that are not designated, but that support Annex II/IV fish and mammals and/or Annex I birds.

The baseline survey of all Ireland's farms is a very good start in establishing exactly where biodiversity hotspots lie. However, it should be emphasised that this is particularly important in relation to SACs and SPAs, as these are the key sites at a European level. Therefore, knowing where an individual farm is in relation to a SAC or SPA feature is very important in order to avoid or reduce impacts from agriculture. Targeting of Natura 2000 sites by future agri-environment schemes, especially with higher level measures, also provides a high potential level of mitigation. If Natura sites can be incorporated into these schemes, this would provide a high level of protection (provided management was tailored to the individual site). All this underlines the importance of implementing the most appropriate measures in the most appropriate places with respect to Natura sites.

All policies should first be screened prior to implementation to ensure that they are sufficiently targeted so as to avoid impacts on European sites.

- The strengthening of the implementation of the EIA (Agriculture) Regulations is also important in providing a further level of protection for habitats and species under pressure from agriculture. Any risk/s to any Natura 2000 sites as a result of new agricultural activities or enterprise should be subject to suitable environmental assessment requirements under AA and EIA (Agriculture) criteria. Best practice in this respect could be further extended to include assessment of all agricultural activities. Therefore, all new agricultural activities, changes in agricultural activities or management practice, should be cognisant and compliant

with all relevant environmental legislation. Environmental legislation would include, but not be limited to, AA and EIA Agriculture Regulations.

- Throughout the AFS there is an emphasis on a move towards grass-fed systems, and the use of clover and multi-species swards. Whilst this is beneficial overall and will facilitate a reduction in GHGs and (provided it is managed) nitrogen use, it should not be at the expense of existing high quality (potentially Natura) sites. Again, it is a case of implementing such measures in areas where no significant negative impacts to existing semi-natural (especially Natura) sites could occur. This can be achieved through knowledge of the precise location of Natura sites in relation to farm holdings. The baseline surveys proposed for every farm holding should place particular emphasis on the location of SAC habitats and thereby ensure that these are suitably considered by any agricultural intensification or conversion to grassland systems. This would also apply to conversion to tillage i.e. no conversion of SAC habitats to tillage areas. Such measures could additionally be reinforced through the strengthening implementation of the EIA (Agriculture) Regulations.²
- Relevant studies of direct and indirect impacts should be made available to agri-environment advisors and relevant agricultural workers (including farmers), where Natura 2000 sites are present on a landholding. This should include an appreciation of appropriate buffer zones (e.g. in terms of disturbance effects on Annex II (Habitats Directive) and Annex I (Birds Directive) species. Scientific literature on habitat buffer zones should also be made available (e.g. the hydrological effects of forestry on peatlands). Training in the identification of these habitats will supplement existing in-house measures.
- Disturbance effects on Annex I bird species can be controlled through the avoidance of operations in known areas during the breeding or wintering season. As is the case with other mitigation measures, where gaps are identified, these procedures should be supplemented with training in the identification of Annex I habitats and Annex II/IV species (Habitats Directive) and Annex I species (Birds Directive).
- There should be a firm commitment that the relevant authority in Northern Ireland will be consulted in all cases where transboundary effects could occur. This should apply to all agricultural projects, plans and policies.
- As a matter of good practice, appropriately assessed mitigation should be applied to any unforeseen or uncertain effects of the Strategy.

² The EIA (Agriculture) Regulations can be used in conjunction with, but not supersede Article 6(3) Habitats Directive /S.I. No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011.

6 SUMMARY AND CONCLUSIONS

6.1 Appropriate Assessment Findings

A thorough review of the final AFS has taken place, and all missions, goals and actions were assessed in terms of their potential for impacts on Natura 2000 sites. Missions, goals and actions were reviewed with respect to direct, indirect and cumulative impacts. It was determined that, in general, positive sustainable measures were included with respect to agricultural intensification, diffuse and atmospheric pollution and fisheries. Safeguards and best practice measures, with environmental good and sustainability at its core, means that the majority of impacts from the AFS should be avoided. A key recommendation is that the location and extent of Natura 2000 habitats and species (including appropriate buffer zones) should be taken into account throughout the AFS. It is suggested that these sites should form an important consideration in any future agri-environment scheme, as well as receiving protection through strengthened implementation of EIA (Agriculture) Regulations. This is particularly important for Natura 2000 species and habitats of restricted distribution, of particular sensitivity or for which Ireland is a key European stronghold. An all-Ireland baseline survey of farms, focusing particularly on farms with Natura 2000 habitats is integral to this process. Where data gaps exist, either in terms of the known distribution of Natura 2000 habitats and species, or in the knowledge of field staff, these should be addressed through relevant education programmes in identification and assessment of habitats and species. Recommendations are also made with respect to the move towards grass-fed systems.

6.2 Conclusion

The likely impacts to the integrity of the Natura 2000 network that could arise from the missions, goals and actions proposed in the final AFS have been examined. The implementation of the measures in the final AFS will not have any significant adverse effects upon the integrity of any Natura 2000 site provided the mitigation identified in Section 5 is implemented.

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APPENDIX A: CONSULTATION RESPONSE FROM NPWS



**An Roinn Turasóireachta, Cultúir,
Ealaíon, Gaeltachta, Spóirt agus Meán**
Department of Tourism, Culture,
Arts, Gaeltacht, Sport and Media

Our Ref: **G Pre00189/2020**

(Please quote in all related correspondence)

09/11/20

Unit 10D
Cefn Llan Science Park,
Aberystwyth,
Ceredigion
SY23 3AH

Via email: REdwards@rsk.co.uk

Re: Appropriate Assessment screening assessment for the Ireland Agri-Food Strategy 2030

A chara

I refer to correspondence to the Department of Culture, Heritage and the Gaeltacht received in connection with the above.

Outlined below are heritage-related observations/recommendations co-ordinated by the Development Applications Unit under the stated heading(s).

Nature Conservation

The following observations are made by the Department in its role as the authority with overarching responsibility for nature conservation and the Nature Directives (i.e. the Birds and Habitats Directives). The observations are offered to assist the Department of Agriculture, Food and the Marine in meeting obligations and commitments in relation to nature conservation, European sites, biodiversity and environmental protection generally. The Department welcomes the opportunity to input to this process.

The Department notes that the screening assessment set out in the *Appropriate Assessment Screening Statement* has concluded that the Agri-Food Strategy to 2030 is likely to have a significant effect on Natura 2000 sites and therefore requires Appropriate Assessment. The Department concurs with this conclusion.

General Comments in relation to biodiversity and the Agri-Food Strategy to 2030

The Department is of the view that the Draft Strategy should clearly identify the environmental context within which agriculture and the food sector operates with particular reference to the current climate and biodiversity crises. Protecting and restoring biodiversity

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is vital for our future because, among other things, it underpins food production and the marine; and it will play a vital role in climate mitigation and adaptation. We know that we are losing biodiversity at an unprecedented rate and our most recent national reporting on the status of habitats and species, as part of our obligations in relation to the Nature Directives, has identified agriculture as an important driver of biodiversity loss. The appropriate assessment screening report clearly articulates this position.

There is an urgent need therefore for the emerging Agri-Food Strategy to provide for the protection and restoration of biodiversity as a core part of future planning. The EU 2030 Biodiversity Strategy (*Bringing nature back into our lives*) sets ambitious goals to protect and restore biodiversity and will provide an enabling framework to drive transformative change. The EU Strategy, which also supports the ambitions set out in the National Biodiversity Plan, will work in tandem with the new *Farm to Fork Strategy* and the new Common Agricultural Policy (CAP), for example by promoting results-based payment schemes. The Department is of the view that farmers who deliver for biodiversity should be supported by the CAP and the Draft Agri-Food Strategy should acknowledge the importance of such measures for the sector. The most immediate focus for biodiversity action in Ireland is the protection and restoration of the Natura 2000 network and the agricultural sector has a key role to play in achieving positive outcomes in this regard. The protection and restoration of biodiversity will in turn deliver key long-term benefits to the sector in terms of its sustainability.

The Agri-Food Strategy to 2030 should be developed to integrate biodiversity considerations in a positive, proactive and precautionary way, and this should be reflected in the text and content of the strategy, including its aims, objectives and policies. The relationship between the Agri-Food Strategy to 2030 and any existing sectoral plans and strategies (e.g. CAP Strategic Plan) should be clarified. Inter-relationships with any other overlapping or related plans should be examined, clarified and taken into account particular in relation to the requirement to assess plans in-combination with other plans and projects (e.g. Regional Spatial and Economic Strategies, City and County Development Plans, River Basin Management Plans, Forestry Plans etc).

Plans such as the Agri-Food Strategy to 2030 may significantly affect biodiversity and nature conservation, in a number of ways, depending on the measures to be included within the Strategy and the methods of implementation. It should be considered whether the Strategy will give rise to some or all of the impacts and effects listed below. This is not an exhaustive list and additional effects may arise that will need to be considered in the assessments required.

- Permanent and/or temporary habitat loss
- Permanent and/or temporary habitat fragmentation
- Habitat deterioration



- Habitat fragmentation and isolation
- Vegetation or community changes (e.g. from land use change as well as direct changes to the environment, e.g. through emissions to air and water, fertilisation, lighting *etc.*)
- Changes to soil nutrient status
- Changes to physical structure of habitats (e.g. creeks and pans in salt meadows)
- Disturbance or damage to breeding, roosting, feeding areas
- Changes to distribution of species
- Introduction or expansion of barriers to movement, dispersal, migration
- Introduction or increase of collision risk
- Changes to water quality, such as eutrophication, sedimentation *etc.*
- Changes to natural processes of sedimentation and erosion
- Changes to drainage, hydrology, hydromorphology, sub-surface flows, flooding regimes *etc.*
- Changes to ecosystem services and functions, such as pollination, water attenuation and flood mitigation, climate change mitigation and adaption (such as carbon storage and sinks *etc.*)
- Introduction or spread of invasive species.

The Agri-Food Strategy should be framed with the need to facilitate biodiversity protection and restoration and to avoid any further biodiversity losses. Strong and effective environmental protection policies, objectives and actions should be included in the Strategy. These policies, objectives and actions should incorporate the requirements of the Nature Directives, national legislation and the National Biodiversity Action Plan 2017-2021, and reflect the levels of protection necessary to: i) protect and restore nature conservation sites, ii) maintain or restore the favourable conservation status of natural habitats and protected species of conservation concern, and iii) achieve the conservation and restoration of biodiversity in the wider countryside. The Strategy should reflect and be consistent with Ireland's obligations regarding the Natura 2000 network, national nature conservation sites, and biodiversity generally.

The effective implementation of the Agri-Food Strategy will require early and strategic consideration of the ecological and environmental implications of individual plans, programmes and projects which flow from it. In addition to the future environmental assessments which will be required in relation to downstream plans and projects, the Strategy should set out a framework to ensure that environmental assessment of associated plans and projects happens at the earliest opportunity. In particular the Agri-Food Strategy should set out mechanisms to assist the assessment of cumulative or in combination impacts that could arise.



Specific comments on the *Appropriate Assessment Screening Statement*

The information presented in the screening report in relation to the Natura 2000 network in Ireland provides a good account of the habitat and species resources contained within the Network and its current conservation status. Much of the information presented in Section 3 of the report appears to be derived from the Habitats Directive 2019 Article 17 assessment and the Birds Directive Article 12 2019 assessment, and should be clearly identified as such. In this Section the Draft Prioritised Action Framework (PAF) 2021-2027, which has been the subject of a recent public consultation, should be referenced together with the PAF 2014-2020. There appears to be some conflict in the data presented in Tables 3 and 4 with data contained in the Draft PAF in relation to the number of sites selected for specific habitat or species features. This should be reviewed.

The screening assessment identifies (Section 3.5) the qualifying interests and special conservation interests of Natura 2000 sites which are likely to be affected by agricultural activity now or in the future. It does not however go on to identify the Natura 2000 sites on which the Strategy will have a likely significant effect. This task needs to be completed to enable the next stage in the process (i.e. appropriate assessment) to focus assessment on these sites. In this regard the Department notes that Regulation 42(1) of the European Communities (Birds and Natural Habitats) Regulations, 2011 requires screening for appropriate assessment to “assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site”.

The screening assessment in Section 4 identifies the current pressures and threats driving biodiversity loss in Ireland in the context of the Natura 2000 network and the Strategy. The Department is of the view that this takes on board the main scientific evidence in its assessments and conclusions.

The next stage in this process will be the preparation of the Draft Strategy together with the NIS and the SEA Environmental Report. The NIS should be prepared taking into account the following: matters:

- Trends, baseline data, and current conservation status of the European sites being assessed,
- The conservation objectives for the sites concerned,
- The pathways which may give rise to potential impacts, taking into account current information on the drivers of agricultural impacts on biodiversity



- An examination of the potential impacts, in order to predict (ecological) effects and assess their significance, in view of the conservation objectives and in light of the best scientific knowledge in the field,
- Carefully designed mitigation measures (where required) in order to avoid and reduce impacts to a level where they will no longer adversely affect site integrity
- Ensuring certainty with regard to the efficacy of any mitigation measures proposed
- Providing clarity in relation to detail, delivery, implementation, and timelines for implantation of proposed mitigation measures.

The SEA process should focus on the potential for negative impacts to arise both within and beyond the Natura 2000 network more broadly and should propose mitigation measures to avoid and reduce such impacts to the greatest possible extent.

Final Comments

The Department would welcome an opportunity to meet with the Department of Agriculture, Food and the Marine in relation to the development of the Draft Strategy and the environmental assessment processes which are currently being undertaken.

You are requested to send further communications to the Development Applications Unit (DAU) at manager.dau@chg.gov.ie, or to the following address:

The Manager
Development Applications Unit (DAU)
Government Offices
Newtown Road
Wexford
Y35 AP90

Is mise, le meas

A handwritten signature in blue ink, appearing to read 'J Lyons', is positioned above a horizontal line.

Joanne Lyons
Development Applications Unit