



FOOD WISE

2025

Natura Impact Statement

FOOD WISE 2025

Natura Impact Statement

Prepared on behalf of

The Department of Agriculture, Food and the Marine

This report has been prepared by Philip Farrelly & Co Limited with all reasonable skill, care and diligence within the terms of the Contract with the client and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility to whatsoever third parties to whom this report, or part thereof, is made known. Any such party relies on the report at their own risk.

November 2015

Philip Farrelly & Co Limited

Unit 5A, Fingal Bay Business Park, Balbriggan, Co. Dublin

In association with

Scott Cawley Ltd

College House, Rock Road, Blackrock, Co. Dublin

CONTENTS

1	INTRODUCTION	4
1.1	Regulatory context	4
1.2	Appropriate Assessment: Purpose and Process	5
1.3	Overlap with the Strategic Environmental Assessment of the Plan.	6
1.4	Consultation Plan	6
2	ASSESSMENT METHODOLOGY	8
2.1	Statement of Authority	8
2.2	Formal Guidance.....	8
2.3	“Best Scientific Data” and “Objective Scientific Information”	9
3	OVERVIEW OF THE DRAFT <i>Food Wise 2025</i>	10
3.1	Level of detail provided in <i>Food Wise 2025</i>	10
3.1.1	Relationship between the proposed Plan and other Plans and Programmes in the Agriculture Sector	10
4	OVERVIEW OF THE “RECEIVING ENVIRONMENT”	11
4.1	Natura 2000 sites in Ireland	11
4.2	Natura 2000 network and Agriculture	13
4.3	Habitats, Species and Bird vulnerable to Agricultural Impacts: Threats and Pressures .	14
4.4	Conservation status of Habitats and Species	17
4.5	Contribution of Agriculture to Conservation Status	20
4.6	Other Environmental Parameters.....	21
4.6.1	Water.....	21
4.6.2	Air.....	23
4.6.3	Soil.....	25
4.7	Site integrity and Conservation Objectives	26
4.8	Scoping the Assessment.....	30
4.9	Existing Plans and Programmes to take into account	30
4.9.1	Common Agricultural Policy.....	31
4.9.2	EU Biodiversity Strategy to 2020.....	32
4.9.3	Water Framework Directive.....	33
4.9.4	National Biodiversity Plan 2011-2016.....	33
4.9.5	Prioritised Action Framework for Natura 2000	34
4.9.6	Programme of Measures Re Case C418/04 “the Birds Case”	34
4.9.7	Rural Development Plan 2014-2020	35
4.9.8	National Peatlands Strategy.....	36
4.9.9	All-Ireland Pollinator Plan 2015-2020	37
4.9.10	Ireland’s Forestry Programme 2014-2020.....	38
4.9.11	Seafood Development Programme (Draft)	39
4.9.12	National Strategic Plan for Sustainable Aquaculture 2014-2020.....	39
4.9.13	Commonage Framework Plans.....	41
4.9.14	Basic Farm Payment Scheme	41
4.9.15	GLAS.....	41
4.9.16	EU Areas of Natural Constraint Scheme	44
4.9.17	Targeted Agricultural Modernisation Schemes II (TAMS II)	44
5	IDENTIFICATION AND ASSESSMENT OF POTENTIAL IMPACTS OF AGRIFOOD 2025.....	45

5.1	Approach to Assessment.....	45
5.2	Summary of Potential Impacts	45
6	SAFEGUARDS AND MITIGATION MEASURES THAT WILL APPLY TO POTENTIAL ADVERSE IMPACTS	47
6.1	Statutory Management Requirements	47
6.2	Green, Low Carbon Agri Environment Scheme (GLAS)	48
6.3	AA Screening of Licencing and Permitting in the Forestry and Seafood Sectors	49
6.4	Risk Assessments for activities in the Aquaculture Sector	51
7	IN-COMBINATION IMPACTS	52
8	RECOMMENDATIONS OF THE ENVIRONMENTAL REPORT THAT OVERLAP WITH THE NATURA IMPACT STATEMENT.	54
	The Non-technical summary of the Environmental Report states the following precis of the results of the assessment of potential impacts on biodiversity, flora and fauna:	54
9	MONITORING	56
10	CONCLUSION	58
	Key References.....	59
	Appendix A: ACTIVITIES THAT HAVE POTENTIAL TO IMPACT ON SPECIAL AREAS OF CONSERVATION (SAC)	61
	Appendix B: Prediction and Assessment of Potential Impacts of <i>Food Wise 2025</i>	78

1 INTRODUCTION

1.1 Regulatory context

This Natura Impact Statement (NIS) was prepared by Philip Farrelly & Co Ltd. in association with Scott Cawley Ltd. for the Department of Agriculture, Food and the Marine (DAFM). It provides information on and assesses the potential for the proposed *Food Wise 2025* (the “Plan”) to have adverse effects on the integrity of sites of European-scale ecological importance. This is the final version of the NIS and is published alongside the adopted *Food Wise 2025* and serves as a documented record of the assessment of the Plan throughout its preparation.

The responsibility for carrying out the Assessment lies with DAFM and this NIS facilitates the AA by DAFM. DAFM’s AA decision at the adoption of the Plan will be published alongside the adopted Plan as it marks the conclusion of the AA process.

The preparation of the Plan has regard to Article 6 of the Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the Habitats Directive). This is transposed in Ireland by the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477) (hereafter referred to as the Birds and Habitats Regulations) and Part XAB of the Planning and Development (Amendment) Act 2010. Since the Plan is not covered by the Planning Acts it falls under the remit of the Birds and Habitats Regulations.

Article 6(2) of the Habitats Directive sets out the requirements of Member States, that within European sites, they maintain and restore those habitats and/or species that a site has been designated to favourable conservation status, and avoid damaging activities that could significantly disturb species or lead to deterioration of their habitats or habitat types:

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

Articles 6(3) and 6(4) of the Habitats Directive set out the requirement for an assessment of proposed plans and projects likely to affect Natura 2000 sites (Annex 1.1).

Article 6(3) establishes the requirement to screen all plans and projects and to carry out a further assessment if required (Appropriate Assessment (AA)):

Article 6(3): *“Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to an appropriate assessment of its implications for the site in view of the site’s conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”*

The subsequent paragraph allows proposed plans and projects to be approved in certain conditions.

Article 6(4): *“If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of the Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to the beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.”*

This Natura Impact Statement has informed the Appropriate Assessment process for the *Food Wise 2025*.

1.2 Appropriate Assessment: Purpose and Process

Industry sectoral groups, representative of the stakeholders involved in this area have prepared the Plan under the coordination of DAFM. This Plan sets out the underlying trends and projections of how the sectors are expected to change in the period up to 2025.

All such strategies, such as the Plan, must be prepared and examined to ensure that there will not be any adverse effects on the integrity of sites that are designated for their special habitats and wildlife. These particular sites are regarded to be of European importance and are part of the European Commission’s Natura 2000 network of sites. They are termed candidate Special Areas of Conservation (SAC) under the E.C. Habitats Directive and Special Protection Areas (SPA) under the E.C. Birds Directive. The Irish Government has a legal obligation to protect these sites.

The process of assessing the Plan was a structured exercise with a series of steps. The overall purpose of the process was to ensure that the Plan, when implemented, does not result in adverse effects on the “integrity” of the European sites within the Natura 2000 network. The overall process is termed “Appropriate Assessment”.

The first step was to look at the overall Plan in principle and to answer the questions: is it likely that the implementation of this Plan could result in likely significant effects on the European sites within the Natura 2000 network? It does not matter where these sites may be – impacts can occur across administrative boundaries. This step is known as “Screening” and is required by Part 5 Section 42(2) of the Bird and Habitats Regulations. The Screening Stage was carried out prior to the drafting of the Plan and a Screening Report and Determination has been published alongside the Plan.

If the screening stage results in a judgement that likely significant effect may occur or cannot be ruled out, then a more detailed AA is required. Whilst the structure of this assessment process is not specified in the legislation, there are guidance documents that are used to provide an indication of how this assessment may be carried out.

In order to ensure that the Plan complied fully with the requirements of Article 6 of the Habitats Directive and all relevant Irish transposing legislation, the AA consulting team, on behalf of DAFM carried out the screening of the Plan in principle, to see if it required an AA. The Screening determination recorded this decision.

The outcome of this Screening Stage was that it was determined that due to the close relationship between the agriculture sector and the natural environment, that likely significant effects could

not be ruled out and that the Plan would need further assessment. The process then proceeded to a full Appropriate Assessment.

An Appropriate Assessment involved analysing the relationship between the proposed elements of the Plan and the sensitivities of the European sites. Due to the national scale and strategic nature of the Plan, there were few examples whereby the projections and aspirations of each sector could be interpreted into tangible impacts on the conservation objectives for European sites. However where there was the potential for an impact to occur, then the assessment team provided advice to avoid or mitigate the potential impact.

Best practice in mitigation follows a hierarchy i.e. avoidance of impacts by removing policies/objectives, followed by caveats/changes to policies/objectives to mitigate any likely significant impacts. The AA consulting team provided the Sectoral working groups with a **Policy Guidance Note** which advised them the cause-effect relationship between agriculture and ecological receptors and also noted the habitats and species that were vulnerable to the effects of agriculture.

DAFM provided the AA consulting team with draft text during their process of preparing the Plan. The entire Plan as a whole, as well as individual actions propose within it was subjected to the assessment process although it was identified at several stages that some elements of the Plan could be more easily linked to potential impacts on European sites than others.

The Plan and accompanying documentation was published as “Food Wise 2025” for a period of public consultation for 8 weeks ending 28th August 2015. All submissions were be scrutinised by the AA team and DAFM was alerted as to any submissions that may have implications for European sites. This version of the NIS has addressed the submissions as far as reasonably possible within the overall scope and purpose of the Plan and the AA process. Where changes to the NIS were made directly as a result of submissions received then this has been highlighted.

1.3 Overlap with the Strategic Environmental Assessment of the Plan.

The Strategic Environmental Assessment (SEA) of the Plan was carried out concurrently with the AA. There were several areas of overlap and in accordance with good practice. The communications that overlapped included the following:

- Clarification of technical aspects of agricultural practice;
- Sharing of predictions of ecological effects;
- Sharing of mapping and data on European sites and potential sensitivities and threats
- Sharing of data on existing safeguards in agricultural practice.

Reviews of the sections of the Draft Plan were sent to the SEA Team for their integration into their assessment. Following the period of public consultation the Environmental Report was re-reviewed and certain commitments made in the ER have been cross-referenced in the NIS and vice versa.

1.4 Consultation Plan

DAFM received consultation responses at a pre-Draft Stage from the Department of Arts, Heritage and the Gaeltacht on 7th May 2015. The AA Screening stage and the AA of the Plan has taken full account of these observations. The AA has also taken account of comments made by DAHG on other plans and programmes in the same sector including the Rural Development Programme, Seafood, CAP reform and biodiversity and the Native Woodland Scheme.

Under Part 5, Section 42 (9c) and (10) of the Birds and Habitats Regulations, the NIS was sent to the Minister for Arts, Heritage and the Gaeltacht not later than 6 weeks before the Draft Plan was to be proposed to be adopted. DAFM will not adopt the Plan until these six weeks have elapsed and will take account of any submissions from the Minister.

2 ASSESSMENT METHODOLOGY

2.1 Statement of Authority

The preparation of the Natura Impact Statement was carried out by Paul Scott and Ashling Cronin of Scott Cawley Ltd and they were part of the overall Environmental Analysis team.

Paul Scott is Director with Scott Cawley Ltd. Paul holds a first class honours degree in Environmental Biology from the University of Liverpool and a Masters in Pollution and Environmental Control at the University of Manchester. He is a Chartered Environmentalist (CEnv) with the Society for the Environment (Soc Env) and a Full Member of the CIEEM. He is an experienced environmental scientist, specialising in impact assessment and ecology. He has experience in a wide variety of environmental assessment and management projects and also has acted as a member of environmental assessment Expert Panels. Paul has prepared guidance on Strategic Environmental Assessment and Environmental Impact Assessment to UK and Irish central government and local authorities. Paul has prepared ecological guidance notes designed for planners and developers on behalf of the four Dublin local authorities. Paul has been involved in several Appropriate Assessments of complex projects and land-use plans including the Cherrywood SDZ, Meath County Development Plan, Draft Ennis Local area Plan, East Meath Local Area Plan and variations to the Meath, Dublin and Kildare Development Plans. Paul developed a review package for Appropriate Assessment as part of the EPA STRIVE funded project Integrated Biodiversity Impact Assessment. He lectures on EIA and Appropriate Assessment practice at University College Dublin, Trinity College Dublin and NUI Galway.

Ashling Cronin holds an honours degree in Applied Ecology, and a first class honours Master's degree in Ecological Assessment from University College Cork. She is a Graduate Member of the CIEEM. Ashling has experience in the survey and assessment of a range of habitats and species including: Phase I habitat survey and mapping (including Annex I habitats), mammal surveys (including bats, badgers, and otters), bird and ground beetle surveys and impact assessment. She has conducted river corridor habitat surveys including assessment of fisheries potential, and is experienced in biological and physiochemical water quality monitoring. She also has experience of Strategic Environmental Assessment (SEA) and Appropriate Assessment having conducted research in collaboration with the Environmental Protection Agency and was involved in the production of the SEA Process Checklist (EPA, 2008).

2.2 Formal Guidance

The AA process has taken account of guidance contained in the following documents:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision).
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPW 1/10 & PSSP 2/10.
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission Environment Directorate-General, 2001); hereafter referred to as the EC Article 6 Guidance Document. The guidance within this document provides a non-mandatory methodology for carrying out assessments required under Article 6(3) and (4) of the Habitats Directive.
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (EC Environment Directorate-General, 2000); hereafter referred to as MN2000.

- *Guidance Document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the Concepts of Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence.* Opinion of the European Commission (European Commission, January 2007).
- *Guidelines for Good Practice Appropriate Assessment of Plans Under Article 6(3) Habitats Directive* (International Workshop on Assessment of Plans under the Habitats Directive, 2011)

2.3 “Best Scientific Data” and “Objective Scientific Information”

Section 42 (1) states that the AA screening stage should be based on the “best scientific data” and further paragraphs refer to the collection of scientific evidence as well as the Natura Impact Statement for the purposes of the AA.

It was acknowledged that since the *Food Wise 2025* is a strategic measure with a distinct lack of objective targets, spatial reference and tangible outputs, not only was the impact prediction going to be lacking a similar level of objectivity but the data being used to make the judgements was also going to be rather subjective and open to interpretation. The scientific data used to inform the assessment has included the following sources:

- Ordnance Survey of Ireland mapping www.osi.ie;
- Online data available on European sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie;
- Information on water quality from www.epa.ie;
- Information on River Basin Districts from www.wfdireland.ie;
- Information on soils, geology and hydrogeology available from www.gsi.ie;
- Information on the status of EU protected habitats in Ireland (National Parks & Wildlife Service, 2013a and 2013b);
- Information on the conservation status of birds in Ireland (Colhoun & Cummins, 2014);
- Format for a Prioritised Action Framework (PAF) for Natura 2000 (2014) <http://www.npws.ie/sites/default/files/general/PAF-IE-2014.pdf>
- DAHG (2011a). Actions for Biodiversity 2011-2016; Ireland's National Biodiversity Plan. Department of Arts, Heritage and the Gaeltacht: Ireland. <http://www.ahg.gov.ie/en/Publications/HeritagePublications/NatureConservationPublications/Actions%20for%20Biodiversity%202011%20-%202016.pdf>
- National Summary for Article 12 (National Parks & Wildlife Service, (2013c) https://circabc.europa.eu/sd/a/a211d525-ff4d-44f5-a360-e82c6b4d3367/IE_A12NatSum_20141031.pdf

It was the opinion of the AA team that the repetition of tables, facts and figures contained in other relevant Plan-AAs (e.g. Seafood Development Programme) was not necessary as part of the AA of the Plan. Since the proposed actions themselves were rather aspirational visions rather than tangible, quantifiable targets it was also felt that modelling the effects in objective terms would be excessive and or/unhelpful to understanding the nature of any potential impacts.

3 OVERVIEW OF THE DRAFT *Food Wise 2025*

3.1 Level of detail provided in *Food Wise 2025*

Food Wise 2025 is to be applied at the national-scale and will be used to provide support for subsequent plans and programmes in each of the industry sectors. As such, it provides flexibility in how the projections can be interpreted and as one descends through the hierarchy of implementing the Plan through each sector, the level of clarity and certainty as to how the projections will be implemented at the local scale, will become more detailed.

So whilst it is good practice in appropriate assessment to identify all the potential effects on the European sites at the level at which the Plan sits, this is not practical at a strategic stage, except in generic terms. Therefore it has been important to clearly set out how the potential effects will be dealt with at the next stage of programme and measures to ensure that the effects on European sites are mitigated.

3.1.1 Relationship between the proposed Plan and other Plans and Programmes in the Agriculture Sector

The Plan is a non-statutory proposal that sits at a high level in terms of the range of policies, plans and programmes that may influence the agriculture sector in Ireland. Above it is the overarching Common Agricultural Policy which applies across Europe. This is implemented in Ireland by the Rural Development Programme and the various sectoral plans and programmes which set out the basis for the development for individual sectors and how they are managed (e.g. Seafood Development Programme) as well as by the Basic Payment Scheme. The Plan is seen to be complementary to the RDP and takes into account the measures proposed within the RDP.

The Plan provides a series of recommended actions that will be followed by the industry to achieve projected changes in the individual sectors. Since some of the other sectoral development plans and programmes are in some cases, also in the process of being drafted or being finalised, it is important to ensure that the Plan is cognisant of these other plans. In terms of the Appropriate Assessment, several of these other plans and programmes have undergone assessment including the following:

- Ireland's Forestry Programme 2014-2020;
- Rural Development Plan 2014-2020; and
- Seafood Development Programme (Draft) 2014-2020.

In the hierarchy of sectoral plans and programmes, the above are all set at the national level and do not transpose easily into Regional, County or Local-scale changes that are easier to address in an environmental assessment context. Nevertheless the Plan will propose changes to agricultural that are measurable at the local level and may drive investment and opportunities in certain areas and sectors.

4 OVERVIEW OF THE “RECEIVING ENVIRONMENT”

4.1 Natura 2000 sites in Ireland

The Natura 2000 network is a series of areas designated for ecological importance. There are two types of European sites in Ireland: Special Areas of Conservation (cSACs) and Special Protection Areas (SPA).

- Special Areas of Conservation cSAC: The legal basis for their designation is the EC Habitats Directive¹. These sites are designated on the presence of specific habitats or species (referred to as Qualifying Interests). There are 59 habitat types listed in Annex 1 of the Directive which occur in Ireland of which 16 are “priority habitats” and are recognised at being most vulnerable. 26 species are listed in Annex 2 of the Habitats Directive which occur in Ireland. This list covers a wide range of ecological features ranging from types of woodland, grassland and heath to river vegetation and coastal habitats. Species that are protected under the Directive that reside in Ireland include animals such as Otter, White Clawed Crayfish, bats, dolphin and whales. There are 430 SACs in the Republic of Ireland.
- Special Protection Areas SPA: The EC Birds Directive² brought about the designation of these areas. A wide range of bird species and their habitats that they use are afforded protection. There are 154 SPAs in the Republic of Ireland.

The density of European sites in Ireland is higher in Galway, Donegal and Mayo where Annex habitats such as blanket bogs, semi-natural grasslands and high-quality water dependent habitats are located. In Wicklow, Waterford, Carlow and in the south east of Ireland the Natura 2000 sites are concentrated along major river catchments and along the coast.

¹ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. 1. 2007.
http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

² Council Directive 2009/147/EC on the conservation of wild birds, codified version of Directive 79/409/EEC.
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:020:0007:0025:EN:PDF>

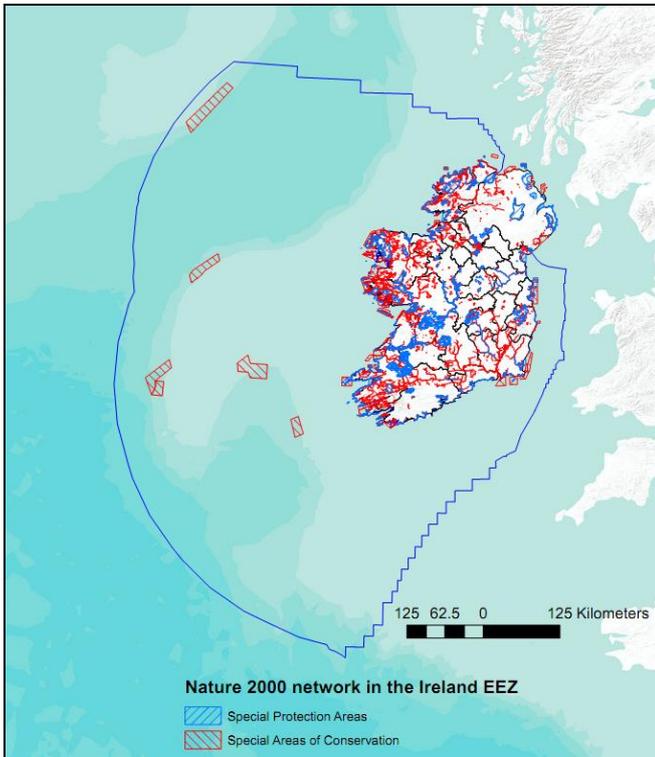


Figure 1: Map of Natura 2000 network in Ireland showing extent of offshore Special Areas of Conservation

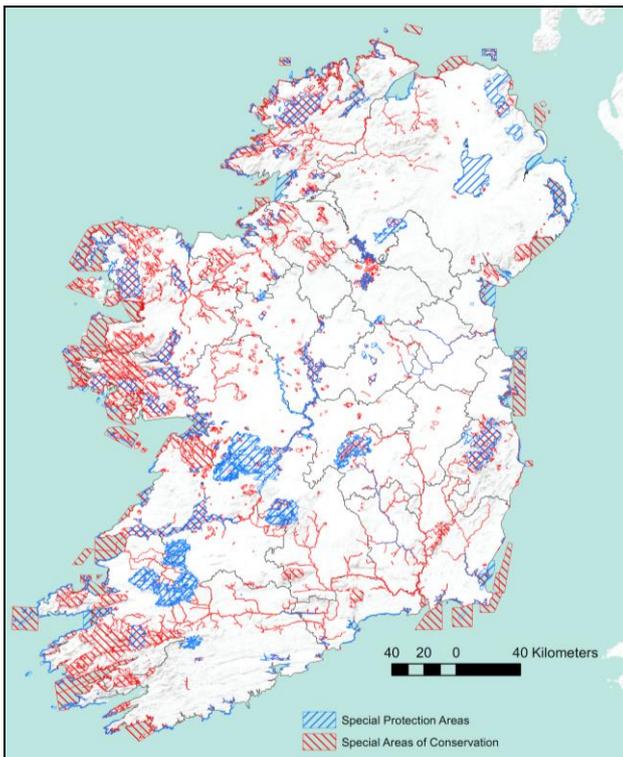


Figure 2: "Inshore" Natura 2000 network in Ireland (including Northern Ireland)

4.2 Natura 2000 network and Agriculture

The focus of the assessment as stated earlier, is on the European Commission's Natura 2000 network of sites across Ireland which include terrestrial and aquatic (including marine) areas. Agricultural activities take place within and around these areas and most are intrinsically linked with the natural resources and therefore the biodiversity provided in these areas.

The Natura 2000 network of sites is hereafter referred to as "European Sites" in accordance with the relevant legislation under which this assessment is being undertaken³.

Agriculture has been dependent on biodiversity and vice-versa over centuries range of farming practices on land and in the water, creating the patchwork of habitat types across the island of Ireland that we see today. In fact many of the habitat types we now strive to protect today were created and are maintained by certain agricultural practices. Low-intensity agriculture that are adapted to local conditions are often more likely to maintain biodiversity than rapid intensification and/or land abandonment. It is the rise of the latter trend of agricultural practice in the last 50 years that has seen a parallel decline in biodiversity in our land and seas.

The positive role of agriculture for European sites is reflected in the fact that farmland makes up around 40% of the total area included in European sites across the whole of the European Union⁴. High biodiversity value is usually closely associated with low agricultural productivity and therefore the majority of farmland in European Sites is located in marginal, less productive land such as wet and dry heath, wet grasslands and peatlands. More intensively-managed land is often not designated within European sites but may provide a supporting role to such sites nearby, for example dairy pasture provides valuable feeding resources for Lesser Horseshoe bats in the west of Ireland and similarly, Whooper Swan, Light-bellied Brent Geese and Greenland White-fronted Geese both use cereal crops and improved agricultural grassland for feeding when moving between European sites during migration. In Ireland, the types of habitats there are regarded to be reliant on a type of agricultural management are as follows (* denote priority habitat types):

- *Fixed coastal dunes with herbaceous vegetation (grey dunes)
- Machairs (* in Ireland)
- European dry heaths
- Alpine and Boreal heaths
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*
- Alkaline fens
- *Limestone pavements

Whilst agriculture is an important facilitator for biodiversity and conservation in certain respects, it relies on using natural resources including water, nutrients and the biomass itself. When this system is managed at unsustainable levels then habitat and species loss/deterioration will occur and biodiversity reduced. One of the key objectives of the EC Habitats and Birds Directives to maintain and restore the biodiversity value of specific habitats

³ European Communities (Birds and Natural Habitats) Regulations 2011 SI 477 of 2011.

⁴ European Commission (2013) Farming for Natura 2000 - Guidance on how to integrate Natura 2000 conservation objectives into farming practices, based on Member States good practice experiences

and species and the purpose of the assessment of *Food Wise 2025* is to ensure that the Plan will not create an unsustainable scenario of agriculture in Ireland.

In order to determine if the Plan will have an effect on the “integrity” of the European sites⁵ within its zone of influence, it is necessary to present a summary of the current condition of habitats and species and to highlight threats and pressures upon. This will allow the assessment to consider the potential impact in terms of how vulnerable these habitats and species may be to agricultural impacts.

4.3 Habitats, Species and Bird vulnerable to Agricultural Impacts: Threats and Pressures

Reporting requirements inherent in the EC Habitats and Birds Directives includes identifying threats and pressures to the habitats and species and using standard criteria. A threat is defined as “*Activity expected to have an impact on a species/habitat type in the future.*”⁶ whilst a pressure is defined as “*Activity impacting a species/habitat type during the reporting cycle.*”.

Agriculture as a generic activity is broken down into the following categories of pressures and threats as follows (upper category is in bold for ease of reference) :

Code	Description corrected
A	AGRICULTURE
A01	Agricultural cultivation
A02	Modification of cultivation practices
A02.01	agricultural intensification
A02.02	crop change
A02.03	grassland removal for arable land
A03	Mowing or cutting grasslands
A03.01	intensive mowing or intensification
A03.02	non intensive mowing
A03.03	abandonment / lack of mowing
A04	Grazing by livestock
A04.01	intensive grazing
A04.01.01	intensive cattle grazing
A04.01.02	intensive sheep grazing
A04.01.03	intensive horse grazing
A04.01.04	intensive goat grazing
A04.01.05	intensive mixed animal grazing
A04.02	non intensive grazing
A04.02.01	non intensive cattle grazing
A04.02.02	non intensive sheep grazing
A04.02.03	non intensive horse grazing
A04.02.04	non intensive goat grazing
A04.02.05	non intensive mixed animal grazing

⁵ Article 6(3) of the EC Habitats Directive requires that the appropriate assessment is undertaken to determine if the plan or project will “*adversely affect the integrity of the site concerned*”.

⁶ Assessment and reporting under Article 17 of the Habitats Directive Explanatory Notes & Guidelines for the period 2007-2012 <https://circabc.europa.eu/sd/d/2c12cea2-f827-4bdb-bb56-3731c9fd8b40/Art17%20-%20Guidelines-final.pdf>

Code	Description corrected
A04.03	abandonment of pastoral systems, lack of grazing
A05	Farming and breeding of livestock
A05.01	Animal breeding,
A05.02	stock feeding
A05.03	Lack of animal breeding
A06	Crops of annuals & perennials (non-timber)
A06.01	annual crops for food production
A06.01.01	intensive annual crops for food production/ intensification
A06.01.02	non- intensive annual crops for food production
A06.02	perennial non-timber crops
A06.02.01	intensive perennial non-timber crops/intensification
A06.02.02	non-intensive perennial non-timber crops
A06.03	biofuel-production
A06.04	abandonment of crop production
A07	Use of 'pesticides' in agriculture
A08	Fertilisation in agriculture
A09	Irrigation in agriculture
A10	Restructuring agricultural parcels
A10.01	removal of hedges and copses or scrub
A10.02	removal of stone walls and embankments
A11	Other agriculture activities
B	FORESTRY
B01	Afforestation
B01.01	forest planting on open ground (native trees)
B01.02	artificial planting on open ground (non-native trees)
B02	Forest and plantation management & use
B02.01	forest replanting
B02.01.01	forest replanting (native trees)
B02.01.02	forest replanting (non native trees)
B02.02	forestry clearance
B02.03	removal of forest undergrowth
B02.04	removal of dead and dying trees
B02.05	non- intensive timber production (leaving dead wood/ old trees untouched)
B02.06	thinning of tree layer
B03	Forest exploitation
B04	Use of 'pesticides' (forestry)
B05	Use of fertilizers (forestry)
B06	Grazing in forests & woodland
B07	Other forestry activities
F	Use of living resources (other than agriculture & forestry)
F01	Marine and freshwater aquaculture
F01.01	intensive fish farming, intensification
F01.02	suspension culture
F01.03	bottom culture

Code	Description corrected
F02	Fishing and harvesting aquatic resources
F02.01	Professional passive fishing
F02.01.01	potting
F02.01.02	netting
F02.01.03	demersal longlining
F02.01.04	pelagic longlining
F02.02	Professional active fishing
F02.02.01	benthic or demersal trawling
F02.02.02	pelagic trawling
F02.02.03	demersal seining
F02.02.04	purse seining
F02.02.05	benthic dredging
H	Pollution
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)
H01.05	diffuse pollution to surface waters due to agricultural and forestry activities
H02	Pollution to groundwater
H02.06	diffuse groundwater pollution due to agricultural and forestry activities
H03	Pollution to marine waters
H03.01	oil spills in the sea
H03.02	toxic chemical discharge from material dumped at sea
H03.02.01	non-synthetic compound contamination
H04	Air pollution, air-borne pollutants
H04.01	Acid rain
H04.02	Nitrogen-input
H04.03	other air pollution
H05	Soil pollution and solid waste (excl. discharges)
H05.01	garbage and solid waste
H06	Excess energy (noise, light, heating, electromagnetic)
H06.01	Noise nuisance, noise pollution
H06.01.01	point source or irregular noise pollution
H06.01.02	diffuse or permanent noise pollution
I	Invasive and introduced species
I01	Invasive alien species
I02	Problematic native species
I03	Introduced species/genes
I03.01	genetic pollution (animals)
I03.02	genetic pollution (plants)
J	Modification of natural conditions
J01	Fire and fire suppression
J02	Changes in water bodies conditions
J02.01	Landfill, land reclamation and drying out, general
J02.01.03	infilling of ditches, dykes, ponds, pools, marshes or pits
J02.02.01	dredging/ removal of limnic sediments

Code	Description corrected
J02.06	Water abstractions from surface waters
J02.06.01	surface water abstractions for agriculture
J02.06.05	surface water abstractions by fish farms
J02.06.06	surface water abstractions by hydro-energy
J02.07	Water abstractions from groundwater
J02.07.01	groundwater abstractions for agriculture
J02.07.05	other major groundwater abstractions from groundwater for agriculture
J02.10	management of aquatic and bank vegetation for drainage purposes

As part of the reporting requirements, each of the habitats and species have been assigned pressures and threats to them as appropriate – as demonstrated by scientific monitoring and research. Advice notes for the Member States recommends limiting the threats and pressures to 20 categories.

Analysis of the Article 12 and 17 reports for Ireland (NPWS 2013a and 2013b) as part of this appropriate assessment has provided a list of habitats and species that have at least one of these activities identified as a threat or pressure. This list is provided in Appendix A and is sorted by the type of activity. Whilst this preliminary analysis of the 59 Annex I habitats and 26 Annex II species is useful for highlighting those that may be at risk of adverse impacts, this list was subsequently added to as each habitat and species was analysed in turn. In reality almost all of the habitats and species could be affected by the wide range of activities that fall under the sectors represented in the Plan.

4.4 Conservation status of Habitats and Species

The best available scientific data for these habitats and species protected under the EC Habitats and Birds Directives was sourced from the following documents:

- National Parks and Wildlife Service (2013a) The Status of EU Protected Habitats and Species in Ireland. Habitats Assessments Volume 2, Version 1.0. Unpublished Report. NPWS, Dublin.
- National Parks and Wildlife Service (2013b) The Status of EU Protected Habitats and Species in Ireland. Species Assessments Volume 3, Version 1.0. Unpublished Report. NPWS, Dublin.
- National summary of data in relation to Article 12.

The habitats and species assessments above provide a range of information that is used by the Department of Arts, Heritage and the Gaeltacht to determine changes over time in terms of populations' size and structure and distribution. They are also a legal requirement under Article 17 and Article 12 of the Habitats and Birds Directives respectively.

A summary of the status of the habitats and species in Ireland is provided below. It includes all Annex I habitats and species listed in Annexes II, IV and V of the Habitats Directive:

Box 1: Summary of Conservation Status of Habitats and Species (p9 Prioritised Action Framework, 2014)

“In 2013, 9% of habitats are assessed as “favourable”, 50% as “inadequate” and 41% as “bad”.

Since 2007, nine (16%) habitats demonstrate a genuine improving trend, 18 (31%) habitats are considered to be declining; no change is reported for 28 (48%) and an unknown trend reported for three (5%) habitats. These results also include movement between categories as well as changes indicated by the qualifiers. The following ten priority habitats were assessed as being in bad status in 2013:

- 1150 Coastal lagoons
- 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)
- 21A0 Machairs
- 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia)
- 6230 Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas
- 7110 Active raised bogs
- 7130 Blanket bog (*active only)
- 7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*
- 91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)
- 91J0 *Taxus baccata* woods of the British Isles

52% of species are assessed as “favourable”, 20% as “inadequate”, 12% as “bad” and 16% as “unknown”. There are less unknowns than reported in 2007, due to improved knowledge of cetaceans; in those cases, the “unknown” ratings were elevated to a “favourable” status in 2013. Therefore with further improved knowledge of cetaceans it is likely that the proportion of species in “favourable” status will increase.

Since 2007, four (6%) species demonstrate a genuine improving trend, six (10%) species are considered to be declining, with no genuine change reported for 50 species (82%). These results also include movement between categories as well as changes indicated by the qualifiers.”

“Inadequate but improving trends are noted for some marine habitats. One (reefs) is in bad status, while sandbanks are assessed as favourable. Many of the coastal habitats are assessed as inadequate, with ongoing declines. Most of the dune habitats are assessed as bad. The majority of freshwater habitats are inadequate or bad with some ongoing declines. While heaths are assessed as bad, some improvements have been recorded. Several of the peatland and grassland habitats remain in bad status with ongoing declines; however, improvements are noted in some woodland habitats.

Many species are considered to be in favourable status. The Annex II plant species are favourable, except for slender naiad (*Najas flexilis*). All the Annex II mammal species are also considered to be in favourable status with population increases and range expansion observed for otter (*Lutra lutra*). Ongoing declines are reported for the majority of Annex II mollusc species including *Vertigo* species and pearl mussel (*Margaritifera*). However, Kerry slug (*Geomalacus maculosus*) is considered to be in favourable status. Marsh fritillary (*Euphydryas aurinia*) and white-clawed crayfish (*Austroptamobius pallipes*) are listed as inadequate, with the former noted to have a declining trend. Of the six Annex II fish species, sea lamprey (*Petromyzon marinus*) and twaite shad (*Alosa fallax*) are reported as being in bad status, with the remainder being in either inadequate (*Salmo salar*) or favourable status.”

Box 1: Summary of Conservation Status of Habitats and Species (p9 Prioritised Action Framework, 2014)

“Ireland has recently completed its report (for 2008-2012) under Article 12 of the Birds Directive. This includes population and range trend data and also lists pressures and threats the species for which SPAs have been selected. A new “Birds of Conservation Concern” (BoCCI) list has also just been published, which provides up-to-date red and amber lists for Ireland. The criteria for assessment include international conservation status as well as historical and recent population and range declines. (See table G.3, page 59, which provides summary data from both sources).

Birds Directive Annex I species for which Ireland has selected SPAs, which are on the red list are: breeding corncrake (*Crex crex*), golden plover (*Pluvialis apricaria*); dunlin (*Calidris alpina schinzii*) and Leach’s storm petrel; wintering Bewick’s swan (*Cygnus columbianus*).

Two recently introduced raptors, white-tailed eagle (*Haliaeetus albicilla*) and golden eagle (*Aquila chrysaetos*) are both Annex I species and red-listed.

Other species on the red list for which SPAs have been selected include wintering ducks such as wigeon (*Anas penelope*), pochard (*Aythya ferina*) and goldeneye (*Bucephala clangula*); breeding common scoter (*Melanitta nigra*); two species of breeding gull: black-headed gull (*Larus ridibundus*) and herring gull (*Larus argentatus*).

The red list also includes breeding waders such as curlew (*Numenius arquata*), redshank (*Tringa totanus*) and lapwing (*Vanellus vanellus*); red grouse (*Lagopus lagopus*), barn owl (*Tyto alba*); breeding passerines such as meadow pipit (*Anthus pratensis*), grey wagtail (*Motacilla cinerea*) and whinchat (*Saxicola rubetra*)

Species on the amber list for which SPAs are selected include Annex I breeding species such as chough (*Pyrrhocorax pyrrhocorax*), merlin (*Falco columbarius*), hen harrier (*Circus cyaneus*) and tern species (*Sterna spp.*)”

Almost all of these species listed above have some linkage to agricultural activities. Appendix B lists these linkages in more detail.

For breeding species (n=135), 38% had increasing population whilst 27% were decreasing (short-term). In the long-term predictions 19% were predicted to be increasing whilst 18% were decreasing.

For wintering species, 25% had increasing population whilst 24% were decreasing (short-term). In the long-term predictions 19% were predicted to be increasing whilst 16% were decreasing.

Breeding ranges were increasing in the short term for 56% of taxa but this reduced in the longer term prediction.

In 2011, Birdwatch Ireland published the Group Action Plan for Lowland Farmland Birds which provides an excellent summary of the relationship between agricultural practice and Birds of Conservation Concern in Ireland (BoCCI):

“As a group, farmland birds have experienced some of the largest population declines and range contractions of any bird species in Ireland. Of the 19 species listed on the Red List of the Birds of Conservation Concern in Ireland (BoCCI) due to breeding population concerns, ten (Grey Partridge, Quail, Corncrake, Golden Plover, Lapwing, Curlew, Redshank, Barn Owl, Twite and Yellowhammer) are dependent upon farmland habitats at some point during the course of the year. In addition to this, several other bird species that are dependent upon agricultural habitats appear on the BoCCI Red List for wintering populations (Bewick’s Swan) and the Amber List. The only species on the IUCN Red List (species of global conservation concern) regularly breeding in Ireland (Curlew) is also associated with lowland farmland. Also, the most recent regular breeding species to become extinct in Ireland, Corn Bunting, was a specialist lowland farmland bird, with breeding last recorded in 1992. In addition to these historic declines, today’s farmland bird population remains under threat. In a recent assessment of common birds (using data from the Countryside Bird Survey (CBS)), two of the three species showing a significant decline between 1998 and 2008 are farmland species (Kestrel and Skylark).”⁷ (Extracted from Executive Summary).

The Bird Atlas 2007-2011, which presented a nationwide assessment of bird species distribution. It also highlighted the decline of distribution and/or abundance lowland and upland farmland birds but noted that some species such as Buzzard and Great Spotted Woodpecker have undergone a rapid, localized expansion. The former species is particularly common around lowland farmland and has seen a rapid expansion along the eastern half of Ireland.

The relationship between aquaculture and seabird populations is also a close and finely balanced scenario with issues such as seabird bycatch and overfishing of prey species being of particular concern for some species.

4.5 Contribution of Agriculture to Conservation Status

Review of academic and government literature has indicated strong linkages between the current status of many of our species and habitats and agricultural practice. The Article 17 reporting process has indicated that more than 70% of habitats are impacted by the Agriculture category – the highest category alongside “natural system modification”, “Invasive and problematic species” and “pollution”. It is also identified as a threat/pressure to nearly 40% of the species listed in Annex II that occur in Ireland.

The pressures and threats posed by agriculture on the habitats and species are set in the converse context that farmland makes up around 40% of the total area included in the Natura 2000 network across Europe. As stated above in Section 4.2 there are nine habitat types that are reliant on agriculture – the Commission states (2014)

“These are habitats where the species composition has been subject to selection over many decades or centuries and corresponds both to the site conditions and to type and intensity of human management. Both cessation of this management and significant changes in the management intensity result in (usually irreversible) changes in the habitat structure and species composition.”

In turn, these “agricultural” habitats support unique invertebrate, mammal, reptile, amphibian and bird populations that can suffer significant deterioration in populations and ranges when the habitats are lost or allowed to deteriorate. In the context of aquaculture there are few, if

⁷ <http://www.birdwatchireland.ie/LinkClick.aspx?fileticket=n0mR60Gc35E%3d&tabid=946>

any freshwater or marine habitats in Ireland that rely on food and material production/harvesting to maintain their habitats.

The European Commission (2014) has identified both abandonment of agricultural land and intensification of agricultural practices as being generic sources of threats to conservation status. Habitat types linked to agriculture generally have a worse conservation status. For example for grassland, heath and peatland more than 80% of these habitat types were regarded to have “bad status” compared to 30% for marine, coastal and freshwater habitats. At a European scale, with only 7 % of assessments of “agricultural” habitats were deemed to be favourable, compared to 21 % for ‘non-agricultural’ habitats. The reports submitted by the Member States show that grasslands in particular are under the most pressure (European Commission, 2014). At a European scale, the key impact types for terrestrial activities were identified as follows:

- Lack of grazing and/or hay cutting;
- Lack of shepherding;
- Intensification of farming practices, over-grazing and high stocking levels, supplementary feeding;
- Changes in mowing practices and mechanisation;
- Fertilisers and lime;
- Herbicides and pesticides;
- Intensification of grassland use or cultivation and conversion to arable;
- Changes in extensive arable farmland practices;
- Lack of controlled burning management – under-burning, over-burning and wildfire Damage;
- Loss of habitat features in agricultural landscapes;
- Loss of habitat diversity;
- Other farm operations or infrastructure;
- Changes in hydrology;
- Afforestation.

4.6 Other Environmental Parameters

4.6.1 Water

The EPA continually assesses more than 13,000 km of river channel at over 2,500 sample points in Ireland. The most recent Irish assessments show that c.71% of river channel can be categorised as unpolluted – achieving a minimum of good ecological status. However, c.29% of monitored river channel length is polluted to some degree

Trends over time show:

- An overall decrease in the length of river channel that is classed as “unpolluted”, although there have been some improvements in recent years;
- A decline in the length of “seriously-polluted” channel; and,
- An increase in the channel length affected by slight to moderate pollution – mainly due to eutrophication (over-enrichment with phosphorus and nitrogen). (EPA, 2015)

According to the European Environment Agency (EEA), pollution from nutrients and organic matter arising from sources such as sewage, agriculture and industry is still the most common

form of pollution across Europe.⁸ A welcome trend is that the observed levels of nitrogen and phosphorus in waters have been mostly stable or decreasing since 2007⁹.

There has been a marked downward trend in nitrogen in the far east of the country. As outlined in *Ireland's Environment 2012* water quality in Ireland compared favourably with other EU Member States. The progress that has been made in the lowering of Water Framework Directive (WFD) water quality risk scores are likely due to recent improvements in farming practices and also developments that have been made in the provision and management of urban waste water infrastructure. The general decrease in nitrogen and phosphorus levels and the associated reduction in eutrophication impacts are positive, however the rate of improvement is modest and the ultimate challenge of achieving good status for all bodies of water as required by the WFD is an extremely challenging one.

According to the EPA *"In broad terms approximately half of the 953 river sites assessed [in Ireland] are polluted due to what may be termed 'large point sources' such as municipal wastewater treatment plants. The other half are polluted as a result of diffuse sources, particularly agricultural activities, as well as a range of other activities such as forestry and peat harvesting."*¹⁰

There are a number of agricultural activities linked to water pollution and these include the spreading of artificial fertilisers/animal manures particularly in unsuitable climatic and ground conditions; runoff from silage effluent/farmyard runoff, the watering of animals and use of poorly managed ring-feeders. As a result, there are a number of actions that can be taken to control water pollution under existing legislation. The most important of these is to employ the Nitrates Action Plan (under the EU Nitrates Directive) to address diffuse agricultural pollution of freshwaters. This Plan includes a code of Good Agricultural Practice (GAP) which is compulsory for all farms.

Approximately 3,500 farm surveys are carried out each year by DAFM under cross-compliance rules. Special sub-basin plans have been drawn up for Freshwater Pearl Mussel (*Margaritifera margaritifera*) catchments. The EPA also issue relevant licences and with DAFM carry out enforcement activities which play an important part in the regulation of slurry land spreading on farms. Even so, agriculture is still the greatest exporter of phosphorus to surface waters in Ireland (NPWS, 2014). According to the EPA report *Water Quality in Ireland 2010 – 2012* the two major suspected causes of pollution in rivers are agriculture (53% of cases) and municipal sources (34%). However, during the study period, nutrient inputs to rivers, particularly from the agricultural sector, have seen an 18.7% reduction in nitrogen and a 37.3% reduction in phosphorous sources. The greatest reductions were in the intensive agriculture areas in the South-East and Midlands.¹¹

In comparison to other EU countries, the quality of groundwater in Ireland is very good (EEA 2013).¹² Impacts to ground water can be particularly significant where intensive agriculture (such as tillage and dairy) requires water abstraction from karstified limestone aquifers, particularly as these will have a high proportion of free-draining soils and sub-soils in their catchment. Examples of this were seen during the first WFD planning cycle in 2009, where the only significant upward trends reported for nitrate were found in the Public Water Supply (PWS) for Durrow, Co. Laois and Ballyheigue, Co. Kerry. The EPA have since registered water quality improvements in these areas, below the WFD threshold value, likely to be due to better farm

⁸ https://www.epa.ie/media/00061_EPA_SoE12_Ch04.pdf (EPA, Ireland's Environment 2012, Chapter 4)

⁹ http://www.epa.ie/media/Ch6_conclusions.pdf (Water Quality in Ireland 2010 – 2012)

¹⁰ <http://www.epa.ie/irelandsenvironment/water/tab3/#.VYLwTPIViko>

¹¹ EPA (2015) *Water Quality in Ireland 2010 – 2012*. Environmental Protection Agency, Ireland.

¹² European Environment Agency (2013) *Chemical Status Indicators for water across Europe*
<http://www.eea.europa.eu/data-and-maps/indicators/wfd-indicator-chemical-status/assessment>

management practices (e.g. increased slurry storage infrastructure and reduced fertiliser applications) and tightened regulatory controls, such as the development and implementation of source protection zones and the application of the Good Agricultural Practice Regulations. Vulnerable karst limestone aquifers, particularly in the west, have more potential for elevated phosphate concentrations in groundwater, and as such this can contribute to eutrophication in rivers and lakes in such areas.

Surface waters are also vulnerable to slight pollution (or moderate ecological status according to the WFD assessments) from excess nutrients causing eutrophication or other factors such as siltation. The EPA 2010-2012 study found that agriculture was the primary suspected cause of pollution, assigned to over half the cases of slight pollution. The effects of inundation and smothering by inert or organic silt can have significant effects on sensitive fauna, such as Freshwater Pearl Mussel and fish. During the 2010-2012 period, where the source of fish kills were identified, agriculture accounted for the greatest number. However, the study also found that the number of fish kills being reported in freshwaters (rivers and lakes) was declining, and during 2010-2012 fish kill reports were at their lowest to date. Nevertheless, the impacts of eutrophication are still the principal concern for Irish rivers today.

According to the EPA 2015 report, the improvements in Irish water quality, though positive, are modest and have occurred at a relatively slow rate. Future risks to the quality of water in Ireland include the planned expansion of the agricultural sector under Food Harvest 2020. Ensuring appropriate management of increased nutrient loadings through “*an integrated catchment management-based approach*” is of the utmost importance for the success of this scheme. In order to achieve this, it is fundamental that the interconnectivity between different water sources such as groundwater, surface waters and coastal waters etc. in relation to the landscape within the catchment area, are thoroughly understood.

4.6.2 Air

*“Anthropogenically induced changes in atmospheric composition are responsible for major environmental, health and economic challenges at both global and regional levels. On a regional scale air pollution causes environmental damage, impacts on human health and key economic sectors such as agriculture.”*¹³ Environmental Protection Agency

In Ireland, the EPA regulates a number of activities including intensive agriculture (e.g. pig and poultry farming) through licensing with the aim of protecting human health and the environment. The majority of global atmospheric ammonia (NH₃) emissions can be attributed to agriculture, with domestic animals and fertilisers being the main contributors. The agricultural sector is responsible for 98% of NH₃ emissions in Ireland. Eutrophication and acidification are a direct result of processes such as the deposition of atmospheric nitrogen.¹⁴

*“The agriculture sector accounts for virtually all of ammonia emissions in Ireland”*¹⁵ (EPA 2015)

Ambient air quality trends are continuously monitored in Ireland by the EPA, which contributes to the ‘National Ambient Air Quality Network’. In their latest report, ‘*Air Quality in Ireland 2013*’ the trend results are based on concentration measurements in 2013 of particulate matter, sulphur dioxide, nitrogen oxides, black smoke, heavy metals, ozone, polycyclic aromatic

¹³ <http://www.epa.ie/climate/airandclimatescience/#.VYK-RfIViko>

¹⁴ <http://ssu.ie/research/ammonian2k/>

¹⁵ <http://epa.ie/pubs/reports/air/airemissions/NECD%20Summary%20Report%202015.pdf>

hydrocarbons, carbon monoxide and benzene¹⁶. The results of this monitoring are compared to limit values which are defined in EU and Irish legislation regarding ambient air quality. In the 2013 report, overall it was found that measured values of pollutants¹⁷ were all below limit and target values set out in Directives. These include the 'The Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive' (2008/50/EC) or 'CAFE' Directive¹⁸ and the '4th Daughter Directive' (2004/107/EC) which is to be included in CAFE by the European Union (EU) in the future. The CAFE Directive is transposed into Irish legislation by the Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011). The fourth Daughter Directive was transposed into Irish legislation by the Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations 2009 (S.I. No. 58 of 2009). The report indicates that overall Irish air quality achieves favourable trends in comparison to other EU Member States under the above mentioned Directives. However, the 2013 report found that when a number of the parameters were compared to the more stringent limits set out by the World Health Organisation (WHO) Air Quality Guideline Values this indicates that Ireland exceeds these guideline values for PM₁₀, PM_{2.5}, ozone and polycyclic aromatic hydrocarbons (PAH) in particular. This could have significant impacts upon Irish air quality controls if the WHO thresholds are used as standards in future.

Air pollution (e.g. from substances such as Sulphur dioxide (SO₂) and Ammonia (NH₃)) can have significant impacts upon ecosystems principally through acidification and eutrophication of waterbodies such as lakes and rivers, formation of particulate matter and impacts upon soils. Ozone has direct impacts on crops and vegetation, as does Benzene (C₆H₆). Recent studies indicate that while SO₂ emissions have decreased, emissions of NH₃ emitted from agricultural activities and nitrogen oxides (NO_x) emitted following the combustion processes to surface water which also contribute to soil acidification, have increased (sometimes considerably) in some regions in Europe.¹⁹

Emissions of sulphur and nitrogen compounds are often assessed using the critical load concept. This describes the habitat's capacity to buffer the input of atmospheric pollutants before damage is incurred to the habitats and species present. The EPA Report *Ireland's Environment* (2012) states that environmental damage is inevitable if the critical load for an ecosystem is exceeded. Prevention of such damage is a key objective of the UNECE CLRTAP and EU NEC Directive. In 2009, the Coordination Centre for Effects (CCE) for transboundary air pollution indicated that for Ireland under current legislative emissions, 10 per cent of the soils were at risk from exceedances of critical loads for acidification, which was predicted to decrease to 6 per cent by 2020 and matches an overall decline in the levels of acidification across Europe as a result of declines in sulphur emissions. However the threat of eutrophication caused by elevated nitrogen deposition has not declined and is a cause for concern in relation to several habitats and species protected by the Birds and Habitats Directives.

The European Commission (EC) has been carrying out a review of air quality policy and legislation since 2012. Following the 7th Environmental Action Plan this has outlined the need for updated air quality Directives which will set out clear goals for the EU by 2020. A fact which is also highlighted in the EC's 2013 document on impact assessment which reiterates its goals for dealing with air pollution in the short and long term. As part of *Food Harvest 2020* the Irish agricultural sector's approach to growing production while controlling emissions is based on a

¹⁶ Real time data per county can be viewed for air monitoring locations at:
http://www.epa.ie/air/quality/data/#.VYLFd_IViko

¹⁷ Pollutants measured included sulphur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), Ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), heavy metals, benzene and polycyclic aromatic hydrocarbons (PAH).

¹⁸ The CAFE Directive is an amalgamation of the Air Quality Framework Directive and its subsequent First, Second and Third Daughter Directives (EPA Air Quality Report 2013).

¹⁹ EEA (European Environment Agency), 2014, Effects of air pollution on European ecosystems, EEA Technical report No 11/2014.

“sustainable intensification” model. The EPA recognises that while there are benefits to such an approach, it is unlikely that it will be able to deliver the emission reductions that are necessary if overall national emissions are to be lowered, and if Ireland is to meet its international obligations.

4.6.3 Soil

Soil is a key natural resource on which agricultural activities rely heavily upon. As the regenerative properties of soil are limited this is considered to be a finite resource. Historically, it has been the agricultural industry which has shaped the rural landscape and environment in Ireland. Agricultural land accounts for approximately two-thirds of the national landmass, most of which is permanent grassland pastures.

“The agri-food sector²⁰ contributes over €24 billion per year to the Irish economy and accounts for almost 10% of employment in the country” (DAFM, 2010).

According to the EPA, in general, Irish soils are considered to be in good condition. This excludes peat-rich areas which are vulnerable to external pressures e.g. peat abstraction. The agricultural use of peatlands (particularly basin peats) is increased through drainage and land reclamation works. This is particularly significant for climate change processes due to the natural carbon sink that this type of soil provides. There is however, also an increasing pressure on soil particularly *“from land use changes, agricultural intensification, erosion and over-grazing, disposal of organic wastes to soils, afforestation, industry and urbanisation”*. These activities can lead to soil degradation, including reductions in organic matter, soil fertility, loss of biodiversity and soil stability, acidification, increased erosion, compaction, contamination and permanent loss of soil to buildings and infrastructure (EPA 2002).²¹

The agricultural land practices that have the potential to degrade soil quality include poor fertiliser management, poor nutrient management, high stocking densities on particularly vulnerable soil types e.g. blanket peats, soil compaction (poaching), poorly managed waste disposal on soils, over-ploughing (particularly in permanent and semi-natural grasslands) and intensification of arable production systems which leads to increased soil erosion.

A study by the EPA in 2010 recognised a need for a national land cover dataset specially designed to categorise Irish Land Use and Land Cover to an appropriate level. In September 2014 the first phase of the Irish Soil Information System was successfully launched with the overall objective to provide a coherent soil map of Ireland at a scale of 1:250,000 alongside a soil information system that is in the public domain (<http://gis.teagasc.ie/soils/index.php>). The availability of this comprehensive dataset will assist when carrying research into the impacts upon soil as a result of anthropogenic activities.

There is relatively little legislation relating directly to soil protection. The EC recognises that the continued unsustainable use of soils poses a serious threat to biodiversity and climate change. As such, the Soil Thematic Strategy (COM (2006) 231) was adopted in September 2006 with the aim of protecting soils across the EU. The 7th Environment Action Programme came into force in January 2014 and highlights the fact that soil degradation is a serious challenge for Europe. This programme provides for the adequate protection, sustainable management and remediation

²⁰ Agri-food sector is taken to include primary production (Agriculture, Fisheries and Forestry) along with Food, Beverages & Tobacco (grouped together in National Income classification) and wood processing sectors.

²¹ EPA 2002 – Setting Environmental Quality Objectives for Soil – Developing a Soil Protection Strategy for Ireland. A discussion document by Brogan, J., Crowe, M. and Carty, G.

(where contaminated) of soil by 2020. This commits EU Member States to reducing soil erosion and increasing soil organic matter as well as remediating contaminated sites.²²

The rate of Land Use and Land Cover (LULC) change in Ireland is relatively high in relation to other EU Member States. The main changes have included increases in forestry and artificial areas, with decreased seen in the total amount of agricultural land and peatland. “Food Harvest 2020” forecasted large-scale changes in production, particularly in the milk industry which will be a result of agricultural intensification. This poses risks to soil, water and air quality and will require the integration of environmental considerations with these agricultural objectives in order to prevent negative impacts upon these resources and to ensure that Ireland maintains its international obligations and protects its natural assets. Government schemes such as GLAS (Green, Low-Carbon, Agri-Environment Scheme) which replaces REPS (Rural Environmental Protection Scheme) and AEOS (Agri-Environment Option Scheme) assists Irish farmers in the preservation of traditional hay meadows and low-input pastures. The scheme aims to be ‘low carbon’ by retaining the carbon stock through providing field margins, preserving habitats and through practices such as minimum tillage. GLAS promotes farming practices which are sensitive to the protection of the environment, water quality and the landscape (including endangered species of flora and fauna), as well as those that mitigate for climate change impacts. The protection of soil will result from the appropriate management of such schemes in Ireland.

4.7 Site integrity and Conservation Objectives

The test for AA is to whether the plan or project – in this case the Plan, will impact on the integrity of the European Site. This term was defined in earlier EC documentation as “*The integrity of a site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site’s conservation objectives*” (MN2000, paragraph 4.6(3)).²³ “Integrity” was further defined in the context of adverse impact on a priority habitat type the European Court judgement:

“In order to establish whether a plan or project to which Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora applies has an adverse effect on the integrity of a site, it is necessary to determine whether that plan or project will have a negative effect on the constitutive elements of the site concerned, having regard to the reasons for which the site was designated and their associated conservation objectives. An effect which is permanent or long lasting must be regarded as an adverse one. In reaching such a determination, the precautionary principle will apply.”²⁴

So in essence if the proposed actions of the Plan will have a negative, permanent or long-lasting effect on the “constitutive elements of the European sites then it will fail the test posed by Article 6(3).

Additional advice regarding how to test for impacts on integrity have been provided by European Commission Guidance (2001)²⁵ which list the following factors to be considered:

²² http://ec.europa.eu/environment/soil/index_en.htm

²³ European Commission (2000) Managing Natura 2000 Sites: the Provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC. European Communities, Luxembourg.

²⁴ ECLI:EU:C:2013:220, [2014] PTSR 1092, EU:C:2013:220, [2013] EUECJ C-258/11

<http://www.bailii.org/eu/cases/EUECJ/2013/C25811.html>

²⁵ Box 10, p29.

Does the project or plan have the potential to:

- cause delays in progress towards achieving the conservation objectives of the site?
- interrupt progress towards achieving the conservation objectives of the site?
- disrupt those factors that help to maintain the favourable conditions of the site?
- interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?
- cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?
- change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?
- interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?
- reduce the area of key habitats?
- reduce the population of key species?
- change the balance between key species?
- reduce diversity of the site?
- result in disturbance that could affect population size or density or the balance between key species?
- result in fragmentation?
- result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?

Both “Generic” and “Site Specific” Conservation Objectives have been prepared for European Sites in Ireland.

The generic objective for the SACs is as follows:

“Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected”.

Favourable Conservation status/condition is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
 - the specific structure and functions which are necessary for its long term maintenance exist and are likely to continue to exist for the foreseeable future,
- and
- the conservation status of its typical species is “favourable”.

“Favourable” is defined as:

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

For the SPAs, the following generic objective applies:

“Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA”

“Site-specific” conservation objectives are just that, prepared for *each individual site* to take account of the condition of the qualifying interest and its future prospects. An example is provided overleaf for alkaline fen habitats, one of the habitats identified as being vulnerable to agricultural activities by the EC:

Conservation Objectives for : Galway Bay Complex SAC [000268]

7230 Alkaline fens

To maintain the favourable conservation condition of Alkaline fens in Galway Bay Complex SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes	The full extent of this habitat within the SAC is currently unknown. Fen vegetation occurs in wetland areas to the east of Oranmore (Internal NPWS files). It has also been recorded in Ballindereen Lough (see turloughs supporting document for further details). This habitat is found in mosaic with another habitats including the Annex I habitat: Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae (7210). NB further areas of fen are likely to occur within the SAC
Habitat distribution	Occurrence	No decline, subject to natural processes	Full distribution of this habitat in this SAC is currently unknown- see note above
Hydrological regime	Flow rates, metres	Appropriate natural hydrological regime necessary to support the natural structure and functioning of the habitat	Maintenance of groundwater, surface water flows and water table levels within natural ranges is essential for this wetland habitat
Peat formation	Flood duration	Active peat formation, where appropriate	In order for peat to form, water levels need to be slightly below or above the soil surface for c.90% of the time (Jim Ryan, pers. comm.)
Water quality: nutrients	Water chemistry measures	Appropriate water quality to support the natural structure and functioning of the habitat	Fens receive natural levels of nutrients (e.g. iron, magnesium and calcium) from water sources. However, they are generally poor in nitrogen and phosphorus with the latter tending to be the limiting nutrient
Vegetation composition: typical species	Presence	Maintain vegetation cover of typical species including brown mosses and vascular plants	Mosses listed for fen at this site include <i>Campyllum stellatum</i> , <i>Fissidens adianthoides</i> and <i>Ctenidium molluscum</i> . Other species recorded include black bog rush (<i>Schoenus nigricans</i>), purple moor-grass (<i>Molinia caerulea</i>), sedge species (<i>Carex</i> spp.), water mint (<i>Mentha aquatica</i>), butterwort (<i>Pinguicula</i> spp.) and ling heather (<i>Calluna vulgaris</i>) (Internal NPWS files)
Vegetation composition: trees and shrubs	Percentage	Cover of scattered native trees and shrubs less than 10%	Scrub and trees will tend to invade if fen conditions become drier. Internal NPWS files report scattered multi-stemmed trees over much of the habitat. Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., in prep.)
Physical structure: disturbed bare ground	Percentage	Cover of disturbed bare ground less than 10%. Where tufa is present, disturbed bare ground less than 1%	While grazing may be appropriate in this habitat, excessive area of disturbed bare ground may develop due to unsuitable grazing regimes. Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., in prep.)
Physical structure: drainage	Percentage	Areas showing signs of drainage as a result of drainage ditches or heavy trampling less than 10%	Attribute and target based on upland habitat conservation assessment criteria (Perrin et al., in prep.)

Figure 3: Example of Site-specific conservation objectives.

The crux of the AA process is the determination as to whether the Plan will prevent, cause delays or interrupt progress toward the Conservation Objective from reaching its target as discussed earlier.

In some cases for SSCOs the SSCO is not just to maintain the habitat or species but also to “restore” it to a certain level of population or range. In such cases the measures required to do so may have to go mere protection of environmental degradation and may have to invoke more positive actions to provide additional habitat or resources for species population/range increases.

The strategic level of the Plan has meant that it was not possible to always link proposed actions to the effect on allowing the CO/SSCOs to be achieved. In order to ensure that there was a linkage between the Plan and the Conservation Objectives it was necessary to summarise the Objectives as follows.

Objectives for habitats generally

- targeted “stable or increasing” area subject to natural processes,
- targeted no decline in distribution,
- targeted appropriate physical conditions to support natural structure and functioning of the habitat,
- targeted maintenance of vegetation structure in keeping with the typical requirements of the habitat type.

Objectives for species and birds are usually more specific to the requirements and sensitivity and may include “no decline in distribution”, “restore population to X individuals” or “restore suitable habitat” and so on.

4.8 Scoping the Assessment

A wide variety of habitats, species and birds have the potential to be affected by agricultural activities supported by the Plan. The data provided by the Article 17 reports indicates where the habitat or species is faced by threats or pressures of specific types. This data has informed (in part) the scoping of the habitat and species that are considered linked to the Plan. The full list of habitats, species and birds was assessed using the Article 17 reports, reference to how they were assessed in other plans and programmes and by application of professional opinion.

In the context of European sites, the scoping process did not see any value in scoping certain sites “in” or “out” as there are wide variations in sizes, locations, condition and issues between the different sites. Therefore details on specific sites are not given.

4.9 Existing Plans and Programmes to take into account

This section summarises the other Plans and Programmes that have influenced this assessment and provide a framework for both predicting impacts and for taking certain mitigation measures into account.

It was clear from a review of literature that the range of plans, strategies and measures in place that deal with agricultural activities is complex and numerous. In order to scope the plans and programmes to those that are relevant a series of criteria were applied including:

- Does the Plan or Programme promote intensification or changes to land use?
- Does the Plan or Programme instil generic or specific environmental protection measures?

- Has the Plan or Programme undergone AA Screening or full AA and therefore has addressed impacts on European sites (which can then be considered in the AA of the Plan)?

The following Plans were regarded to be relevant and therefore represent the procedural/institutional and administrative baseline within which the Plan will be implemented:

Europe

- Common Agricultural Policy
- EU Biodiversity Strategy to 2020
- Water Framework Directive

Ireland

- National Biodiversity Plan
- Prioritised Action Framework for Natura 2000
- Programme of Measures Re Case C418/04 “the Birds Case”
- Rural Development Plan 2014-2020
- National Peatlands Strategy

Sectoral (National)

- Ireland’s Forestry Programme 2014-2020
- Seafood Development Programme (Draft)
- (Draft) National Strategic Plan for Aquaculture

Local

- Commonage Framework Plans
- Basic Farm Payment Scheme
- GLAS
- EU Areas of Natural Constraint Scheme
- Targeted Agricultural Modernisation Schemes II (TAMS II)

Other plans and programmes also overlap with the Plan when taken in a wider context (e.g. tourism plans such as Wild Atlantic Way) but in order to tightly scope the assessment it was decided to limit the “in-combination” aspect of the AA process to the Plan in-combination with the above plans and programmes.

Food Harvest 2020 has effectively been replaced by the Plan. It underwent a retrospective AA and SEA in 2013 and the outcomes of this assessment have been taken into account in the AA of the Plan.

The key elements of each of these are summarised below:

4.9.1 Common Agricultural Policy

The Common Agricultural Policy (CAP) is a system of subsidies and support programmes for agriculture operated by the European Union. CAP combines direct payments to farmers together with price/market supports.

The Basic Payment Scheme (replaced the Single Payment Scheme in 2015) of the Common Agricultural Policy (CAP) includes several measures that address potential impacts on European sites and therefore need to be highlighted. Much of the following information has been taken from a useful summary in the Draft Appropriate Assessment Report for the RDP 2014-2020.

In order to be eligible for the BSP, farms must meet the requirements of “cross compliance”. Under the new CAP, Cross compliance includes 13 Statutory Management Requirements (SMRs) and 7 standards for Good Agricultural and Environmental Condition (GAEC) of land. SMR2 refers to

compliance with the EC Birds Directive and SMR3 to the EC Habitats Directive. Whilst Compliance with the provisions of the Birds and Habitats Directives, including control over “notifiable actions” or “activities requiring consent”. SMR1 also requires compliance with the provisions of the Nitrates Directive, including requirements on the storage and application of slurry and other organic and chemical fertilisers.

GAEC standards include conservation of landscape features, such as hedges, ponds and field margins, in addition to other standards on soil erosion, burning and watercourse protection. GAEC standards also exclude agriculturally unproductive land from BPS eligibility. Ineligible land includes lakes, watercourses, woodland, rock, scrub, and land not being farmed.

These GAEC standards also apply to lands within European sites and render certain Habitats Directive habitat types, e.g. limestone pavement, ineligible for the SPS or other area-based payments. Whilst this may mean that the farmer may not benefit from any agricultural activities, it may not be a deterrent to changing land use to gain some value out of the land.

The CAP has introduced an additional “greening” direct payment comprising 30% of the direct payments budget that requires farmers to maintain permanent pasture, to diversify tillage crops, and to conserve ecological focus areas. Permanent pasture must be retained within 5% of national reference levels. The requirement for crop diversification applies only to farms with more than 10 ha of arable crops, with farms between 10 and 30ha having a two crop requirement, and those with greater than 30ha having a three crop requirement. The requirement for ecological focus areas applies to farms with greater than 15ha of arable crops. On these farms, ecological focus areas must comprise 5% of the farm area. These measures are aimed at conserving and enhancing biodiversity and providing climate change mitigation. Under a separate measure “environmentally sensitive grassland” must not be ploughed up or converted. In Ireland these are specific areas within European sites.

4.9.2 EU Biodiversity Strategy to 2020

The EU Biodiversity Strategy to 2020 is underpinned by six targets one of which is “*More sustainable agriculture and forestry*”. The Strategy includes an acknowledgement that whilst the previous CAP included measures “*aimed at environmental protection, such as decoupling, cross-compliance and agri-environment measures*” but that “*these measures have so far failed to halt the overall decline in biodiversity in the EU and that farmland biodiversity is in continued decline; calls, therefore, for a reorientation of the CAP towards the provision of compensation to farmers for the delivery of public goods, since the market is currently failing to integrate the economic value of the important public goods agriculture can deliver*”.²⁶

The Strategy calls for a results-based approach to ensure the measurement of effectiveness of actions is correctly made. It clearly supports the greening approaches via Pillar 1 of CAP and identifies clear linkages to the Natura 2000 network through such payment schemes. Other measures that are promoted include strengthening of agricultural practices particularly better organic manure management; halting and reversing land abandonment by promoting small and medium-scale farming; stepping up support for agricultural sectors that support biodiversity such as beekeeping and ensuring diversity of animal and plant genetics. Whole-strategy targets include 100% more Habitats Directive habitat assessments and 50% more species assessments under the Habitats or Birds Directives show improved conservation status, and restoring at least 15% of degraded ecosystems.

It is acknowledged that the lifetime of the EU Biodiversity Strategy will end before the end date of *Food Wise 2025*. The mitigation measures contained within this NIS, the Environmental Report and the proposals within the Plan itself are likely to be adjusted in response to any changes to the EU

²⁶ http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/EP_resolution_april2012.pdf

Biodiversity Strategy. The DAFM Sustainability Sub-Group that will be established to implement *Food Wise 2025* will be the body responsible for ensuring that such changes are integrated into the relevant instruments.

4.9.3 Water Framework Directive

The primary objective of the Water Framework Directive is to achieve good status for all waters by the end of 2015. River Basin Management Plans for each of the eight River Basin Districts across the Republic and Northern Ireland have been prepared and include a programme of measures some of which directly relate to controlling agricultural sources of freshwater pollutions. These measures are intertwined with the Nitrates Regulations and cross compliance inspections by the Department. All of the RBMPs have undergone an appropriate assessment as is required by the Directive. Sub-basin management plans have been prepared for freshwater pearl mussel catchments as these have a higher level of sensitivity than most other freshwater ecosystems. Additional measures for this species and other sensitive water catchments are being integrated into agri-environment schemes under the RDP 2014-2020.

4.9.4 National Biodiversity Plan 2011-2016

The role of agriculture in providing benefits to biodiversity and ensuring that it is ecologically sustainable is highlighted in the Plan. Target 5 is to “*optimise use of opportunities under agricultural, rural development and forest policy to benefit biodiversity*²⁷”.

Nine specific Actions to reach this target are set out in the Plan:

- 5.1 Develop measures in future rural development programmes for the protection and enhancement of ecosystem services and biodiversity.
- 5.2 Further develop criteria to identify High Nature Value farmland and develop measures to address threats.
- 5.3 Ensure effective implementation of cross-compliance, statutory management requirements and forest service guidelines/requirements to ensure conservation of biodiversity.
- 5.4 Conduct a systematic evaluation process for any agri environmental schemes delivered, involving a robust ecological monitoring programme.
- 5.5 Review the control of overgrazing and undergrazing.
- 5.6 Continue the Burren Farming for Conservation Programme.
- 5.7 Continue to promote the Native Woodland Scheme which features establishment and conservation elements aimed at encouraging the development and conservation of native woodlands.
- 5.8 Consider and develop guidance on alternative forestry management options which aim to deliver additional biodiversity benefits.
- 5.9 Strengthen measures to ensure conservation, and availability for use, of genetic diversity of crop varieties, livestock breeds and races, and of commercial tree species and promote in particular their in-situ conservation.

27

<http://www.ahg.gov.ie/en/Publications/HeritagePublications/NatureConservationPublications/Actions%20for%20Biodiversity%202011%20-%202016.pdf>

Other targets address water quality, invasive and alien species, scrub management and wildlife law. Target 14 comprises “Fish stock levels maintained or restored to levels that can produce maximum sustainable yield, where possible no later than 2015”

Target 15 comprises “*Natura 2000 network established, safeguarded, designated by 2012 (2014 for marine SPAs) and under effective conservation management by 2016*”. It includes Action 15.4 to “*ensure that agri-environmental schemes provide targeted and costed prescriptions that will contribute to favourable conservation status in farmed designated sites*”.

It is acknowledged that the lifetime of the National Biodiversity Strategy will end before *Food Wise 2025*. The mitigation measures contained within this NIS, the Environmental Report and the proposals within the Plan itself are likely to be adjusted in response to any changes to any revised National Biodiversity Strategy. The DAFM Sustainability Sub-Group that will be established to implement *Food Wise 2025* will be the body responsible for ensuring that such changes are integrated into the relevant instruments.

4.9.5 Prioritised Action Framework for Natura 2000

The Prioritised Action Framework (PAF) 2014-2020 focuses on improving the conservation status of habitats and species that are currently in bad status or are in inadequate and declining status. These include 10 priority habitats, 20 non-priority habitats, 8 Habitats Directive species and 17 Birds Directive species based upon the Article 12 and 17 reports published in 2013. Priority actions under the PAF include developing targeted measures with agri-environment schemes to improve the conservation status of peatlands, uplands, limestone pavement, species-rich calcareous grassland, fixed dunes, machair, turloughs and species-rich *Nardus* grasslands. The PAF also identifies the need to develop targeted measures for corncrake, breeding waders, wintering geese and swans. Improving the status of freshwater pearl mussel and the implementation of sub-basin management plans under the Water Framework Directive is also a priority. The PAF not only forms an important background to the protection of European sites in all sectoral activities related to agriculture and food production but is also reflected in the measures contained within the GLAS Scheme which is a primary instrument for delivering biodiversity enhancement in practice in this sector. It is acknowledged that the lifetime of the PAF will end before *Food Wise 2025*. The mitigation measures contained within this NIS, the Environmental Report and the proposals within the Plan itself are likely to be adjusted in response to any changes resulting from any successor to the PAF. The DAFM Sustainability Sub-Group that will be established to implement *Food Wise 2025* will be the body responsible for ensuring that such changes are integrated into the relevant instruments.

4.9.6 Programme of Measures Re Case C418/04 “the Birds Case”

In December 2007, the Court of Justice of the European Union, arising from a case brought by the European Commission, delivered judgment on Ireland's implementation of the EC Birds Directive. The Judgment referred to six separate complaints. The Court found in favour of Ireland in respect of one complaint. The Programme of Measures sets out the actions taken to date by Ireland in response to the Judgment of the Court together with commitments for further action to ensure that remaining issues have been dealt with. Measures that are pertinent to the assessment of the Plan are listed below:

- Corncrake Framework Strategy prepared which has been integrated into agri-environment schemes to promote grazing management practices, restrict field operations and adhere to strict cutting practices. It was integrated into the GLAS scheme in 2015.
- Adoption of wider countryside measures for Grey Partridge, Red Grouse, control of poisons and implementation of Birdwatch Ireland's 10 Group Species Action Plans²⁸ which notably cover breeding waders and lowland farmland birds.

Appendix 4 presents the approach toward the management of fisheries and aquaculture activities in Natura 2000 sites in Ireland. This approach includes the appropriate assessment of aquaculture licences on a bay/Natura basis and this is now well-established in practice with 13 assessments having been carried out to date²⁹. Assessment of sea fisheries in European Sites that require prior consent requires preparation of a Fisheries Natura Plan which is then assessed by the Marine Institute (5 concluded to date)³⁰.

In order to fulfil the obligations arising under Article 6.2 (see Section 1.1) in relation to all aquaculture activities, a "Risk Assessment Framework and Work Programme" were put in place in 2013. A commitment was given to the Commission that all sites for which Conservation Objectives were published (approx. 70) would be subjected to risk assessment by end 2013. The Risk Assessment programme seeks to establish scientifically, and in accordance with Commission guidance, the degree of risk, if any, posed by each type of fishing activity on the designated habitats and species in each site. Where significant risk is identified, mitigation measures are implemented. This is discussed in more detail in Section 6.4

4.9.7 Rural Development Plan 2014-2020

The RDP 2014-2020 is the primary strategy for implementing the funding mechanisms of the CAP and facilitate most of the funding for agri-environment schemes in Ireland. A total of €4,007 million has been allocated to the RDP 2014-2020, which includes EU funding under the European Agricultural Fund for Rural Development (EAFRD) and contributions from the National Exchequer. Of this, the total funding for LEADER amounts to €250 million. The RDP is based on six EU priority areas for rural development:

- Fostering knowledge transfer and innovation,
- Enhancing competitiveness,
- Promoting food chain organisation and risk management in agriculture,
- Restoring, preserving and enhancing ecosystems,
- Promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy,
- Promoting social inclusion, poverty reduction and economic development in rural areas.

The key measures under the RDP of relevance to the assessment are as follows:

²⁸

<http://www.birdwatchireland.ie/OurWork/SpeciesHabitatConservationinIreland/ActionPlansforIrishBirds200911/tabid/946/Default.aspx>

²⁹

<http://www.agriculture.gov.ie/fisheries/aquacultureforeshoremanagement/aquaculturelicensing/appropriateassessmentscarriedout/>

³⁰ <http://www.fishingnet.ie/sea-fisheriesinnaturaareas/concludedassessments/>

- Agri-Environment and Climate Measures: including GLAS (Green Low-Carbon Agri-Environment Scheme) and GLAS+; Organic Farming Scheme, Locally Led Agri-Environment Scheme.
- Areas of Natural Constraint Scheme.
- On Farm Capital Investments: including Targeted Agricultural Modernisation Schemes II (TAMS II) and Bioenergy Scheme.
- Knowledge Transfer Measures: Knowledge Transfer Groups, European Innovation Partnerships –Operational Groups, Continued Professional Development for Advisors, Targeted Advisory Service on Animal Health and Welfare,
- Collaborative and Quality Focused Measures: including Support for Collaborative Farming, Artisan Food Cooperation Measure, Regional Product Development Support.
- Targeted Support: including Beef Genomics and Data Programme
- LEADER programme.

The AA of the RDP 2014-2020 addressed the impacts of the various measures. It noted (in the Executive Summary) that *“The GLAS scheme had the potential to significantly affect the conservation objectives of sites with a wide range of terrestrial and aquatic habitats and species as qualifying interests. This could arise as a result of inappropriately designed management prescriptions. Minimum stocking rates under the ANC scheme could lead to overgrazing of sensitive habitats and dependent species. TAMS II and the Support for Collaborative Farming schemes could support intensification, leading to negative effects on water quality related conservation objectives of aquatic qualifying interests. Building developments under LEADER or TAMS II had the potential for significant effects on the conservation objectives of a wide range of Natura 2000 site qualifying interests. LEADER-supported tourism initiatives, rural economic planning and misdirected conservation projects also have the potential to affect a wide range of site conservation objectives. Competition with afforestation schemes by a number of measures had the potential to promote fragmentation in a number of Natura 2000 woodland habitats. Other measures operated in combination with these, as did other plans and policies, such as Food Harvest 2020 and the Forestry Development Programme 2014-2020.”*

The key means of mitigation of these *potential* impacts was via knowledge transfer measures, consultation between key stakeholders and monitoring of implementation of the measures.

It is acknowledged that the lifetime of the RDP will end before *Food Wise 2025*. The mitigation measures contained within this NIS, the Environmental Report and the proposals within the Plan itself are likely to be adjusted in response to any changes to any successor to the current RDP. The DAFM Sustainability Sub-Group that will be established to implement *Food Wise 2025* will be the body responsible for ensuring that such changes are integrated into the relevant instruments.

4.9.8 National Peatlands Strategy

The National Peatlands Strategy³¹ reflects the Government’s to draw up a national strategy on peatlands conservation and management, in consultation with bog owners and other stakeholders, to deal with long-term issues such as land management and development, restoration, conservation, tourism potential, carbon accounting and community participation in managing this resource. It notes that *“The dominant modern use of peatlands for agriculture*

³¹ <http://www.npws.ie/sites/default/files/general/Final%20National%20Peatlands%20Strategy.pdf>

has been for grazing, principally sheep, on blanket bogs.” Historic problems of overgrazing has diminished in the last few years and “Providing that the stocking levels are appropriate, grazing on blanket bogs is a sustainable activity which does not inhibit peat accumulation and should be supported.”

It makes reference to agricultural practices in the following measures:

NPS A-1 Cross Compliance (SMRs + GAEC) *“must be followed to ensure the sustainable management of all soils including peatland areas”.*

NPS A 2 Sustainable grazing of commonages.

NPS A 3 Possibility of enhanced peatlands measure in the RDP 2014-2020

NPS A 4 Support for farmers *“to be considered restricted by the requirements of the Habitats Directive in farmed peatlands”.*

NPS A 5 *“A code of best practice will be established regarding the use of fire as a land management tool, to avoid accidental damage and to limit environmental harm.”*

The Strategy also notes the need to re-assess the use of peat in growing media and “compost” in the horticulture sector. It is noted that 2.6million cubic metres of peat are extracted for horticultural use every year.

NPS A 6 *“A review of the use of peat in the horticultural industry will be undertaken.”*

With regard to planting forestry on peatlands, the Strategy notes *“in 2008, 43% or 300,070 ha of the total forest estate was located on peat soils with the majority being on blanket bog (218,850 ha) and remainder on basin peat (raised bogs, fens and swamps) (74,080 ha) and cutaway peat (8,840 ha)”.* Afforestation on peat has exponentially decreased since 2006.

Afforestation on peat can lead to loss of carbon as the organic soils are exposed, nutrients and sediment previously locked into the organic matter can be mobilised into surface waters giving rise to downstream effects. Measures to avoid planting of forestry in these areas are provided in NPS P9-11 and A-8.

4.9.9 All-Ireland Pollinator Plan 2015-2020

This is Ireland’s first formal plan that recognises the role of pollinators in the agricultural sector and the environment. It opens with: *“Irish pollinators are in decline. The problem is serious and requires immediate attention to ensure the sustainability of our food, avoid additional economic impact on the agricultural sector, and protect the health of the environment.”*

It goes on to note: *“Reduction in the diversity and/or abundance of pollinators can reduce crop yield. The annual value of pollinators for human food crops has been estimated at €153 billion world-wide (Gallai et al., 2009), £603 million in the UK (Hanley et al., 2013), and at least €53 million in Ireland (Bullock et al., 2008). Regional estimates of the value of pollinators to individual crops have also been made, with values of up to £36.7 million for apples in the UK (Garratt et al., 2014) and €3.9 million for oilseed rape in Ireland (Stanley et al., 2013).”* Therefore the value of the role of pollination cannot be treated lightly. The Draft Plan makes reference to the Food Harvest 2020 commitment to expansion of value and production and

states that for these targets to be realised then pollinators will play a key role in maximising productivity from existing and future crops.

Threats to pollinators include Habitat loss, fragmentation and degradation, declines in wildflowers, pests and disease, agrochemicals, climate change. On the topic of use of chemical pesticide and herbicides, the Plan states “*Whilst all insecticides pose a risk to pollinators if inappropriately applied, recent concerns have focused on the risks associated with the widespread use of a class of systemic insecticides, the neonicotinoids (Goulson 2013)³². To date, there has been no field-level research on neonicotinoids and their impacts on pollinators in Ireland. The only Irish research related to pesticides and pollinators looked at organic dairy farms and found that they had higher numbers of both flowers and insects (Power and Stout, 2011)³³.*” The Plan notes that an EU neonicotinoid regulation is currently in place that sees a ban on the use of three of the neonicotinoid insecticides on flowering crops attractive to bees.

The Plan includes several actions that are relevant to the *Food Wise 2025*. Pollination services are of course crucial to many of the ecosystems represented by the Annex I habitats and therefore indirectly are important to several Annex 2 species. Relevant actions that can be incorporated into the delivery of *Food Wise 2025* include those promote incorporation of pollinator conservation actions into agri-environment schemes³⁴, incorporating pollinator friendly crops for tillage farmers, increased participation in the Organic Farming Scheme, sustainable use of pesticides, providing farmers with more information on pollinators and making information local-specific. Targets to provide support to the beekeeping industry are also provided.

It is acknowledged that the lifetime of the Plan will end before *Food Wise 2025*. The mitigation measures contained within this NIS, the Environmental Report and the proposals within the Plan itself are likely to be adjusted in response to any successor to the Plan. The DAFM Sustainability Sub-Group that will be established to implement *Food Wise 2025* will be the body responsible for ensuring that such changes are integrated into the relevant instruments.

4.9.10 Ireland’s Forestry Programme 2014-2020

The objective of the programme is to meet the needs of Ireland’s forestry sector and it sets down a series of measures that are the basis of the programme. These include:

- i) Afforestation and Creation of New Woodland:
- ii) NeighbourWood Scheme for support for woodlands close to home for public access.
- iii) Support for building forest roads
- iv) Support for forest holder to restore (reconstitute) and maintain forests
- v) Woodland Improvement (Thinning and Tending).
- vi) Native Woodland Conservation
- vii) Knowledge Transfer and Information Actions
- viii) Producer Group: support to create a critical mass for forestry operations and mobilising timber;

³² Goulson, D. (2013) An overview of the environmental risks posed by neonicotinoid insecticides. *Journal of Applied Ecology*, 50, 977-987.

³³ Stout, J. C., Power, E. F., Stanley, D. A. & Mullen, S. A. (2011) Pollinators and pollination networks in Irish farmland: implications for conservation of pollination services. *Conserving Farmland Biodiversity: Lessons Learned and Future Prospects* (eds D. Ó hUallacháin & J. A. Finn), pp. 34- 35. Teagasc, Wexford, Ireland.

³⁴ The Plan notes “Pollinator friendly actions and prescriptions have been incorporated into the new Green Low Carbon Agri-Environment Scheme (GLAS) in the Republic of Ireland, and the Environmental Farming Scheme (EFS) in Northern Ireland.”

- ix) Innovative Forestry Technology: support for early adopters of new technology e.g. variable tyre systems, inventory equipment.
- x) Forest Genetic Reproductive Material
- xi) Forest Management Plans.

The Programme underwent a full Appropriate Assessment. The outcomes of the assessment led to mitigation measures being proposed that mostly consisted of recommendations for avoidance of certain habitats and species at the site-specific level and for carrying out specific habitat and species surveys before implementation at the site level.

It is acknowledged that the lifetime of the Forestry Programme will end before *Food Wise 2025*. The mitigation measures contained within this NIS, the Environmental Report and the proposals within the Plan itself are likely to be adjusted in response to any successor to the current Forestry Programme. The DAFM Sustainability Sub-Group that will be established to implement *Food Wise 2025* will be the body responsible for ensuring that such changes are integrated into the relevant instruments.

4.9.11 Seafood Development Programme (Draft)

The Seafood Development Programme is the operation programme element of the European Maritime and Fisheries Fund (EMFF). A series of measures have been proposed including sustainable development of fisheries and aquaculture of which “Natura 2000 compliance for fisheries and aquaculture” is a proposed action. The Appropriate Assessment and Strategic Environmental Assessments are nearing completion at the time of the current assessment. It did, however highlight the potential for effects on Natura 2000 sites through the expansion of the industry in European sites. The Aquaculture and Sea-Fisheries Sectors have a system of appropriate assessment, licencing and risk assessments that address the likely significant effects of sectoral activities on European sites – see Section 6.3 and 6.4.

4.9.12 National Strategic Plan for Sustainable Aquaculture 2014-2020

The NSPA focuses on policies for the future operation of aquaculture in Ireland. It does not have a spatial focus. There are objectives for building capacity and scale in the industry and better management of current and new operations within the context of marine spatial planning. There are 24 Policy Actions that form the heart of the Draft Plan:

1. Build capacity and scale in the industry
2. Dedicated supports to new entrants to the sector
3. Support organic certification of aquaculture production
4. Aid shellfish producers significantly affected by biotoxin closures.
5. Foster knowledge, innovation and technology transfer.
6. Enhance the skills base to foster a knowledge economy.
7. Provision of expert advice to improve environmental and business performance and enhanced strategic planning by aquaculture enterprises
8. Support best husbandry and disease management practice,
9. Applied research and collaborations between industry, scientific and development bodies.
10. Development of commercial scale growing systems for novel species.
11. Application of Guiding Principles for the Sustainable Development of Aquaculture.
12. Application of scale limits and phasing in relation to the development of individual offshore salmon farms.

13. Development of an industry Code of Practice for Invasive Alien Species.
14. Continuation of Invasive Species Ireland Project in relation to aquaculture.
15. Quantify the environmental contribution of aquaculture.
16. Ensure that aquaculture monitoring is consistent with the requirements of the Marine Strategy Framework Directive.
17. Develop opportunities and constraints mapping for aquaculture taking specific account of environmental issues, Natura 2000 sites and inshore fisheries.
18. Identify marine tourism opportunities from aquaculture.
19. Study on integrated multi-trophic aquaculture and possible synergies with offshore wind farms or other marine renewable energy.
20. Study on how aquaculture contributes to communities in rural areas.
21. Progressively remove the current aquaculture licensing backlog
22. Review and revision of the aquaculture licensing process, including the applicable legal framework.
23. In the context of a reviewed process and revised legal framework, consider the phased introduction of appropriate timescales for licence determination.
24. Develop data management and information system with online aquaculture licence application and tracking functionality and spatial mapping of aquaculture sites and exclusion areas.

The AA of the NSPA notes that *“The existing licensing structure in Ireland includes Appropriate Assessment Screening (followed as necessary by full assessment), and EIA Screening of all applications also followed by a full EIA if necessary or mandatory as for marine cage salmon farming over 100 tonnes. Therefore, the site level environmental assessment process is already well established and should ensure that aquaculture developments over the period of the plan will not adversely affect the integrity of the Natura 2000 network in Ireland.”* This is an important statement in terms of recognising mechanisms whereby actions promulgated by the NSPA and also by certain elements within the current Strategy can be captured within the requirements of Article 6(3) of the EC Habitats Directive.

In a similar manner to the AA of the current Plan, the AA of the NSPA focused on the qualifying interests rather than the European sites and this list of features was taken into account in the current assessment. The conclusion of the NIS claimed that many aspects of the NSPA would result in positive impacts on European sites through the strategic streamlining of administrative procedures, increased cooperation and communication within the National Integrated Marine Plan framework and a better science-based approach.

However it was also stated that *“The only potential negative effects of measures included in the draft NSPA relate to the increase in capacity and scale in particular the expected 25% growth related to new licences as these would cover new areas potentially within designated Natura 2000 sites, however these potential impacts are fully mitigated and controlled through the measures detailed in Section 3.6 and 3.7. As explored earlier, the overall coverage of aquaculture licensed area in comparison to overall designated Natura 2000 area is close to 1%. On a national scale there is sufficient capacity to accommodate a 25% growth increase in compliance with the conservation objectives related to new licences as it would mean only small extra coverage even if all new licence applications were related to Natura 2000 areas. This scenario is unlikely and a percentage of new licences will be situated outside Natura 2000 areas and their influence zone. Any potential effects relating to new licences and siting of these areas is expected to be minimised through existing controls and management measures as well through the positive effects of the other measures contained in the draft NSPA, especially in relation to the administrative procedures and the guidance provided by the six principles as recommended by the Marine Institute.”*

It is acknowledged that the lifetime of the NSPA will end before *Food Wise 2025*. The mitigation measures contained within this NIS, the Environmental Report and the proposals within the Plan itself are likely to be adjusted in response to any successor to the current NSPA. The DAFM Sustainability Sub-Group that will be established to implement *Food Wise 2025* will be the body responsible for ensuring that such changes are integrated into the relevant instruments.

4.9.13 Commonage Framework Plans

Commonage framework plans have been drawn up for all commonage area to establish sustainable stocking rates in commonages as a result of overgrazing caused by the stimulus provided by headage payments. Framework plans are required for all area of commonage, all SACs and all Natural Heritage Areas.

The plans prescribe levels of destocking required by each commonage shareholder based on the condition of the land, number of shareholders and the size of the shares. At present, monitoring surveys show that commonages are a combination of overgrazed, undergrazed and adequately-grazed land.

DAFM and DAHG have carried out reviews of Commonage Framework Plans, and revised commonage management plans to take into account changes in the condition of commonages, land-use patterns, and agri-environmental policy will be published in due course. These revised plans would be unlikely to result in increased risk of likely significant effects on European sites as their overall purpose is to ensure sustainable grazing. They do not seem to have had AA undertaken as they are “*directly connected with or necessary to the management of the [Natura 2000] site*” (Article 6(3)) and are therefore exempt.

4.9.14 Basic Farm Payment Scheme

See 4.8.1 above.

4.9.15 GLAS

GLAS (Green Low-Carbon Agri-Environment Scheme) and GLAS+ schemes have the overall objective of promoting ways of using agricultural land compatible with:

- the protection and improvement of the environment and achieving water quality, climate change and biodiversity objectives;
- the conservation of high nature value (HNV) farmed environments both within and outside of designated Natura 2000 sites;
- the use of nutrient management planning in farming practice.
- To foster knowledge transfer in the area of sustainable environmental farming systems.

GLAS is a successor to REPS, AEOS and the NPWS Farm Plan Schemes and will be the main tool by which ecological protection and enhancement can be achieved at the farm-scale. The scheme is expected to commence on October 1st 2015 and each contract will last for 5 years. Entry to the scheme is managed over three tiers with farmers having “Priority Environmental Assets and Actions (PEA)” given priority entry to the Scheme under tiers 1 and 2, with tier 3 containing a list of general actions. Ranking and selection criteria will apply to determine the order of entry, in the event that the scheme is oversubscribed. Farmers having lands overlapping with European site boundaries would be one of the categories fitting PEA. At the heart of the scheme is a list of actions that the farmer will be paid to implement. It should be

noted that payments are action-driven, i.e. based on delivery of prescriptions, rather than results-based.

The actions include a range of measures relevant to protection of European sites and are reproduced overleaf. Details are provided by DAFM on the implementation of each action.

The GLAS scheme itself has not undergone AA Screening but has been addressed under the assessment of the RDP (See Section 4.9.7 above).

Action	€ per metre/year	€ per ha/year	€ per unit/year	€ per m ³ /year
Arable grass margins				
a. 3 metre margin	€0.35			
b. 4 metre margin	€0.50			
c. 6 metre margin	€0.70			
Bat boxes			€13	
Bird Boxes			€6	
Commonages		€120		
Conservation of solitary bees				
a. Box			€6	
b. Sand			€45	
Catch Crops		€155		
Coppicing Hedgerows	€2.20			
Environmental Management of Fallow Land		€750		
Farmland Birds				
a. Breeding Waders		€366		
b. Chough Farm Scheme		€365		
c. Corncrake		€364		
d. Geese and Swans		€205		
e. Grey Partridge	€2.10			
f. Hen Harrier		€370		
g. Twite A – Semi-natural/semi-improved grassland field management option		€375		
h. Twite B – Improved grassland field management option	€1.50			
i. Twite C – Winter feed option		€900		
Farmland habitat (private Natura sites)		€79		
Laying Hedgerows	€3.70			
Low-emission Slurry Spreading (per m ³ per year)				€1.20
Low-input Permanent Pasture		€314		
Minimum Tillage		€40		
Planting a Grove of Native Trees			€0.90	
Planting New Hedgerows	€5.00			
Protection of Archaeological Sites				
a. Grassland option			€120	
b. Tillage option			€146	
Protection of water courses (not High-status or Vulnerable)	€1.50			
Rare breeds (per LU)			€200	
Riparian margins				
a. 3 metre margin	€0.90			
b. 6 metre margin	€1.20			
c. 10 metre margin	€1.60			
d. 30 metre margin	€3.60			
Traditional hay meadow		€315		
Traditional orchards			€23.50	
Traditional stone wall maintenance	€0.70			
Wild bird cover		€900		

Figure 4: GLAS Actions receiving payment (2015)

Figures released by DAFM indicate that the uptake of the scheme will include measurements to manage over 50,000 ha of farmland habitat within European sites. Other measures to address lands outside of European sites includes measures to address geese and swans of over 6,000ha, Hen harrier habitats of over 25,000ha and over 8000km of fencing to protect watercourses from cattle disturbance. The first tranche will be revised upwards from c.27000 applicants to full participation of 50,000.

4.9.16 EU Areas of Natural Constraint Scheme

The objectives of this measure are to:

- Ensure continued agricultural land use, thereby contributing to the maintenance of a viable rural society
- Maintain the countryside
- Maintain and promoting sustainable farming systems, which in particular take account of environmental protection requirements.

Under the 2015 Scheme, €195 million will be paid to farmers supplying aid to those farming in Areas of Natural constraint³⁵. It replaces the Less Favoured Areas Scheme. Payment rates are linked to disadvantage category: more severely handicapped, less severely handicapped or mountain type land. Disadvantaged Areas are to be redesignated as ANCs strictly according to biophysical criteria (soil drainage, slope etc) by 2018. This may change the designation of areas and the structure of the ANC scheme in ways yet to be determined.

4.9.17 Targeted Agricultural Modernisation Schemes II (TAMS II)

This scheme is targeted toward encouraging investment in priority areas such as dairy equipment, slurry storage, low-emission spreading equipment, animal housing, and pig and poultry investment in energy, water meters and medicine dispensers. Where these investments are related to new structures that require planning permission then the Planning and Development (Amendment) Act 2010 would be the mechanism by which AA screening would take place to ensure protection of European sites.

³⁵ <http://www.agriculture.gov.ie/media/migration/press/pressreleases/2015/may/PR812015060515.pdf>

5 IDENTIFICATION AND ASSESSMENT OF POTENTIAL IMPACTS OF AGRIFOOD 2025

5.1 Approach to Assessment

The approach to the assessment of impacts involved the review of the text provided by the sectoral groups as it was produced. A list of generic impacts was generated by the AA team to describe the *potential* impacts that could take place. This was assuming that there were no checks or safeguards in place to guard against these occurring. This is of course, not a realistic scenario but it does allow the assessment process to then identify if there are such existing safeguards to address the potential impacts. Where there were gaps in the safeguards then the AA team flagged up these deficiencies to the sectoral groups.

Section 5.2 presents a summary of the potential impacts of the entire *Food Wise 2025*.

The full assessment of 72 proposed actions is actually presented in Appendix B. Both potential positive and negative impacts on the integrity of European sites were flagged at this stage to the sectoral groups, the SEA team and DAFM.

Section 6 then presents the safeguards and mitigation measures that address these potential impacts of the Plan.

5.2 Summary of Potential Impacts

- Of 204 actions that were identified after reviewing the text of the draft and final versions of the Plan, only 11 were regarded to pose potential adverse impacts on European sites (before any safeguards and mitigation measures were taken into account- see Section 6). Safeguards and mitigation measures have been identified for all of these potential impacts.

The potential impacts that were identified were as follows:

- Potential impacts on coastal, estuarine and other habitats and species due to proposals in the **Seafood Sector** to promote new research and development into new seafood-based products including wild caught fish and farmed seaweeds. If such developments took place within European sites or adjacent to them in the absence of any safeguards then it could theoretically result in removal of species that are representative of Annex I habitats or the habitats themselves as well as direct and indirect on species that may be qualifying interests for the European sites.
- Within the **beef sector**, a focus on kilograms of beef produced per hectare was identified (in isolation) as a potential adverse impact if this emphasis resulted in localised intensification. Potential impacts would result from imposing pressure on either land availability for extra livestock or increasing stocking densities could put pressure on grass production.
- Whilst there was not predicted to be any increase in area under **tillage** as a result of the Plan and also that most tillage is not in European sites, it was noted that some tillage and grassland areas outside European sites provide supporting habitat for geese and other bird species that form qualifying interests for SPAs. The draft actions had the potential to pose potential adverse impacts on the integrity of European sites if the changes in the type of crop would affect supporting roles

played for European sites. Species such as Whooper Swan and Greenland White Fronted Geese rely upon key “stepping-stone” sites across the country to reach their key feeding and overwintering grounds. Therefore even though these important stepping-stone sites are outside of the European sites they are deemed to be crucial resources to maintain the species’ conservation status and to support the European site populations. The expansion of the dairy production sector could also pose pressure on land availability and grass production in a similar manner.

- Within the **Forestry sector** there was a proposed action to promote processing of wood products within Ireland. In the absence of any safeguards the impact of increased wood processing, particularly those that require use of treatment chemicals such as dye and preservatives, on the integrity of European sites could be negative depending on the location of the processing facilities. Whilst the most recent EPA water quality report forwards the view that there are very few incidences of exceedances of limits of hazardous chemicals concentrations in surface and groundwater, there is still an inherent risk present.
- Over 50 actions that were assessed were deemed to offer neutral impacts – i.e. were related to the European sites but would be unlikely to result in any perceptible change. These include draft actions in the Sheep, Horticulture, PCF and Alcoholic beverages sectors and the Seafood sector. Generally the linkages between the proposed actions and the European sites was weak to the extent that such impacts, if they did occur, would be barely perceptible and not likely to lead to impacts on integrity of European sites.
- The majority of actions were regarded to offer positive impacts on European sites. These included focus on soil, grassland and nutrient management, promotion of agri-environment schemes, promotion of research in climate change responses, breeding and genetic research and development and knowledge transfer.
- There were several draft actions that could not be labelled as having a specific impact type as this depended on implementation at a more local level. Two of these related to the potential increase in afforestation which is hard to predict where it will occur. Other “undetermined” or “uncertain” impacts included those relating to soil drainage and grassland management where either positive or negative impacts could occur depending on local conditions.
- Several proposed actions had no relevant direct or indirect linkages to European sites and no potential impacts were predicted.

6 SAFEGUARDS AND MITIGATION MEASURES THAT WILL APPLY TO POTENTIAL ADVERSE IMPACTS

After having identified potential impacts of the Plan, it was then necessary to propose mitigation measures that would address the potential adverse impacts on European sites. Firstly the existing legal requirements and secondly the non-statutory requirements which address the potential impacts were examined.

6.1 Statutory Management Requirements

As stated earlier, Cross compliance includes 13 Statutory Management Requirements (SMRs) which cover the relevant environmental legislation.

Of most direct relevance, SMR2 (Birds Directive) and SMR3 (Habitats Directive) require compliance with the provisions of the Birds and Habitats Directives, including carrying out “activities requiring consent (ARC)” or “Notifiable Actions” within on near to European sites 2000 sites. SMR1 requires compliance with the provisions of the Nitrates Directive, including requirements on the storage and application of slurry and other organic and chemical fertilisers.

Notifiable actions cover a range of activities that could result from the implementation of the Plan and therefore it acts as an important safeguard. Activities such as increasing fertiliser application (organic and inorganic), pesticides, reseeding, drainage, vegetation control and other work are all controlled by Regulation 28 of the Birds and Habitats Regulations 2011 which prevents such activities going ahead that would have an adverse effect on these sites.

Carrying out a Notifiable Action without permission from DAHG may result in Basic Farm Payment penalties. If an applicant is found to be in breach of Cross Compliance through negligence, a penalty of 3% will normally apply but this can be reduced to 1% or increased to 5% depending on the extent, severity and permanence of the non-compliance.

The EIA Agriculture Regulations 2011 also act as a control over changes in land use outside of European sites. This is particularly important for changes that may affect birds using lands outside of European sites such as changes in tillage practice as described in Section 5. Farmers may wish to carry out clearance, drainage and other work to put them into good agricultural condition, possibly with negative consequences for nearby European sites and these must be screened for the need to undertake an EIA by DAFM. According to DAFM literature on the EIA Agriculture Regulations, the EIA screening also covers the need to undertake an AA:

“Where DAFM, following screening, considers that the project could have a significant effect on a European site (e.g. SAC, SPA), the application for consent must be accompanied by a Natura impact statement (NIS). In some instances, only an NIS may be required.”³⁶

Therefore some of the potential impacts in the beef and tillage sectors such as changing crop type and intensification of grass production would, in theory, be captured at the local level by these provisions. The RDP notes that the system of assessing Notifiable Actions also addresses potential in-combination effects of intensification due to the Targeted Agricultural Modernisation Schemes II (TAMS II).

³⁶ Environmental Impact Assessment (Agriculture) Regulations 2011 Guide for Farmers, DAFM
<https://www.agriculture.gov.ie/media/migration/ruralenvironment/environment/environmentalimpactassessment/EIAGuideforFarmers200212.pdf>

GAEC standards include conservation of landscape features, such as hedges, ponds and field margins, in addition to other standards on soil erosion, burning and watercourse protection. GAEC standards will significantly reduce the likelihood of over/undergrazing and land abandonment in European sites, as agricultural activity must be maintained if land is to be eligible for BPS and other payments. GAEC standards also exclude agriculturally unproductive land from BPS eligibility. Ineligible land includes lakes, watercourses, woodland, rock and land not being farmed.

6.2 Green, Low Carbon Agri Environment Scheme (GLAS)

The GLAS and GLAS+ schemes are able to provide safeguards to prevent adverse effects on European sites in the following ways:

- Farmers in High Status or Vulnerable Water Areas have Tier 1 or Tier 2 access to GLAS, where Nutrient Management Plans (NMPs) are required and protection of watercourses actions must be selected. Tier 1(b) access to GLAS is provided to intensive farmers who must prepare NMPs and will have access to protection of watercourses actions. Knowledge transfer measures will enhance farmer understanding of watercourse protection and reduce potential impacts. This will address some of the potential concerns raised in the beef and tillage sectors.
- Farmers in European sites have Tier 1(a) access to GLAS so will be priority to receive funding and so the likelihood of abandonment or poor management of land within European sites is low.

However, the AA of the RDP 2014-2020³⁷ noted that the GLAS Scheme is not perfect and that whilst it addresses many of the potential adverse impacts of agriculture (not just on European sites) there are number of potential scenarios whereby adverse impacts could result from the scheme itself including:

- Management prescriptions not appropriate to particular habitats and species;
- Incorrect or inadequate advice from farm advisor;
- Inadequate understanding of management prescriptions by farmer;
- In combination impacts with other plans, policies or strategies;

The AA of the RDP emphasises the need to make each farm plan suited to the location and nature of the farm and its relevant sensitivities. Considerable weight is put upon the qualified farm advisor being able to select the correct PEA and to develop the range of measures based on previous experiences. One of the main concerns that is held over the implementation of such schemes is the fact that a) it is voluntary and may not be applied at a consistently high standard across the State and b) evaluation of such schemes in the past has not measured the actual environmental/ecological changes that have occurred. Finn and Ó hUallacháin, (2012) published a review of Ireland's Rural Environmental Protection Schemes and noted:

*“If agri-environment schemes in Ireland are to achieve the objective of halting biodiversity loss, then there is likely to be an increased prioritisation of targeted and evidence-based measures aimed at named species and habitats that are of the highest conservation concern.”*³⁸

³⁷ Rural Development Programme 2014-2020, Appropriate Assessment, May 2015.

³⁸ Finn, J.A. and Ó hUallacháin, D. 2011 A review of evidence on the environmental impact of Ireland's Rural Environment Protection Scheme (REPS). *Biology and Environment: Proceedings of the Royal Irish Academy* 112B. DOI: 10.3318/BIOE.2011.19.

The AA of the RDP notes in respect to this issue:

“As part of overarching monitoring and evaluation of the performance of the RDP 2014-2020 in meeting its objectives, a RDP Monitoring and Evaluation Steering Group will be established. Included in the group will be DAFM staff from the Agri-Environment and Structures and the Nitrates, Biodiversity and Engineering divisions and DECLG staff among others. The input of other bodies will be obtained in relation to specific issues, such as input from NPWS on the monitoring and evaluation of AESs. The Monitoring and Evaluation Steering Group is examining approaches to undertaking a baseline evaluation of Agri-Environment and Climate Change Measures in the RDP.”

It is also acknowledged that whilst a farmer may have to request EIA/AA Screening for notifiable actions, the GLAS farm plans and measures as they apply to each land holding do not undergo any form of formal AA Screening. The AA of the RDP states that

“As part of monitoring and evaluation, the parameters for a substantial baseline and follow-up study of GLAS are currently being prepared. The data arising from this study will highlight GLAS prescriptions that are not providing sufficient environmental benefits or are in fact negatively affecting a range of environmental receptors, including habitats and species that are qualifying interests of Natura 2000 sites.”

And

“It is recognised that certain GLAS actions, although directly connected with or necessary for the management of certain European sites, may in certain limited circumstances result in conflicting priorities. At implementation stage, DAFM will carry out further assessments of the compatibility of actions and applications, to identify any such potential conflicting issues, and identify any necessary mitigation to avoid such conflicts.” p105-106.

During the preparation of *Food Wise 2025*, DAFM commissioned a comprehensive independent review of the implementation of the GLAS Scheme over a five year period (2016-2021). This review will aim to record the measurable changes made at farms that are actively implementing the GLAS measures and will report back to DAFM on the evidence for the success or otherwise of the measures. Part of the selection criteria for the land holdings being selected for the review have included whether the holding is within a European Site. This review project is one such mechanism that may lead to adaptive changes to the GLAS Scheme that could benefit European sites.

6.3 AA Screening of Licencing and Permitting in the Forestry and Seafood Sectors

Both the Forestry and Seafood sectors provide for a permitting/licencing system to authorise cultivation and harvesting of natural resources. Both also have established procedures to allow the likely significant effects of these activities on European sites to be identified by carrying out AA Screening. These procedures and the AA process that may follow, are seen as important safeguards to prevent against the adverse effects of intensification.

For the Forestry Sector, the AA Screening process has been integrated into their permitting system since 2012. The general overview provided by the Forest Service states:

“Under European and national legislation, the Forest Service is required to apply an appropriate assessment procedure to applications for consent, grant approval and licensing for various forestry activities, to evaluate the project within the context of any potentially relevant SAC or SPA. This procedure involves an initial screening, and if required, an actual appropriate assessment. Initial screening is carried out to determine if there is a possibility of the project,

individually or in combination with other plans or projects, having a significant effect on an SAC or SPA. Screening takes place as part of the normal evaluation of the application by the Forest Service, typically based on the submitted application form and maps.

Screening will often conclude that there is no possibility of an impact arising, and approval may issue. In cases where the screening identifies that there is a possibility of the project having an effect on a Natura site, the applicant is required to submit a Natura Impact Statement (NIS). The NIS examines the nature of the possible impact and sets out proposed mitigation measures. On receipt of this document, the Forest Service undertakes an appropriate assessment, before arriving at a decision to regarding consent, grant approval or licensing.”³⁹

Therefore whilst the assessment of the Plan has not identified any clear statements of intensification, the AA procedures contained within it will ensure that any impacts at a local scale will be captured.

Potential adverse impacts of increased wood processing will also be captured at a local scale. Statutory requirements relating to AA screening for industrial developments and processes are covered by the Planning and Development (Amendment) Act 2010 for developments such as buildings and by the Birds and Natural Habitats Regulations 2011 for emissions and processes that are covered by Industrial Emissions licences, waste water discharge licences and other permits issued that would apply to this sector. AA Screening and possibly AA of such applications will ensure that issues such as chemical storage, discharges, emergency plans and other potential risks to European sites.

Section 4.9.6 of this Statement described the Programme of Measures that were agreed between DAFM, DAHG and the European Commission to respond positively to a case taken against the State for inadequate implementation of the Directives. One of the outcomes was the establishment of systematic screening for appropriate assessment for all aquaculture licences, building upon the licencing system already in place. Administered by the Aquaculture Foreshore Management Division, the requirement for AA screening falls under the Birds and Natural Habitats Regulations 2011. The carrying out of aquaculture is regulated by the Fisheries (Amendment) Act 1997. The licensing authority may, if it is satisfied to do so, license a person, at a place or in waters specified in the licence, to engage in aquaculture or such operations in relation to aquaculture, and subject to such conditions, as it thinks fit and specifies in the licence. Licensing of aquaculture sites also falls within this systems and regulates the placement of structures on the foreshore associated with the carrying out of licensed aquaculture.

All aquaculture licence applications undergo separate EIA screening and are also screened for the need to undertake AA. Licences contain a clear reference to the AA and the Natura 2000 interests. A Conclusion Statement is prepared by DAFM which outlines how aquaculture activities in the Natura 2000 site are being licensed in compliance with the Birds and Habitats Directives. Therefore in the context of the potential adverse impacts identified in this NIS relating to “new seafood products” and seaweed harvesting, any such strategy and activities resulting from it would require an assessment or a licence (or both) and hence be captured by AA screening at this stage.

With regard to wild capture in sea fisheries, the industry or the Minister may bring forward fishing proposals or plans which become subject to appropriate assessment. These so called Fishery Natura Plans (FNPs) may simply be descriptions of existing activities or may also include

39

<http://www.agriculture.gov.ie/media/migration/forestry/grantandpremiumschemes/schemecirculars/ForestServiceAppropriateAssessmentProcedureInfoNote140312.pdf>

modifications to activities that mitigate, prior to the assessment, perceived effects to the ecology of a designated feature in the site. Such plans undergo appropriate assessment in a process set down in the European Union (Birds and Natural Habitats)(Sea-Fisheries) Regulations.

6.4 Risk Assessments for activities in the Sea-Fisheries Sector

Fisheries activities which are not subjected to Article 6(3) may be required to undergo a risk assessment to comply with Article 6(2)[1] of the Habitats Directive. The Habitats and Birds regulations for sea fisheries are laid out in European Communities (Natural habitats and birds) (Sea-fisheries) Regulations 2013 S.I.290 of 2013. The framework for this risk assessment process has been devised by the Marine Institute[2], based on EC guidance, Fletcher (2005)[3] and from guidance provided by NPWS as applied in the appropriate assessment (Article 6.3) of fisheries and aquaculture projects and plans in Natura sites. It is proposed as a rolling series of assessments of both existing and proposed fishing activities as agreed with the EU Commission in 2009.

In the case of “unplanned” fisheries, that are not projects or plans, data on activity are collated and subject to a risk assessment against the Conservation Objectives. The Marine Institute undertakes Risk Assessment on such sea-fisheries at the request of the Minister. The risk assessment scores the sea-fisheries activities on the basis of the risk posed to the qualifying features of the relevant Natura 2000 sites in ranges from low to moderate to high. The Risk Scores assigned to the existing or proposed activities are then used to decide what type of response is required. The response may vary between “management intervention” to mitigation being “probably needed” or “required”. Mitigation is designed and implemented with stakeholder involvement taking account of the nature of the risk and of the activity in question.

[1] “Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.”

[2] A Risk Assessment Framework for Fisheries in Natura 2000 sites in Ireland (2013) v1.3
http://www.fishingnet.ie/media/fishingnet/content/fishingopportunitiesfor2014foreufishstocks/submissionsreceived/Marine%20Institute_RA_Framework_v1.3.pdf

[3] EC (2012). Common methodology for assessing the impact of fisheries on marine Natura 2000. Service Contract No. 070307/2010/578174/SER/B. DGEnv Brussels. Fletcher 2005. The application of qualitative risk assessment methodology to prioritize issues for fisheries management. ICES J. Mar. Sci. 62, 1576-1587.

7 IN-COMBINATION IMPACTS

AA must take into account the effects of a plan in combination with other plans relevant to Natura 2000 sites. Different plans operating in combination may result in adverse impacts on Natura 2000 sites that are not apparent when considered individually.

Agriculture acts in collaboration with a range of environmental resources including land, water, soil and air and in theory all plans that also interact in the same media could combine their pressures and threats at the same level (i.e. strategic, national). It is impossible to list every action that could combine with the Plan outside of the agriculture sector but a good starting point is to re-examine the plans listed below that were seen to be related to the Plan:

Europe

- Common Agricultural Policy:
 - Potential impacts are identified and addressed by the RDP 2014-2020 and have been seen to be addressed by appropriate mitigation and monitoring measures.
- Common Fisheries Policy:
 - National measures to be funded under the EMFF (European Maritime and Fisheries Fund) are identified in the Seafood Development Programme (see below) which has undergone AA Screening.
- EU Biodiversity Strategy to 2020
 - Requires a results-based approach to ensure the measurement of effectiveness of actions, which is echoed in the AA of the DRP 2014-2020.
- Water Framework Directive
 - Appropriate Assessments are carried out at a catchment level to ensure that European site issues are assessed.

Ireland

- National Biodiversity Plan
 - The thrust of this is entirely positive and would not conflict with any aspects of the Plan.
- Prioritised Action Framework for Natura 2000
 - The thrust of this is entirely positive and would not conflict with any aspects of the Plan.
- Programme of Measures Re Case C418/04 “the Birds Case”
 - The thrust of this is entirely positive and would not conflict with any aspects of the Plan.
- Rural Development Plan 2014-2020
 - The RDP presents certain aspects of intensification that will combine with the Plan at the local level and demonstrated the measures in place to address likely significant effects.
- All-Ireland Pollinator Plan 2015-2020
 - The importance of this Plan to the agriculture sector cannot be underestimated and it will support the development of agriculture and not lead adverse cumulative effects.
- National Peatlands Strategy
 - The Strategy includes measures to control the use of peat in agriculture and horticulture and represents an additional series of considerations to be taken into account at a local level.

Sectoral (National)

- Ireland's Forestry Programme 2014-2020
 - Provides positive measures including AA Screening at a local scale so will provide safeguard that will apply to implementation of the *Food Wise 2025*.
- Seafood Development Programme (Draft)
 - Provides positive measures including AA Screening at a local scale so will provide safeguard that will apply to implementation of the *Food Wise 2025*.
- National Strategic Plan for Aquaculture
 - Provides positive measures including AA Screening at a local scale so will provide safeguard that will apply to implementation of the *Food Wise 2025*.

Local

- Commonage Framework Plans
 - Provide local-scale safeguards to ensure against adverse effects of under/over grazing
- Basic Farm Payment Scheme
 - Provides a background level of compliance with SMR and GAEC which is unlikely to conflict with the Plan in combination with other safeguards such as EIA and Notifiable Actions.
- GLAS
 - Provides a flexible and targeted scheme of measures which is unlikely to conflict with the Plan in-combination with other safeguards.
- EU Areas of Natural Constraint Scheme
 - Provides continued presence in certain areas which, in the presence of other schemes
- Targeted Agricultural Modernisation Schemes II (TAMS II)
 - Unlikely to conflict with Plan when considered in-combination with other safeguards such as EIA and Notifiable Actions.

8 RECOMMENDATIONS OF THE ENVIRONMENTAL REPORT THAT OVERLAP WITH THE NATURA IMPACT STATEMENT.

The Non-technical summary of the Environmental Report states the following precis of the results of the assessment of potential impacts on biodiversity, flora and fauna:

“There are no specific growth targets within the strategy. Nonetheless growth opportunities and innovation, as a result of their uncertainty, are deemed to represent a slight negative effect on biodiversity. Broadly all other actions within Food Wise 2025 are predicted to have a perceptible or slightly positive effect on biodiversity. Further developments of the Origin Green programme will deliver moderately positive effects.

At a sectoral level proposed actions by DAFM are predicted to have a significant positive effect. At a sectoral level actions to increase soil fertility and actions which may result in unspecified increases in production levels are unpredictable and therefore deemed slightly negative. All increases in soil fertility are assumed to occur within the parameters of the Phosphorus Regulations, the Nitrates Directive, GAEC and SMRs.”

The following mitigation and monitoring measures have been extracted from the ER and are deemed to apply to the protecting against adverse effects on the integrity of European sites or the ongoing surveillance of the implementation of the Plan:

- Where farmland birds are in decline develop specific mitigation measures to preserve and sustain.
- Undertake water monitoring in areas of dairy cow number expansion.
- Monitor effects of seafood production on European designated sites.
- Increased soil fertility should be based on accurate nutrient management planning and soil testing
- Include pH target
- Advice offered by Teagasc and others needs to account for nutrient losses to water and GHG emissions
- Good water status for all water bodies is a requirement of the WFD, therefore, agricultural ‘projects’ under this Plan can only progress when it has been demonstrated that they will not result in a WFD target not being achieved.
- Farm developments in Natura 2000 sites should be assessed to ensure no significant impact on the qualifying criteria of the site.
- Focus on managing [sheep] overgrazing particularly in areas of ecological importance or in areas where water bodies are sensitive.
- Explore the GHG emissions and ammonia arising from pig production and opportunities to reduce GHG and ammonia emissions.
- Improve the management of [tillage] farms to manage environmental impact. This includes effective and sustainable use of manures and fertilisers to ensure GHG and ammonia emissions are controlled, in addition to nutrient losses to water and potential impacts on Natura 2000 sites.
- Introduce monitoring and recording of environmental management of [horticulture] farms to identify the performance of existing schemes in terms of controlling nutrient losses, GHG and ammonia emissions, and impact on Natura 2000 sites.
- Manage the environmental impacts of [horticulture] activity through the implementation of best practice considering all relevant guidance. This should ensure the implementation of nutrient management plans and managing potential impacts on important ecological habitats, particularly Natura 2000 sites.

- Incorporate the protection and management of forestry in European sites within criteria used to measure quality and performance.
- For [seafood] operations in or close to Natura 2000 sites there should be monitoring to ensure that operations are not adversely affecting integrity of Natura 2000 sites.

9 MONITORING

One of the actions proposed within *Food Wise 2025* was as follows:

“As part of the 2025 implementation phase DAFM will work closely with relevant agencies to ensure appropriate monitoring across all sectors of the agri-food industry on the environmental impacts of 2025 strategy including possible impacts at regional level. This implementation process will include evaluation and assessment of the delivery of sustainability and mitigation actions set out in the strategy report.”

DAFM have proposed to implement the *Food Wise 2025* via a Sustainability Sub-Group which will implement and monitor the recommendations of *Food Wise 2025* this NIS and the Environmental Report. The monitoring of the progress should take place at an interim stage – to be agreed by the Sub-Group- so that any adjustments to the Plan may be made. Considering that many of the related Plans and Strategies in the same sector will expire in 2020 it would seem to be common sense for a review of the Plan around the same time so that shifts in European and national policy can be considered by the industry.

The Chapter on Implementation in *Food Wise 2025* sets out the strategy toward how specific potential effects on European Sites will be monitored. The following clauses within this Chapter of the Plan are perceived to be positive measures in the context of protecting the integrity of European sites:

- *“Monitor trends in water quality, in biodiversity and climate related parameters (GHG, ammonia, nitrous oxides etc.). DAFM and its agencies will work with responsible monitoring authorities in the development of indicators for environmental sustainability.*
- *Where additional biodiversity threats are identified, such as decline in farmland birds, develop new or amend existing measures to mitigate such threats.*
- *Undertake an annual review of EPA water quality monitoring results to identify trends in nutrient loading and biological water status with regard status required under WFD in following sectors Dairy, Beef, Sheep, PCF, Forestry and Seafood. DAFM will work with EPA to monitor and identify trends at regional level, interpreting as much as feasible, sectoral impacts.*
- *Introduce catchment/regional monitoring where increased livestock numbers are anticipated by working with EPA, to ensure appropriate monitoring in areas of potential livestock increases through on-site monitoring, modelling etc.*
- *Carry out a review of EPA/Teagasc agricultural catchment assessments to monitor changes in nutrient loading.*
- *Generate an annual report detailing the results of analysis of GHG emissions arising from agriculture, including sectoral emissions and identification of trends.*
- *Annual report on disposal of animal carcasses and identify any capacity issues in waste facilities.*
- *Annual report on changes in cropping pattern and permanent pastures to monitor trends.*

- *Continue existing conditionality for new licence applications including EIA screening and stakeholder consultation.*
- *Continue screening, assessment, monitoring and reporting measures for sea-fisheries and aquaculture in compliance with EIA, Birds, Habitats and Marine Strategy Framework Directives.*
- *DAFM in consultation with other relevant government departments and state agencies to consider any emerging impacts/trends on Natura 2000 sites impacted by agricultural growth.*
- *DAFM to develop suitable monitoring programme in line with proposals under RDP 2014-2020 (GLAS) to monitor and report on the impact of RDP measures on biodiversity, Climate and water quality.*
- *The primary production research activities of national research bodies, including Teagasc and academia, to be focussed on grass land productivity, animal breeding/genetics, soil nutrient usage, animal health improvements, crop production, economic analysis of Irish agriculture, food ingredient, environmental sustainability practices, monitor effects of seafood production on European designated sites, product and process innovation.*
- *Explore research into the potential reduction of methane generation arising from cattle and roll-out appropriate mitigation*
- *Policy development should include a focus on managing (sheep) overgrazing particularly in areas of ecological importance and in areas where water bodies are sensitive.*
- *Provide funding under the Rural Development Programme to up-grade existing buildings and funding to support the construction of new housing, including the siting of new housing to avoid environmental effects, and ensure animal welfare and safety.”*

10 CONCLUSION

Food Wise 2025 was assessed in terms of the likely significant effects of implementation of the actions within the Plan, on the integrity of European Sites. The Assessment identified that the majority of the actions promoted positive behaviour and that very few provided clear links to adverse impacts on European sites. The few potential impacts were addressed by reference to the safeguards that applied to those specific sectors and impact types, at a local level. Whilst this was a strategic and national-scale series of actions, there were many different mechanisms identified whereby potential adverse impacts are addressed at a local scale.

The conclusion of the assessment of *Food Wise 2025* was that after the consideration of the mitigation measures and safeguards currently in place, there would be no adverse impacts on the integrity of European sites.

Key References

Note: Other references relevant to specific quotes and citations are provided in footnotes in the text.

Colhoun K. & Cummins S. (2014). *Birds of Conservation Concern in Ireland 2014–2019*. BirdWatch Ireland.

Council of the European Communities (1992) *Council Directive of 21 May 1992 on The Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC)*. O. J. L 206/35, 22 July 1992.

DAHG (2011). *Actions for Biodiversity, National Biodiversity Plan*.

DoEHLG (2010) *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities* (Department of Environment, Heritage and Local Government, Rev Feb 2010).

Environmental Protection Agency (2011). EPA ENVision Service (internet-based environmental information portal). Available online at: <http://gis.epa.ie/Envision>

European Commission (2000) *Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC* (EC Environment Directorate-General, 2000); hereinafter referred to as “MN2000”

European Commission (2000). *Communication from the Commission on the precautionary principle*

European Commission (2001) *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission Environment Directorate-General);

European Commission (EC) (2007). *Guidance Document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the Concepts of Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence*. Opinion of the European Commission.

European Parliament and European Council (2009). *Directive 2009/147/EC of 30th November 2009 on the Conservation of Wild Birds (2009/147/EC)*. O.J. L20/7, 26th January 2010.

Geological Survey of Ireland (2011). *GSI Datasets Public Viewer*. Available online at <http://www.gsi.ie>

NPWS (2010). Circular NPW 1/10 & PSSP 2/10 *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities*. (Department of Environment, Heritage and Local Government, March 2010).

NPWS (2013a). *The Status of EU Protected Habitats and Species in Ireland*. Species Assessments Volume 2, Version 1.0. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

NPWS (2013b). *The Status of EU Protected Habitats and Species in Ireland.* Species Assessments Volume 3, Version 1.0. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Appendix A: ACTIVITIES THAT HAVE POTENTIAL TO IMPACT ON SPECIAL AREAS OF CONSERVATION (SAC)

ACTIVITIES THAT HAVE POTENTIAL TO IMPACT ON SPECIAL AREAS OF CONSERVATION (SAC)		
Activity	Qualifying Interest	Conservation Status
Abandonment / lack of mowing (A03.03)	6410 Molinia meadows	Bad
	6510 Lowland hay meadows	Bad
Abandonment of pastoral systems, lack of grazing (A04.03)	2130 Fixed dunes (grey dunes)*	Bad
	2140 Decalcified Empetrum dunes*	Inadequate
	2150 Decalcified dune heath*	Inadequate
	2170 Dunes with creeping willow	Inadequate
	2190 Dune slack	Inadequate
	21A0 Machair*	Bad
	3180 Turloughs*	Inadequate
	4030 Dry heaths	Bad
	4060 Alpine and subalpine heath	Bad
	5130 Juniper scrub	Inadequate
	6130 Calaminarian grassland	Inadequate
	6210 Orchid-rich calcareous grassland*	Bad
	6410 Molinia meadows	Bad
	7140 Transition mires	Bad
	7210 Cladium fen*	Bad
	7220 Petrifying springs*	Inadequate
	7230 Alkaline fens	Bad
	8240 Limestone pavement*	Inadequate
	1013 Geyer's whorl snail (<i>Vertigo geyeri</i>)	Inadequate
	1014 Narrow-mouthed whorl snail (<i>Vertigo angustior</i>)	Inadequate
	1016 Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>)	Inadequate
	1065 Marsh Fritillary (<i>Euphydryas aurinia</i>)	Inadequate
	1528 Marsh Saxifrage (<i>Saxifraga hirculus</i>)	Favourable
Agricultural intensification (A02.01)	2130 Fixed dunes (grey dunes)*	Bad

	2140 Decalcified Empetrum dunes*	Inadequate
	2150 Decalcified dune heath*	Inadequate
	2170 Dunes with creeping willow	Inadequate
	2190 Dune slack	Inadequate
	21A0 Machair*	Bad
	3180 Turloughs*	Inadequate
	4010 Wet heath	Bad
	4030 Dry heaths	Bad
	6210 Orchid-rich calcareous grassland*	Bad
	6410 Molinia meadows	Bad
	6430 Hydrophilous tall herb	Bad
	6510 Lowland hay meadows	Bad
	7130 Blanket bog (active)*	Bad
	7140 Transition mires	Bad
	7210 Cladium fen*	Bad
	7230 Alkaline fens	Bad
	1024 Kerry Slug (<i>Geomalacus maculosus</i>)	Favourable
	1065 Marsh Fritillary (<i>Euphydryas aurinia</i>)	Inadequate
	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
Agriculture activities not referred to above (A11)	1210 Annual vegetation of drift lines	Inadequate
Air pollution, air-borne pollutants (H04)	4010 Wet heath	Bad
	4030 Dry heaths	Bad
	4060 Alpine and subalpine heath	Bad
	6430 Hydrophilous tall herb	Bad
	7130 Blanket bog (active)*	Bad
	7150 Rhynchosporion depressions	Inadequate
	8110 Siliceous scree	Inadequate
	8120 Calcareous scree	Inadequate
	8210 Calcareous rocky slopes	Inadequate
	8220 Siliceous rocky slopes	Inadequate

Anthropogenic reduction of habitat connectivity (J03.02)	1065 Marsh Fritillary (<i>Euphydryas aurinia</i>)	Inadequate
Artificial planting on open ground (non-native trees) (B01.02)	4010 Wet heath	Bad
	4030 Dry heaths	Bad
	6410 Molinia meadows	Bad
	7110 Raised bog (active)*	Bad
	7120 Degraded raised bogs	Bad
	7130 Blanket bog (active)*	Bad
	7140 Transition mires	Bad
	7150 Rhynchosporion depressions	Inadequate
	7210 Cladium fen*	Bad
	7220 Petrifying springs*	Inadequate
	7230 Alkaline fens	Bad
	1024 Kerry Slug (<i>Geomalacus maculosus</i>)	Favourable
	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
Damage by herbivores (including game species) (K04.05)	4010 Wet heath	Bad
	4030 Dry heaths	Bad
	5130 Juniper scrub	Inadequate
	7130 Blanket bog (active)*	Bad
Diffuse groundwater pollution due to agricultural and forestry activities (H02.06)	3140 Hard water lakes	Bad
Diffuse groundwater pollution due to agricultural and forestry activities (H02.06)	3180 Turloughs*	Inadequate
	3270 Chenopodium rubri	Favourable
	7140 Transition mires	Bad
	7230 Alkaline fens	Bad
	1230 Sea cliffs	Inadequate

	3110 Lowland oligotrophic lakes	Bad
	3130 Upland oligotrophic lakes	Inadequate
	3140 Hard water lakes	Bad
	3150 Natural eutrophic lakes	Inadequate
	3160 Dystrophic lakes	Inadequate
	3260 Floating river vegetation	Inadequate
	7140 Transition mires	Bad
	7210 Cladium fen*	Bad
	7220 Petrifying springs*	Inadequate
	7230 Alkaline fens	Bad
	1029 Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Bad
	1096 Brook Lamprey (<i>Lampetra planeri</i>)	Favourable
	1099 River Lamprey (<i>Lampetra fluviatilis</i>)	Favourable
	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
	1833 Slender Naiad (<i>Najas flexilis</i>)	Inadequate
	1990 Nore Freshwater Pearl Mussel (<i>Margaritifera durrovensis</i>)	Bad
Erosion (K01.01)	1150 Lagoons*	Bad
	1310 Salicornia mud	Inadequate
	1330 Atlantic salt meadows	Inadequate
	1410 Mediterranean salt meadows	Inadequate
	1420 Halophilous scrub	Bad
	2110 Embryonic shifting dunes	Inadequate
	2120 Marram dunes (white dunes)	Inadequate
	2130 Fixed dunes (grey dunes)*	Bad
	2170 Dunes with creeping willow	Inadequate
	2190 Dune slack	Inadequate

	4010 Wet heath	Bad
	4030 Dry heaths	Bad
	4060 Alpine and subalpine heath	Bad
	5130 Juniper scrub	Inadequate
	6130 Calaminarian grassland	Inadequate
	7130 Blanket bog (active)*	Bad
	7150 Rhynchosporion depressions	Inadequate
	8110 Siliceous scree	Inadequate
Fertilisation (A08)	1150 Lagoons*	Bad
	21A0 Machair*	Bad
	6210 Orchid-rich calcareous grassland*	Bad
	6230 Species-rich Nardus upland grassland*	Bad
	6410 Molinia meadows	Bad
	6510 Lowland hay meadows	Bad
	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
Fishing and harvesting aquatic resources (F02)	1110 Sandbanks	Favourable
	1130 Estuaries	Inadequate
	1140 Tidal mudflats	Inadequate
	1160 Large shallow inlets and bays	Inadequate
	1170 Reefs	Bad
	1103 Twaite Shad (<i>Alosa fallax fallax</i>)	Bad
	1349 Bottle-Nosed Dolphin (<i>Tursiops truncatus</i>)	Favourable
	1351 Harbour Porpoise (<i>Phocoena phocoena</i>)	Favourable
	1364 Grey Seal (<i>Halichoerus grypus</i>)	Favourable
	1365 Common Seal (<i>Phoca vitulina vitulina</i>)	Favourable
Fishing harbours (D03.01.03)	1170 Reefs	Bad
Forest and Plantation management & use (B02)	2130 Fixed dunes (grey dunes)*	Bad
	2170 Dunes with creeping willow	Inadequate
	2190 Dune slack	Inadequate
	21A0 Machair*	Bad

	6230 Species-rich <i>Nardus</i> upland grassland*	Bad
	6410 <i>Molinia</i> meadows	Bad
	8240 Limestone pavement*	Inadequate
	1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)	Favourable
Forest planting on open ground (B01)	6230 Species-rich <i>Nardus</i> upland grassland*	Bad
	6410 <i>Molinia</i> meadows	Bad
	1065 Marsh Fritillary (<i>Euphydryas aurinia</i>)	Inadequate
Forest planting on open ground (native trees) (B01.01)	1024 Kerry Slug (<i>Geomalacus maculosus</i>)	Favourable
Forest replanting (B02.01)	1024 Kerry Slug (<i>Geomalacus maculosus</i>)	Favourable
Forest replanting (non native trees) (B02.01.02)	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
Forestry clearance (B02.02)	8310 Caves	Favourable
	1024 Kerry Slug (<i>Geomalacus maculosus</i>)	Favourable
Grassland removal for arable land (A02.03)	3180 Turloughs*	Inadequate
Grassland removal for arable land (A02.03)	6510 Lowland hay meadows	Bad
Grazing (A04)	6130 Calaminarian grassland	Inadequate
	6430 Hydrophilous tall herb	Bad
	7110 Raised bog (active)*	Bad
	7120 Degraded raised bogs	Bad
	1421 Killarney Fern (<i>Trichomanes speciosum</i>)	Favourable
	1528 Marsh Saxifrage (<i>Saxifraga hirculus</i>)	Favourable
Grazing in forests/ woodland (B06)	91A0 Old oak woodlands	Bad
	91D0 Bog woodland*	Favourable
	91E0 Residual alluvial forests*	Bad
	91J0 <i>Taxus baccata</i> woods*	Bad
Intensive cattle grazing (A04.01.01)	1310 <i>Salicornia</i> mud	Inadequate
	1330 Atlantic salt meadows	Inadequate
	1410 Mediterranean salt meadows	Inadequate
	1420 Halophilous scrub	Bad

	3180 Turloughs*	Inadequate
	3270 <i>Chenopodium rubri</i>	Favourable
	5130 Juniper scrub	Inadequate
	6210 Orchid-rich calcareous grassland*	Bad
	6410 <i>Molinia</i> meadows	Bad
Intensive fish farming, intensification (F01.01)	1160 Large shallow inlets and bays	Inadequate
	1170 Reefs	Bad
	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
Intensive grazing (A04.01)	2110 Embryonic shifting dunes	Inadequate
	2120 Marram dunes (white dunes)	Inadequate
	2130 Fixed dunes (grey dunes)*	Bad
	2170 Dunes with creeping willow	Inadequate
	2190 Dune slack	Inadequate
	21A0 Machair*	Bad
	7220 Petrifying springs*	Inadequate
	8240 Limestone pavement*	Inadequate
	91D0 Bog woodland*	Favourable
	1013 Geyer's whorl snail (<i>Vertigo geyeri</i>)	Inadequate
	1014 Narrow-mouthed whorl snail (<i>Vertigo angustior</i>)	Inadequate
	Intensive mixed animal grazing (A04.01.05)	5130 Juniper scrub
Intensive mowing or intensification (A03.01)	5130 Juniper scrub	Inadequate
Intensive sheep grazing (A04.01.02)	1310 <i>Salicornia</i> mud	Inadequate
	1330 Atlantic salt meadows	Inadequate
	1420 Halophilous scrub	Bad
	5130 Juniper scrub	Inadequate
	1014 Narrow-mouthed whorl snail (<i>Vertigo angustior</i>)	Inadequate
	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
Marine and Freshwater Aquaculture (F01)	1150 Lagoons*	Bad
	1365 Common Seal (<i>Phoca vitulina vitulina</i>)	Favourable
	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate

Non intensive cattle grazing (A04.02.01)	2140 Decalcified Empetrum dunes*	Inadequate
	2150 Decalcified dune heath*	Inadequate
	4010 Wet heath	Bad
	4030 Dry heaths	Bad
	4060 Alpine and subalpine heath	Bad
	5130 Juniper scrub	Inadequate
	7130 Blanket bog (active)*	Bad
Non intensive mixed animal grazing (A04.02.05)	5130 Juniper scrub	Inadequate
Non intensive sheep grazing (A04.02.02)	4010 Wet heath	Bad
	4030 Dry heaths	Bad
	4060 Alpine and subalpine heath	Bad
	6230 Species-rich Nardus upland grassland*	Bad
	7130 Blanket bog (active)*	Bad
	7150 Rhynchosporion depressions	Inadequate
	8110 Siliceous scree	Inadequate
	8120 Calcareous scree	Inadequate
	8210 Calcareous rocky slopes	Inadequate
	8220 Siliceous rocky slopes	Inadequate
	1230 Sea cliffs	Inadequate
Pollution to groundwater (point sources and diffuse sources) (H02)	21A0 Machair*	Bad
	3180 Turloughs*	Inadequate
Reduced fecundity/ genetic depression in animals (inbreeding) (K05.01)	1103 Twaité Shad (<i>Alosa fallax fallax</i>)	Bad
Restructuring agricultural land holding (A10)	21A0 Machair*	Bad
	7140 Transition mires	Bad
	7210 Cladium fen*	Bad
	7230 Alkaline fens	Bad
	1029 Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Bad
Stock feeding (A05.02)	3180 Turloughs*	Inadequate
	6210 Orchid-rich calcareous grassland*	Bad
	8240 Limestone pavement*	Inadequate

	1014 Narrow-mouthed whorl snail (<i>Vertigo angustior</i>)	Inadequate
Surface water abstractions for agriculture (J02.06.01)	3150 Natural eutrophic lakes	Inadequate
	7220 Petrifying springs*	Inadequate
Use of fertilizers (forestry) (B05)	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
Water abstractions from groundwater (J02.07)	21A0 Machair*	Bad
	3110 Lowland oligotrophic lakes	Bad
	3130 Upland oligotrophic lakes	Inadequate
	3150 Natural eutrophic lakes	Inadequate
	3160 Dystrophic lakes	Inadequate
	4010 Wet heath	Bad
	6410 Molinia meadows	Bad
	7110 Raised bog (active)*	Bad
	7120 Degraded raised bogs	Bad
	7130 Blanket bog (active)*	Bad
	7140 Transition mires	Bad
	7150 Rhynchosporion depressions	Inadequate
	7210 Cladium fen*	Bad
	7220 Petrifying springs*	Inadequate
	7230 Alkaline fens	Bad
	1013 Geyer's whorl snail (<i>Vertigo geyeri</i>)	Inadequate
	1029 Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Bad
	1833 Slender Naiad (<i>Najas flexilis</i>)	Inadequate
1990 Nore Freshwater Pearl Mussel (<i>Margaritifera durrovensis</i>)	Bad	
Water abstractions from surface waters (J02.06)	7140 Transition mires	Bad
	7210 Cladium fen*	Bad
	7230 Alkaline fens	Bad

	1106 Atlantic Salmon (<i>Salmo salar</i>)	Inadequate
--	---	------------

ACTIVITIES THAT HAVE POTENTIAL TO IMPACT ON SPECIAL PROTECTION AREAS (SPA)				
Pressures & Threats	Qualifying Interest	Conservation Status	Season	Annex I - Yes/No
A02 - modification of cultivation practices	A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	B - Breeding	Yes
	A346 Cough (<i>Pyrhcorax pyrrhcorax</i>)	Amber	B - Breeding	Yes
	A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)	Amber	W - Winter	No
	A140 Golden Plover (<i>Pluvialis apricaria</i>)	Red	W - Winter	Yes
	A156 Black-tailed Godwit (<i>Limosa limosa</i>)	Amber	W - Winter	No
	A043 Greylag Goose (<i>Anser anser</i>)	Amber	W - Winter	No
	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Amber	W - Winter	Yes
	A142 Lapwing (<i>Vanellus vanellus</i>)	Red	W - Winter	No
	A098 Merlin (<i>Falco columbarius</i>)	Amber	B - Breeding	Yes
	A082 Hen Harrier (<i>Circus cyaneus</i>)	Amber	B - Breeding	Yes
	A082 Hen Harrier (<i>Circus cyaneus</i>)	Amber	W - Winter	Yes
	A038 Whooper Swan (<i>Cygnus cygnus</i>)	Amber	W - Winter	Yes
	A037 Bewick's Swan (<i>Cygnus columbianus bewickii</i>)	Red	W - Winter	Yes
A03 - mowing / cutting of grassland	A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	B - Breeding	Yes
A03.01 - intensive mowing or intensification	A122 Corncrake (<i>Crex crex</i>)	Red	B - Breeding	Yes
A03.03 - abandonment / lack of mowing	A122 Corncrake (<i>Crex crex</i>)	Red	B - Breeding	Yes
A04 - grazing	A179 Black-headed Gull (<i>Larus ridibundus</i>)	Red	B - Breeding	No
	A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	B - Breeding	Yes
	A182 Common Gull (<i>Larus canus</i>)	Amber	B - Breeding	No

	A346 Chough (<i>Pyrrhocorax pyrrhocorax</i>)	Amber	B - Breeding	Yes
	A140 Golden Plover (<i>Pluvialis apricaria</i>)	Red	B - Breeding	Yes
	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Amber	W - Winter	Yes
	A065 Common Scoter (<i>Melanitta nigra</i>)	Red	B - Breeding	No
	A001 Red-throated Diver (<i>Gavia stellata</i>)	Amber	B - Breeding	Yes
A04.01 - intensive grazing	A122 Corncrake (<i>Crex crex</i>)	Red	B - Breeding	Yes
A06 - annual and perennial non-timber crops	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Amber	W - Winter	Yes
A08 - Fertilisation	A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	B - Breeding	Yes
A11 - Agriculture activities not referred to above	A045 Barnacle Goose (<i>Branta leucopsis</i>)	Amber	W - Winter	No
	A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)	Amber	W - Winter	No
	A043 Greylag Goose (<i>Anser anser</i>)	Amber	W - Winter	No
	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Amber	W - Winter	Yes
	A038 Whooper Swan (<i>Cygnus cygnus</i>)	Amber	W - Winter	Yes
	A229 Kingfisher (<i>Alcedo atthis</i>)	Amber	B - Breeding	Yes
B01 - forest planting on open ground	A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	B - Breeding	Yes
	A140 Golden Plover (<i>Pluvialis apricaria</i>)	Red	B - Breeding	Yes
	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Amber	W - Winter	Yes
	A098 Merlin (<i>Falco columbarius</i>)	Amber	B - Breeding	Yes
	A082 Hen Harrier (<i>Circus cyaneus</i>)	Amber	B - Breeding	Yes
	A082 Hen Harrier (<i>Circus cyaneus</i>)	Amber	W - Winter	Yes
	A037 Bewick's Swan (<i>Cygnus columbianus bewickii</i>)	Red	W - Winter	Yes

B02 - Forest and Plantation management & use	A082 Hen Harrier (<i>Circus cyaneus</i>)	Amber	B - Breeding	Yes
	A098 Merlin (<i>Falco columbarius</i>)	Amber	B - Breeding	Yes
F01 - Marine and Freshwater Aquaculture	A137 Ringed Plover (<i>Charadrius hiaticula</i>)	Green	W - Winter	No
	A144 Sanderling (<i>Calidris alba</i>)	Green	W - Winter	No
	A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	W - Winter	Yes
	A169 Turnstone (<i>Arenaria interpres</i>)	Green	W - Winter	No
	A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)	Amber	W - Winter	No
	A048 Shelduck (<i>Tadorna tadorna</i>)	Amber	W - Winter	No
	A054 Pintail (<i>Anas acuta</i>)	Red	W - Winter	No
	A130 Oystercatcher (<i>Haematopus ostralegus</i>)	Amber	W - Winter	No
	A140 Golden Plover (<i>Pluvialis apricaria</i>)	Red	W - Winter	Yes
	A141 Grey Plover (<i>Pluvialis squatarola</i>)	Amber	W - Winter	No
	A143 Knot (<i>Calidris canutus</i>)	Amber	W - Winter	No
	A156 Black-tailed Godwit (<i>Limosa limosa</i>)	Amber	W - Winter	No
	A157 Bar-tailed Godwit (<i>Limosa lapponica</i>)	Amber	W - Winter	Yes
	A160 Curlew (<i>Numenius arquata</i>)	Red	W - Winter	No
	A162 Redshank (<i>Tringa totanus</i>)	Red	W - Winter	No
	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Amber	W - Winter	Yes
	A142 Lapwing (<i>Vanellus vanellus</i>)	Red	W - Winter	No
	A050 Wigeon (<i>Anas penelope</i>)	Red	W - Winter	No
	A067 Goldeneye (<i>Bucephala clangula</i>)	Red	W - Winter	No

	A069 Red-breasted Merganser (<i>Mergus serrator</i>)	Green	W - Winter	No
	A005 Great Crested Grebe (<i>Podiceps cristatus</i>)	Amber	W - Winter	No
	A062 Scaup (<i>Aythya marila</i>)	Amber	W - Winter	No
	A164 Greenshank (<i>Tringa nebularia</i>)	Green	W - Winter	No
F02 - Fishing and harvesting aquatic resources	A009 Fulmar (<i>Fulmarus glacialis</i>)	Green	B - Breeding	No
	A016 Gannet (<i>Morus bassanus</i>)	Amber	B - Breeding	No
	A183 Lesser Black-backed Gull (<i>Larus fuscus</i>)	Amber	W - Winter	No
	A184 Herring Gull (<i>Larus argentatus</i>)	Red	W - Winter	No
	A188 Kittiwake (<i>Rissa tridactyla</i>)	Amber	B - Breeding	No
	A137 Ringed Plover (<i>Charadrius hiaticula</i>)	Green	W - Winter	No
	A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	W - Winter	Yes
	A182 Common Gull (<i>Larus canus</i>)	Amber	W - Winter	No
	A048 Shelduck (<i>Tadorna tadorna</i>)	Amber	W - Winter	No
	A130 Oystercatcher (<i>Haematopus ostralegus</i>)	Amber	W - Winter	No
	A141 Grey Plover (<i>Pluvialis squatarola</i>)	Amber	W - Winter	No
	A143 Knot (<i>Calidris canutus</i>)	Amber	W - Winter	No
	A156 Black-tailed Godwit (<i>Limosa limosa</i>)	Amber	W - Winter	No
	A157 Bar-tailed Godwit (<i>Limosa lapponica</i>)	Amber	W - Winter	Yes
	A160 Curlew (<i>Numenius arquata</i>)	Red	W - Winter	No
	A162 Redshank (<i>Tringa totanus</i>)	Red	W - Winter	No

	A179 Black-headed Gull (<i>Larus ridibundus</i>)	Red	W - Winter	No
	A065 Common Scoter (<i>Melanitta nigra</i>)	Red	W - Winter	No
	A001 Red-throated Diver (<i>Gavia stellata</i>)	Amber	B - Breeding	Yes
	A001 Red-throated Diver (<i>Gavia stellata</i>)	Amber	W - Winter	Yes
	A069 Red-breasted Merganser (<i>Mergus serrator</i>)	Green	W - Winter	No
	A005 Great Crested Grebe (<i>Podiceps cristatus</i>)	Amber	W - Winter	No
	A062 Scaup (<i>Aythya marila</i>)	Amber	W - Winter	No
	A003 Great Northern Diver (<i>Gavia immer</i>)	Amber	W - Winter	Yes
	A063 Eider (<i>Somateria mollissima</i>)	Amber	W - Winter	No
	A017 Cormorant (<i>Phalacrocorax carbo</i>)	Amber	W - Winter	No
	A183 Lesser Black-backed Gull (<i>Larus fuscus</i>)	Amber	B - Breeding	No
	A184 Herring Gull (<i>Larus argentatus</i>)	Red	B - Breeding	No
H01 - Pollution to surface waters (limnic & terrestrial, marine & brackish)	A052 Teal (<i>Anas crecca</i>)	Amber	W - Winter	No
	A054 Pintail (<i>Anas acuta</i>)	Red	W - Winter	No
	A056 Shoveler (<i>Anas clypeata</i>)	Red	W - Winter	No
	A051 Gadwall (<i>Anas strepera</i>)	Amber	W - Winter	No
	A065 Common Scoter (<i>Melanitta nigra</i>)	Red	B - Breeding	No
	A050 Wigeon (<i>Anas penelope</i>)	Red	W - Winter	No

	A067 Goldeneye (<i>Bucephala clangula</i>)	Red	W - Winter	No
	A005 Great Crested Grebe (<i>Podiceps cristatus</i>)	Amber	W - Winter	No
	A053 Mallard (<i>Anas platyrhynchos</i>)	Green	W - Winter	No
	A062 Scaup (<i>Aythya marila</i>)	Amber	W - Winter	No
	A004 Little Grebe (<i>Tachybaptus ruficollis</i>)	Amber	W - Winter	No
	A028 Grey Heron (<i>Ardea cinerea</i>)	Green	W - Winter	No
	A125 Coot (<i>Fulica atra</i>)	Amber	W - Winter	No
	A061 Tufted Duck (<i>Aythya fuligula</i>)	Red	W - Winter	No
	A059 Pochard (<i>Aythya ferina</i>)	Red	W - Winter	No
	A229 Kingfisher (<i>Alcedo atthis</i>)	Amber	B - Breeding	Yes
H03 - Marine water pollution	A140 Golden Plover (<i>Pluvialis apricaria</i>)	Red	W - Winter	Yes
	A065 Common Scoter (<i>Melanitta nigra</i>)	Red	W - Winter	No
	A016 Gannet (<i>Morus bassanus</i>)	Amber	B - Breeding	No
	A017 Cormorant (<i>Phalacrocorax carbo</i>)	Amber	B - Breeding	No
	A017 Cormorant (<i>Phalacrocorax carbo</i>)	Amber	W - Winter	No
	A018 Shag (<i>Phalacrocorax aristotelis</i>)	Amber	B - Breeding	No
	A183 Lesser Black-backed Gull (<i>Larus fuscus</i>)	Amber	B - Breeding	No
	A183 Lesser Black-backed Gull (<i>Larus fuscus</i>)	Amber	W - Winter	No

A184 Herring Gull (<i>Larus argentatus</i>)	Red	B - Breeding	No
A184 Herring Gull (<i>Larus argentatus</i>)	Red	W - Winter	No
A188 Kittiwake (<i>Rissa tridactyla</i>)	Amber	B - Breeding	No
A199 Guillemot (<i>Uria aalge</i>)	Amber	B - Breeding	No
A200 Razorbill (<i>Alca torda</i>)	Amber	B - Breeding	No
A204 Puffin (<i>Fratercula arctica</i>)	Amber	B - Breeding	No
A013 Manx Shearwater (<i>Puffinus puffinus</i>)	Amber	B - Breeding	No
A137 Ringed Plover (<i>Charadrius hiaticula</i>)	Green	W - Winter	No
A144 Sanderling (<i>Calidris alba</i>)	Green	W - Winter	No
A148 Purple Sandpiper (<i>Calidris maritima</i>)	Green	W - Winter	No
A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	W - Winter	Yes
A169 Turnstone (<i>Arenaria interpres</i>)	Green	W - Winter	No
A182 Common Gull (<i>Larus canus</i>)	Amber	W - Winter	No
A046 Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)	Amber	W - Winter	No
A048 Shelduck (<i>Tadorna tadorna</i>)	Amber	W - Winter	No
A052 Teal (<i>Anas crecca</i>)	Amber	W - Winter	No
A054 Pintail (<i>Anas acuta</i>)	Red	W - Winter	No
A056 Shoveler (<i>Anas clypeata</i>)	Red	W - Winter	No
A130 Oystercatcher (<i>Haematopus ostralegus</i>)	Amber	W - Winter	No
A141 Grey Plover (<i>Pluvialis squatarola</i>)	Amber	W - Winter	No
A143 Knot (<i>Calidris canutus</i>)	Amber	W - Winter	No
A156 Black-tailed Godwit (<i>Limosa limosa</i>)	Amber	W - Winter	No
A157 Bar-tailed Godwit (<i>Limosa lapponica</i>)	Amber	W - Winter	Yes
A160 Curlew (<i>Numenius arquata</i>)	Red	W - Winter	No
A162 Redshank (<i>Tringa totanus</i>)	Red	W - Winter	No

	A179 Black-headed Gull (<i>Larus ridibundus</i>)	Red	W - Winter	No
	A051 Gadwall (<i>Anas strepera</i>)	Amber	W - Winter	No
	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Amber	W - Winter	Yes
	A001 Red-throated Diver (<i>Gavia stellata</i>)	Amber	W - Winter	Yes
	A142 Lapwing (<i>Vanellus vanellus</i>)	Red	W - Winter	No
	A050 Wigeon (<i>Anas penelope</i>)	Red	W - Winter	No
	A067 Goldeneye (<i>Bucephala clangula</i>)	Red	W - Winter	No
	A069 Red-breasted Merganser (<i>Mergus serrator</i>)	Green	W - Winter	No
	A005 Great Crested Grebe (<i>Podiceps cristatus</i>)	Amber	W - Winter	No
	A053 Mallard (<i>Anas platyrhynchos</i>)	Green	W - Winter	No
	A062 Scaup (<i>Aythya marila</i>)	Amber	W - Winter	No
	A164 Greenshank (<i>Tringa nebularia</i>)	Green	W - Winter	No
	A004 Little Grebe (<i>Tachybaptus ruficollis</i>)	Amber	W - Winter	No
	A003 Great Northern Diver (<i>Gavia immer</i>)	Amber	W - Winter	Yes
	A063 Eider (<i>Somateria mollissima</i>)	Amber	W - Winter	No
J02.06 - Water abstractions from surface waters	A001 Red-throated Diver (<i>Gavia stellata</i>)	Amber	B - Breeding	Yes
K03 - Interspecific faunal relations	A466-A/A149 Dunlin (<i>Calidris alpina</i>)	Red	B - Breeding	Yes
	A140 Golden Plover (<i>Pluvialis apricaria</i>)	Red	B - Breeding	Yes
	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	Amber	W - Winter	Yes
	A065 Common Scoter (<i>Melanitta nigra</i>)	Red	B - Breeding	No
	A001 Red-throated Diver (<i>Gavia stellata</i>)	Amber	B - Breeding	Yes
K03.04 - predation	A122 Corncrake (<i>Crex crex</i>)	Red	B - Breeding	Yes

Appendix B: Prediction and Assessment of Potential Impacts of *Food Wise 2025*

Potential Adverse Impact
 Potential Positive impact
 Impact that may be potentially positive or negative depending on further interpretation of the Action at a local scale and sensitivity of location.

Chapter	Action/Section	Notes on Action/Further detail	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
Chapter 4: Sustainability	1. Recognising Agriculture's role in ongoing National, EU and International Climate Change and Energy Policy Development.	This recommendation is then broken down to several aspects which, to summarise, include continuing involvement in climate change negotiations at a UN and national level, involvement in the National Mitigation Plan and the National Bioenergy Plan, supporting afforestation under the Forestry programme 2014-2020 and explore its role in carbon sequestration.	Broadly positive impacts of these recommendations although the pressure to increase rates of afforestation could have potential adverse impacts depending on the location of such changes in land use.	B01-07, H02.06, I02,	This action could impact on almost any Annex I Habitat, Annex II species of Bird species listed as a Special Conservation Interest for SPAs as it is very wide in its scope.	All relevant statutory requirements and non-statutory measures that apply to each of the sectors. These will either ensure that activities that pose likely significant effects at the local level are identified by EIA/AA screening and undergo AA if required (e.g. Aquaculture and forestry licences) or certain activities that could have likely significant effects are dissuaded by means of action-based schemes such as GAEC, GLAS etc. Ongoing monitoring of these non-statutory measures will ensure that they are fit for purpose in the context of avoiding adverse impacts on the integrity of European sites.	It is reasonable to assume that successful application of the safeguards will mitigate any potential impacts to level whereby no adverse impacts on the integrity of European sites remains.
	2. Measurement of Ireland's environmental sustainability credentials	This recommendation promotes the updating of Teagasc National Farm Survey sustainability indicators, agri-environment indicators and Teagasc Marginal Abatement Cost Curve. Rolling out the Carbon Navigator Initiative and increased use of the environmental credentials in the Seafood sector.	These measures aim to gauge progress against criteria and this would be regarded to be an essential element of insuring that the schemes referred to are actually delivering their goals. However whilst this is a positive measure it is essential that the indicators and targets are set appropriately and are linked to external influences such as the National Biodiversity Plan and others. Indicators also need to be output-based rather than performance.	None predicted	N/A	None required	None predicted
	3. Further Development and Enhancement of Origin Green Programme	To date the focus for Origin green in terms of sustainability has been on carbon footprint and greenhouse gas minimisation. The recommendation looks toward enhancing the scheme to address soil health, nutrient management, biodiversity, animal health and welfare and sustainable sources of animal feed. Extending and overlapping the scheme to fishermen and integrating it with Knowledge Transfer Groups and Beef Data Genomics under the RDP are also recommended.	These recommendations pose either potential positive impacts or neutral impacts in the context of European site as they will contribute to general good practice in terms of soil, waste and nutrient management.	None predicted	N/A	None required	None predicted

Chapter	Action/Section	Notes on Action/Further detail	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	4. Improvement of Environmental footprint of Sector	Recommendations in this section include generic commitments to “continuation and enhancement of the DAFM-funded Teagasc Agricultural Catchments Programme” and to integrate findings to agri-environment schemes. Reference to ongoing support and involvement with River Basin Management Plans and, Bord Bia farm Quality Assurance Schemes is included. Improvements in terms of nutrient management plans, Teagasc advice on fertiliser application and a census of soil fertility are also noted. The actions include “ <i>DAFM to work closely with responsible agencies to monitor potential localised/regionalised impacts of dairy herd expansion on water quality and to develop mitigation measures, in conjunction with the scientific findings from the Agricultural Catchments Programme.</i> ” This is a notable action as it represents an important monitoring commitment to determine any local-scale implications of expansion in the dairy sector. More sector-specific actions include co-location of intensively based production units and tillage farms to facilitate more efficient use of slurry, improved fisheries management to address the potential for decline of fish stocks, minimise juvenile catch and also selective use of certain types of gear. The horticulture sector is addressed by reference to exploring a greater range of “ <i>plant protection products</i> ”. Hazardous waste management is also addressed with reference to “ <i>building on the current EPA/DAFM/Teagasc farm hazardous wastes collections initiative</i> ”.	These recommendations are important elements of the Plan and all provide important commitments to enhancing and improving various existing systems to make them fit for purpose. Whilst they all provide positive environmental benefits, direct positive linkages to the Conservation Objectives of European Sites can be seen in reference to maintaining populations and ranges (e.g. by maintaining fish stocks which may be prey items for seabird, cetacean, seal and otter populations). Commitments made to monitoring the effects of local changes in dairy practice are useful contributions to the range of monitoring commitments for this sector and will have to be combined with appropriate feedback response mechanisms to address scenarios whereby the results suggest adverse effects. Sector-specific actions are regarded to provide potential positive impacts to European site integrity as they address threats such as eutrophication, overfishing and ground/surface water pollution by hazardous waste.	None predicted	N/A	None required	None predicted
	5. Develop and support Agri-food processing sector in delivering sustainable processes and outputs	Actions include promoting Enterprise Ireland funding schemes that support energy efficiency, regulatory compliance, in-company innovation; developing supply chain mechanisms in the wood product and biomass sector and promoting research and via Horizon 2020 funding.	Whilst all these measures are all positive steps in general environmental terms, there is no reasonable linkage between them the integrity of the European sites so the potential impact is regarded to be neutral.	None predicted	N/A	None required	None predicted

Chapter	Action/Section	Notes on Action/Further detail	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	6. Implementation of Environmental Elements of Ireland's National Programmes and the EU co-funded Rural Development Programme 2014-2020	Whilst these will happen regardless of the Draft <i>Food Wise 2025</i> , the proposed actions tease out elements of the RDP that overlap with aspects of the Draft <i>Food Wise 2025</i> . Actions include maximising uptake of GLAS, organic farming, Freshwater pearl mussel catchment plans and Burren farming for conservation. CPD for agricultural advisors is promoted. Uptake of on-farm investment grants for low emission slurry spreading equipment, farm nutrient storage and animal housing is promoted to help lower emissions and improve water quality. Maximising uptake in the suckler herd in the Beef Data and Genomics Programme is also promoted, as is uptake of funding for afforestation under the Forestry Programme 2014-2020.	The potential impacts are all generally positive in terms of ecological impacts and will be delivered by implementation of the various instruments referred to above. However the impact on European sites will depend on the location of the GLAS scheme and other instruments in question and the Conservation Objectives that are in place at the site that may be impacts upon.	None predicted	N/A	None required	None predicted
	7. Prioritise Research Funding on Sustainability of Irish Food production	Actions include promoting research funding into evidence base to quantify the sustainability of Irish food production systems and to assess the vulnerability of these systems to climate change. Also to look at ways to reduce the impact of food production on water quality, tailored measures which impact positively on biodiversity and technologies for reducing ammonia and GHG emissions and carbon sequestration in Ireland's soils, biomass and agricultural systems. Other relevant research includes provision, utilisation and exploitation of verifiable data on the environmental impact and sustainability of grass-based food production and aquaculture in Ireland, land use options to sequester carbon and sectoral farm management tools and management systems that optimise on-farm resource use efficiency.	All such actions are deemed to positive or neutral in terms of the impacts on European sites as they will help in providing evidence for the existence or otherwise of linkages between agricultural activities and environmental impacts and solutions for where there may be adverse impacts occurring.	None predicted	N/A	None required	None predicted
	8. Implementation of Food Wise 2025 actions in context of sustainability	An important acknowledgment of the Draft <i>Food Wise 2025</i> is that it is a strategic plan and that its implementation at local or regional levels may cause unforeseen impacts. Whilst all potential impacts have been addressed as part of the SEA and AA processes, there is an inherently high level of uncertainty as to how the local environment may react to the proposed changes. Actions are proposed to ensure appropriate monitoring of the environmental impacts of <i>Food Wise 2025</i> including possible impacts at regional level "This implementation process will include evaluation and assessment of the delivery of sustainability and mitigation actions set out in the strategy report". There is also a proposal to "enhance their collective coherence" with regard to implementation of RDP measures and Origin Green.	Actions are deemed to positive or neutral in terms of the impacts on European sites as monitoring of implementation at a local level will help in providing evidence for the existence or otherwise of linkages between agricultural activities and environmental impacts and solutions for where there may be adverse impacts occurring.	None predicted	N/A	None required	None predicted

Chapter	Action/Section	Notes on Action/Further detail	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
Chapter 5: Growth Opportunities		This Chapter is primarily concerned with setting out the rationale behind the potential for expansion in productivity and value of specific sectors. It does not contain any actions <i>per se</i> , which are contained within the following Chapter on "Delivering Growth". Nevertheless it was reviewed as part of the AA process but no impacts were predicted.		None predicted	N/A	None required	None predicted
Chapter 6: Delivering Growth	Human capital	Actions here are divided into Producer-level, Agrifood companies, marketing, health and safety and languages. To summarise the actions, at a Producer level the focus is on better education programmes and Knowledge Transfer in the areas of technology, business management and skilled labour. The relevance to the AA process is manifested in the proposed increase in knowledge transfer in integrated pest management. Relevant actions relating to Agri-food companies relate to promotion of the Origin Green Ambassadors programme although linkages to European sites are not explicit in the Origin Green programme.	Actions are deemed to positive or neutral in terms of the impacts on European sites as increased knowledge and awareness of legal requirements, ecological impacts and mitigation measures will contribute to better agri-food practices across the sector.	None predicted	N/A	None required	None predicted
	Competitiveness	Again there were limited linkages identified between the proposed actions under this category and the integrity of European sites. Recommendations at Producer level included reviewing and updating the agri-taxation measures to address competitiveness issues, avoiding further challenges to land mobility and consider actions that help deliver environmental sustainability and energy efficiency. It also includes actions for Teagasc to develop measures such as precision technologies, improved grazing management practices, increase soil fertility and sward renewal to increase grass utilisation by 2t/ha on livestock farms. Actions in the Seafood sector include addressing irregularity in the supply of seed mussels, financial modelling to deliver commercial return and actions to scale up companies in the pelagic, whitefish and shellfish sectors.	Actions are deemed to positive or neutral in terms of the impacts on European sites depending on location, as they will contribute toward better soil management and retention of nutrients in the soil, limiting the amount of nitrogen and phosphorous to surface and groundwaters. Actions in the seafood sector do not represent expansion of current practice.	None predicted	N/A	None required	None predicted
	Market Development	There were no aspects of this part of the Plan that were regarded to have direct or indirect relevance to the integrity of European sites.		None predicted	N/A	None required	None predicted

Chapter	Action/Section	Notes on Action/Further detail	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	Promoting "Ireland" in new markets	The only action of relevance was the proposal to "better link in food to the experience of tourists, including the promotion of food trails, in particular how to build on Wild Atlantic Way". Many locations along the Wild Atlantic Way overlap or are adjacent to European sites.	In isolation, this proposal could increase pressure on sites along the Wild Atlantic Way (WAW) and other food trails, if they are within or near European sites. The WAW has undergone its own AA process and mitigation measures therein would have to be taken into account at the project-scale. The potential impact would be expected to be neutral.	None predicted	N/A	None required	None predicted
	Origin Green	Whilst the main process of achieving Origin Green is to demonstrate sustainable production methods, it is primarily used as a business to business brand and a means by which to promote the reputation of Irish food. The actions proposed to further enhance the programme by various means including expanding its scope and increasing exposure for verified members and the public.	The Actions will further promote entry to the scheme which will provide overall positive impacts to the environment and to European sites.	None predicted	N/A	None required	None predicted
	Animal Health Status	There were no aspects of this part of the Plan that were regarded to have direct or indirect relevance to the integrity of European sites.		None predicted	N/A	None required	None predicted
	High food Safety status	There were no aspects of this part of the Plan that were regarded to have direct or indirect relevance to the integrity of European sites.		None predicted	N/A	None required	None predicted
	Innovation.	Innovation, technology and knowledge transfer are a central theme of the Plan. Actions in this section include research investment in to grassland productivity, soil nutrient usage, crop production. Commitments to promote new research and development into new seafood-based products including wild caught fish and farmed seaweeds.	Proposals that aim to increase productivity coupled with research into how to do this whilst ensuring soil fertility will addresses nutrient retention to provide a positive impact.	None predicted	N/A	None required	None predicted

Assessment of Sector-specific targets

Potential Adverse Impact
Potential Positive impact
Impact that may be potentially positive or negative depending on further interpretation of the Action at a local scale and sensitivity of location.

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
Dairy Sector	All milk producers should be strongly encouraged to carry out grass measurement as the efficient use of grass is one of the key advantages of the Irish dairy sector	There is considerable flexibility in how these actions may be implemented in practical terms so the confidence of the type of potential impacts is relatively low. There are unlikely to be any positive impacts to European sites by increasing soil fertility per se as it could have potential negative impacts on a variety of Annex I habitats and species that are sensitive to changes to the water table and nutrient concentrations in surface and ground water. However this depends on where the works takes place and the state of the soil prior to the works. For example, if the soil structure can be improved by increasing drainage and in the long-term be improved to the extent that it may retain nutrient within a better soil structure then the impact may be positive. Similarly in other cases the impact of drainage may allow better grassland output from less nutrient inputs and have a net positive effect on nutrient runoff.	A02, A08, A09, H02, H05,	Freshwater (surface and ground), estuarine habitats and species sensitive to eutrophication such as 3110 Oligotrophic soft water lakes, 7230 Alkaline fens, 1029 Freshwater Pearl mussel and 1990 Irish Freshwater Pearl Mussel . Annex I grassland such as 6210 Orchid-rich calcareous grassland* could be affected by changes in grassland management.	All relevant statutory requirements (e.g. SMRs) and non-statutory measures that apply to each of the sectors. These will minimise the risk that activities that pose likely significant effects at the local level are dissuaded by means of action-based schemes such as GAEC, GLAS etc. Ongoing monitoring of these non-statutory measures will ensure that they are fit for purpose in the context of avoiding adverse impacts on the integrity of European sites.	It is reasonable to assume that successful application of the safeguards will mitigate any potential impacts to level whereby no adverse impacts on the integrity of European sites remains.
	Strategies should be developed to increase the fertility of Irish grassland soils in order to address deficiencies in P, K and lime					
	Dairy farmers should set a target of increasing grass utilisation to 10 tonnes/ha	Average grass utilisation on commercial dairy farms is 7.1 tonnes DM/ha, while on suckler beef farms it is 4.7 tonnes. Increasing the utilisation does not automatically mean increasing fertiliser applications as Teagasc has identified that improved pasture management and use of PastureBase Ireland tool will help improve grassland and nitrogen management and increase grass utilisation.	None predicted	N/A	None required	None predicted
	Continue to leverage the benefits of genomic technology to help maintain the rate of genetic improvement in the dairy sector to maximise resource use efficiency and lower emissions.	These actions would be expected to have an overall positive impact. Dairy cows will be bred for greater milk yield while maintaining or reducing overall cow size, thereby decreasing feed intake and waste output. Offspring produced will be targeted for specific enterprises, reducing numbers of “unwanted” offspring nationally.	None predicted	N/A	None required	None predicted
	Industry stakeholders need to ensure that sexed semen continues to be rolled out to Irish dairy farmers and that continued research in the technology is undertaken					
	Increase the number of farmers that complete profit monitors or other cost management tools.	Providing stability in the dairy sector is likely to be of benefit to European sites as it reduced the risk of land abandonment or rapid intensification. Despite the fact that the majority of intensive pastures are not part of European sites, rapid intensification or abandonment can have ex-situ impacts on the network of European sites and habitats and species that move between them.	None predicted	N/A	None required	None predicted
An increased awareness among milk producers and others in the dairy sector in relation to the key issues surrounding fixed price contracts and financial management skills should be facilitated, including an increased use of cash flow budgeting and monitoring						

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	<p>tools to help cope with milk price volatility.</p> <p>Processors should prioritise the development of fixed price contracts and other volatility tools for their suppliers. Equally dairy exporters should develop fixed price contracts from the customers back to the exporter.</p> <p>The issues around the possibility of developing a mechanism including mutual funds such as a reinsurance scheme should be examined to minimise risk for processors and give farmers confidence regarding price.</p> <p>The Government will ensure that the tax system as it specifically applies to farmers should remain under review to establish if there is further scope to take account of income volatility faced by dairy farmers.</p> <p>Engagement by processors, producers and the Department with the Milk Market Observatory should be enhanced.</p>	<p>However there is no suggestion that rapid intensification is a likely consequence of the Plan.</p>				
	<p>Origin Green will be a key marketing tool and should be fully supported at all levels of the industry within an ambitious time frame. The verifiable sustainability credentials of Irish dairy products will be a key marketing advantage under this programme and Ireland will be positioned as a leading supplier of sustainable dairy products across all markets</p> <p>Industry will continue to focus on the development of value added products whilst ensuring, insofar as possible, that the maximum value possible is retained indigenously</p> <p>In line with the findings of the Report on Smart Ageing which was presented to Government in April 2015, opportunities for the development of dairy based foods in this sector will be examined</p> <p>Ireland's success in added value sectors such as farmhouse, artisan and higher end cheeses and butters will continue to be recognised, developed and encouraged</p>	<p>This action does not have direct consequences for European sites and are focused on getting more (added) value out of existing products. Since the proposed actions do not propose intensification of production there are no potential adverse effects predicted for European sites. Scenarios whereby the marketing of new or existing products could eventually result in increased pressure on natural resources are not unreasonable and the effects could be wide-ranging but would be likely to be captured by other safeguards that require individual assessment.</p>	None predicted	N/A	None required	None predicted

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	The scope for continuous efficiency improvements must be continuously pursued against competitive benchmarks					
	The response to environmental challenges in areas such as emissions, water quality and biodiversity must be centrally co-ordinated and must highlight Ireland's key leadership role in balancing more intensive production with environmental concerns					
	The response to environmental challenges in areas such as emissions, water quality and biodiversity must be centrally co-ordinated and must highlight Ireland's key leadership role in balancing more intensive production with environmental concerns.	These actions suggest consolidation of the existing approaches toward environmental challenges but do not offer more detail as to how these may address the future challenges such as climate change and commitments set down in the National Biodiversity Plan. Whilst these actions do not pose any adverse impacts on European sites in isolation, in the context of increased production by 2025 there are additional safeguards required to address such increased pressure on the environment that is inevitable. The Plan calls for further research into mitigation measures particularly for climate change and air quality. In addition the Plan is framed within the greening measures promoting biodiversity in the CAP reform 2015 which would be viewed as posing a positive potential impact.	None predicted	N/A	None required	None predicted
	The Sustainable Dairy Assurance Scheme (SDAS) must include all dairy farmers as an immediate priority					
Beef	Focus on net margin per hectare as a measure of profitability and kilograms of beef produced per hectare as a suitable measure of efficiency.	The impact of focussing on kg/ha will impose pressure on either land availability for extra livestock or increasing stocking densities could put pressure on grass production. Either impact would be regarded to be negative for European sites, primarily by means of concerns that there would be increased nutrient runoff and increased demand for grass feed.	A02, A04 (A04.01.01) A05, A08, A09, H02, H05, J02.	Freshwater (surface and ground), estuarine habitats and species sensitive to eutrophication such as 3110 Oligotrophic soft water lakes, 7230 Alkaline fens, 1029 Freshwater Pearl mussel and 1990 Irish Freshwater Pearl Mussel. Annex I grassland such as 6210 Orchid-rich calcareous grassland* could be affected by changes in grassland management.	All relevant statutory requirements (e.g. SMRs) and non-statutory measures that apply to each of the sectors. These will minimise the risk that activities that pose likely significant effects at the local level are dissuaded by means of action-based schemes such as GAEC, GLAS etc. Ongoing monitoring and adaptive management of these non-statutory measures will ensure that they are fit for purpose in the context of avoiding adverse impacts on the integrity of European sites.	It is reasonable to assume that successful application of the safeguards will mitigate any potential impacts to level whereby no adverse impacts on the integrity of European sites remains.
	Increase fertility levels and decrease calving intervals in suckler herds	These actions would be expected to have an overall positive impact if it is assumed that there is improved feed conversion ratio thus requiring less feed intake to produce more meat. Maximisation of bovine potential will add to this. Positive impacts in the form of reduced nutrient runoff to surface waters through the increasing reliance on low emission slurry spreading and selection of grass species to allow increased overall grass output				
	Facilitate the rapid operationalisation of all aspects of the <i>Beef HealthCheck</i> programme, including batch-level, herd-level and geographic reporting					
	Facilitate the further development of resources and information to					

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	<p>encourage livestock producers to place an economic value on the biosecurity of their holdings</p> <p>Leverage the benefits of the recent adoption of genomics technology in the beef sector to improve the genetic quality of the national breeding herd though inter alia, maximising participation in the Beef Data and Genomics Programme, to help lower emissions and improve farm competitiveness</p> <p>Exploit potential of genomics to add value at farm level by improving breeding and at processing level in areas such as meat quality and meat tenderness</p> <p>Further develop the potential use of sexed semen for breeding selection and improving genetic profile and profitability of the proportion of the beef herd coming from the dairy sector</p> <p>Intensify the level of research aimed at informing the formulation of the breeding indexes used in the sector and the distribution of the traits therein</p>	<p>and utilisation per hectare whilst reducing requirement for fertiliser inputs. The Plan also gives emphasis on best available breeding technologies to produce superior animals which will possess better conversion ratios, realise their potential easier, allowing animals to be slaughtered at a younger age, theoretically reducing overall herd numbers.</p>				
	<p>Develop infrastructure through knowledge transfer programmes and farmer education to ensure improved grassland management. This will include increasing the proportion of grassland farmers participating in weekly grass measurement from 1,250 today to 3,000 by 2020 and 5,000 by 2025</p> <p>Support research efforts and knowledge transfer tools to better utilise the beef output from the dairy bred calves in a systemised manner</p> <p>Review mechanism for linking the knowledge developed on Teagasc/Farmer's Journal BETTER Farm Beef Programme and the new Suckler Cow demonstration farm in Athenry with widespread application at farm level</p>	<p>This would be expected to have an overall positive potential impact as it allows the sharing of knowledge and potentially the consequence that more farmers find more efficient ways of increasing productivity, reducing emissions and waste production.</p>	None predicted	N/A	None required	None predicted
	<p>Develop a uniform approach to the supply of clean cattle underpinned by research in this area</p> <p>Increased level of communication and engagement with and between processors and producers in terms of marketplace developments</p>	<p>These actions do not have direct consequences for European sites and are focused on getting more (added) value out of existing products. Since the proposed actions do not necessarily propose intensification of production there are no potential adverse effects predicted for European sites.</p>	None predicted	N/A	None required	None predicted

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	<p>Explore options to increase data availability on traded volumes by channel across the whole supply chain, to increase transparency and better inform stakeholder understanding of market returns</p> <p>Increase and expand contractual supply arrangements between producers and processors</p> <p>Focus on assisting the production of the market required carcass specification and production systems which are designed to maximise return both to the farmer and the processing industry</p> <p>Engage with retail customers to develop a partnership approach to the production of Irish beef, ensuring a harmonised and collaborative approach to market specifications, price points and farm management practices</p> <p>Develop sectoral indicators, analysis and service delivery models which differentiates the sector in terms of farm size/labour requirement of farmers in the industry</p>					
	<p>Develop further and build a strong brand image for Irish beef capable of securing a significant price premium at retail and food service market outlets</p> <p>Develop markets for fifth quarter products through enhanced marketing capabilities and through enhanced market access</p> <p>Dedicated and adequately resourced DAFM beef market access team to identify, develop, reinforce and secure new third country markets as well as supporting the trade in live exports</p> <p>Defend interests of the Irish beef sector in international trade agreements pursued by the EU, particularly in light of competitive threat posed by the US and Mercosur</p> <p>Investigate and develop viable alternative markets for the additional prime cattle arising from dairy herd expansion</p> <p>Building on the launch of Irish beef into the US, implement a strategy for the premium positioning of Irish beef as sustainable and grass fed resulting in a growth of exports into high end retail and foodservice outlets</p>	<p>These actions do not have direct consequences for European sites and are focused on getting more (added) value out of existing products. Since the proposed actions do not directly propose intensification of production there are no potential adverse effects predicted for European sites. Scenarios whereby the marketing of new or existing products could eventually result in increased pressure on natural resources are not unreasonable and the effects could be wide-ranging.</p>	None predicted	N/A	None required	None predicted

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	Investigate opportunities for including animal welfare standards and human health benefits of grass fed beef in the marketing messages for Irish beef					
	Explore options for increased returns from meat and bone meal, and tallow through industry and agency R&D	This would be expected to have an overall positive potential impact on European sites at a national-scale as such research, if correctly focussed, could look at increasing productivity independent of emissions and waste production and reviewing procedural systems for authorisations, land management and conservation that have adverse effects on the profit margin for this sector.	None predicted	N/A	None required	None predicted
	Develop early warning/surveillance systems, vaccines and intervention strategies for the rapid recognition, prevention and control of livestock diseases					
	Explore options for alternative funding models for research in the sector, including contributions from the industry					
	Complete the establishment of the Meat Technology Centre					
	Explore research projects on the advantages of Irish grass fed beef systems in comparison with other production systems with regards to animal welfare, health and taste along with any other relevant areas. This should include a consideration as to the definition of 'grass fed'					
	Consider the merits of developing a standing national resource with expertise in the field of animal health economics and disease modelling					
	Ensure the availability of the appropriate skills throughout the supply chain, including providing adequate training in butchery skills to the processing sector	Providing stability in the beef sector is likely to be of benefit to European sites as it reduced the risk of land abandonment or rapid intensification. Despite the fact that the majority of beef land is not part of European sites, rapid intensification or abandonment can have ex-situ impacts on the network of European sites and habitats and species that move between them.	None predicted	N/A	None required	None predicted
	Seek to maintain support for suckler producers in the current CAP arrangements and prioritise that support in future negotiations on the post 2020 policy					
	Any increased support for suckler cow production should be conditional on quantity and technical efficiency improvement					
	Competitive financing packages required for acquisitions to improve foreign market presence.	There is no reasonable linkage between most of these proposed actions and the integrity of the European site.	None predicted	N/A	None required	None predicted
	Seek to ensure origin labelling requirements across all sectors reflect the appropriate balance between consumer demand and increased cost to consumers and industry					

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	Seek to minimise the impact of mandatory labelling requirements on the competitiveness of Irish exports on EU markets					
	Increase farmer participation in Beef and Lamb Quality Assurance Scheme (BLQAS) to 90% in terms of proportion of output by 2025					
	Develop strong reputation for quality and environmental sustainability of Irish beef with customers, competent authorities in target markets and NGOs building on the Sustainable Beef and Lamb Assurance Scheme (Origin Green) and optimise the use of this brand reputation in the market place					
Sheep	Genetic improvement: focus on ewe fertility and on breeding resilience and resistance to diseases which impact on the productivity of flocks, such as foot-rot and on improving the consistency of product supplied to processors	The actions as stated have the potential to pose potential positive impacts on the integrity of European sites as the increased production of sheep meat is focused on getting more out of the existing flock rather than emphasising increasing stocking rates or expanding grazing areas.	None predicted	N/A	None required	None predicted
	Work collaboratively with processors, Bord Bia, Teagasc and Sheep Ireland to modify the very seasonal nature of Ireland's sheepmeat supply, and maintain our presence, and access to markets throughout the year					
	Increase farmer participation in Beef and Lamb Quality Assurance Scheme (BLQAS) to 90% in terms of proportion of output by 2025					
	Add value to exports by further moving from exporting entire carcasses to pre-packaged boneless cuts through wider market access	The potential impact is unlikely to be significant to the extent that it would be perceptible for any European sites. However increased demand on the disposal of sheep carcasses after boning may have adverse effects for waste management capacity. Overall the impact is predicted to be neutral. The forward buying and use of breeding indices by processors will allow farmers to produce stock to meet market demands; this is likely to impact on the genetic improvement of the national flock.	None predicted	N/A	None required	None predicted
	Engage further with Sheep Ireland on the design and implementation of breeding indices based on marketing insights					
	Increase sheep farmer participation in Knowledge Transfer Programmes	This would be expected to have an overall positive potential impact as it allows more efficient control over production and reducing waste production that could otherwise affect European sites.	None predicted	N/A	None required	None predicted
	Enhance hill farming systems by promoting greater integration with lowland sheep producers					
	DAFM to continue to support and engage with Sheep Ireland on their work to drive better genetic gain for the flock					
	Underpin and further improve Ireland's sheep traceability system					

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	Teagasc to undertake a review of their sheep research and advisory programmes	The actions as stated have the potential to pose potential positive impacts on the integrity of European sites as research may allow more efficient control over production and reducing grazing pressure and deterioration of grassland biodiversity that could otherwise affect European sites.	None predicted	N/A	None required	None predicted
	Improve the consumer perception of lamb with the younger demographic as a healthy, convenient protein choice					
	Build a strong brand image for Irish lamb based on its sustainable grass based production to secure outlets and price premium					
	Implement generic promotion of lamb across France, Belgium and Germany and compete for further EU funding post 2017					
	Develop a Carbon Navigator tool for sheep producers					
	Develop strong reputation for quality and environmental sustainability of Irish beef with customers, competent authorities in target markets and NGOs building on the Sustainable Beef and Lamb Assurance Scheme (Origin Green) and optimise the use of this brand reputation in the market place					
Pigmeat	Investment in pig production facilities particularly energy efficiency to reduce input costs	Potentially positive impacts could result under the Plan through the implementation of proposed initiatives for increased co-operation with tillage farmers for the re-use of animal manure and from proposals to explore an anaerobic digestion for conversion of manure.	None predicted	N/A	None required	None predicted
	Collaboration with the tillage sector to create commercial opportunities for pig manure					
	Explore feasibility of alternative slurry usage and disposal options, such as anaerobic digestion					
	Explore opportunities for greater use of quality assured produce in food service.	The potential impact is unlikely to be significant to the extent that it would be perceptible for any European sites. Overall the impact is predicted to be neutral.	None predicted	N/A	None required	None predicted
	Engage further with non intensive sector to ensure standards of bio-security are understood and implemented	This would be expected to have an overall positive potential impact as it allows more efficient control over production and reducing waste production that could otherwise affect European sites.	None predicted	N/A	None required	None predicted
	Explore extension of country of origin labelling to loose and processed products					
Stakeholder group to examine the challenges associated with animal health / welfare within the pig industry and to bring forward a recommended plan for collective action						

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	Agreement on and implementation of revised Pig Salmonella Control Programme					
	Use Origin Green in trade marketing to develop preference for and to distinguish Irish produce in international markets	The actions as stated have the potential to pose potential positive impacts on the integrity of European sites as they encourage more sustainable use of natural resources.	None predicted	N/A	None required	None predicted
	The industry to scope out an effective marketing message with Bord Bia					
	Invest and strengthen the position of the Quality Mark on the domestic market positioning pigmeat as a versatile, healthy option with consumers					
	Roll out a carbon footprinting assessment and improvement programme for pigs					
	Opening of upgraded pig research facility in Moorepark with prompt dissemination of research findings to the industry					
	Support pig farms by researching grain varieties in the tillage sector for feed use					
Poultry	Improved animal health, welfare and bio-security awareness and implementation through on-farm investment and training.	Potentially positive impacts could result under the Plan through the investment in poultry production facilities that have better waste minimisation equipment and raising awareness through investment and training.	None predicted	N/A	None required	None predicted
	Investment in poultry production facilities particularly energy efficiency to reduce input costs.					
	Exploit the opportunities afforded by country of origin labelling.	Overall the impact is predicted to be neutral as there are few direct linkages, if any, to the conservation objectives of European sites. Whilst “chicken complex” may appear to suggest intensification, the supporting text refers to a concept of centralising the supporting industries in the same location and therefore does not suggest any adverse effects such as increased waste production.	None predicted	N/A	None required	None predicted
	Consideration of an ‘industry insurance fund’ to assist producers and processors in the event of disease outbreak					
	Consideration of development of ‘chicken complexes’ to allow the industry to operate on a more economic and efficient scale with greater integration and collaboration					
	Explore opportunities for the increased use of quality assured produce in food service					
Collaboration with processors to build on commercial opportunities and drive returns from fifth quarter						
To implement the recommendations arising from whole of the	The potential impact is unlikely to be significant to the	None predicted	N/A	None required	None predicted	

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	<p>supply chain consultation process to address the issue of Campylobacter at farm, processing and distribution levels</p> <p>Provide funding under the Rural Development Programme to upgrade existing buildings and funding to support the construction of new housing and ensure animal welfare and safety</p> <p>Examine the extension of country of origin labelling to loose products</p>	extent that it would be perceptible for any European sites.				
	<p>Invest and strengthen the position of the Quality Mark on the domestic market.</p> <p>Incorporate sustainability criteria under the Origin Green programme into the Poultry Products Quality Assurance Scheme (PPQAS)</p> <p>Roll out a carbon footprinting assessment and improvement programme for poultry</p>	The actions as stated have the potential to pose potential positive impacts on the integrity of European sites as they encourage more sustainable use of natural resources.	None predicted	N/A	None required	None predicted
Cereals/Tillage	<p>Improve sustainability and reduce the costs of crop production through the improvement of soil management techniques including: appropriate cultivation selection, weed control and maximising the value of organic manures</p> <p>Increase the proportion of cropped area under malting barley and wheat to meet the demand from distillers, maltsters and brewers, including craft breweries seeking to source a native malt supply</p> <p>Increase output of wheat and feed barley to support increased demand from the livestock sector and increase production of forage maize to meet anticipated demand for forage and nutrient requirements from the dairy sector</p> <p>Increase production of protein crops annually to provide source of native traceable protein for feedstuffs</p> <p>Increase the use of rotations and break crop production in response to meeting CAP greening requirements and to developing domestic and export markets (oats, oilseed and pulses)</p>	The Plan does not envisage an increased area under tillage. Tillage is carried out predominantly in land of the South and South East and to a large extent, outside European sites but some tillage and grassland areas outside European sites provide supporting habitat for geese and other bird species that form qualifying interests for SPAs. The actions as stated have the potential to pose potential adverse impacts on the integrity of European sites if the changes in the type of crop would affect lands providing supporting roles played for European sites.	A02, A03, A06, A10, H01, H02, J02. E60	Grassland habitats such as 6210 Orchid-rich calcareous grassland* and 6510 Lowland hay meadow. Bird species such as such as Greenland white-fronted Goose, Whooper's Swan, Bewick's Swan, Corncrake and Golden Plover where they may occur both within and outside of SPAs where they form qualifying interests.	All relevant statutory requirements (e.g. SMRs) and non-statutory measures that apply to the sector. These will minimise the risk that activities that pose likely significant effects at the local level are dissuaded by means of action-based schemes such as GAEC, GLAS etc. Ongoing monitoring and adaptive improvement of these non-statutory measures will ensure that they are fit for purpose in the context of avoiding adverse impacts on the integrity of European sites.	It is reasonable to assume that successful application of the safeguards will mitigate any potential impacts to level whereby no adverse impacts on the integrity of European sites remains.

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	Form partnerships with intensive livestock producers to avail of organic manures to reduce fertilizer costs, improve biological activity and improve soil fertility					
		Positive impacts are also possible when the actions regarding the re use of organic manure and other “greening initiatives” are considered.	None predicted	N/A	None required	None predicted
	Continue to examine whether the likely development of the sugar and ethanol markets would justify farmer and industry investment in the redevelopment of a sugar beet industry in Ireland	These changes will occur within the existing tillage lands and will be reflected in an improved rotation and increased diversity of crops within individual farms as dictated by greening measures under CAP. Traditionally, tillage lands are located in the South and Eastern part of the country and lie predominately outside Natura sites so the impact is likely to be neutral unless the changes to landuse remove the supporting role that some fields will play for some bird species also using SPAs. In such cases a potential adverse impact is possible. However, potential positive impacts are also possible when the actions above require the use of organic manure and other “green initiatives” are considered such as the use of catch crops etc.	None predicted	N/A	None required	None predicted
	Develop processing facilities for the production of high value products for the export market such as; oats for the ‘health and wellness – human nutrition’ category and cold-pressed oilseed rape for the human nutrition market					
	Increase inclusion rate for native malting barley in craft beer production through sourcing of suitable malts and malting barley varieties					
	Increase the use of Irish grown potatoes for specialist use such as processing and salad markets					
	Expand crop variety evaluation programmes to identify high yield varieties of malting barley, wheat, oats and protein crops to support farmer and industry actions	This would be expected to have an overall positive potential impact as it allows more efficient crop production, reducing emissions and waste production that could otherwise affect European sites.	None predicted	N/A	None required	None predicted
	Promote the use of superior crop varieties through the seed certification system. This will ensure that seeds of the highest quality are available to growers					
	Roll out Origin Green programme to tillage producers to underpin the sustainability credentials of the industry	The potential impact is unlikely to be significant to the extent that it would be perceptible for any European sites. Overall the impact is predicted to be neutral.	None predicted	N/A	None required	None predicted
	Identify break crop opportunities and ensure their development by putting in place a cohesive development plan for growers, industry research and technology transfer and policy makers	These actions may be expected to have a positive potential impact as crops suited better to Irish tillage systems may require less fertiliser, pesticide and herbicide application.	None predicted	N/A	None required	None predicted
	Establish a new industry grouping to ensure achievement of targets for protein crops, break crops and oilseed rape					
	Examine the feasibility of expanding the seed potato production sector to take advantage of national high-health status and increase exports of seed					
	Develop marker- and genomics-assisted breeding to aid the development of crops better suited to Irish tillage systems					
Horticulture	Producers to support and fund the Horticulture Industry Forum actions	Some of the actions as stated have the potential to pose potential positive impacts on the integrity of European sites through increase crop production efficiency, thereby requiring less land and resources. Technologies to accurately map crop input requirements will have a positive effect as they should result in reduced wastage.	None predicted	N/A	None required	None predicted
	Industry and Bord Bia to provide matching funding to support EU funded promotional campaigns					
	Teagasc and growers to explore the use of precision technologies to accurately map crop input requirements					

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact					
	Potential for production of Irish potato chips and a variety of vegetable based crisps and snacks	The potential impact is unlikely to be significant to the extent that it would be perceptible for any European sites. Overall the impact is predicted to be neutral. The promotion of Origin Green amongst growers will have positive benefits as the scheme encourages farmers to set achievable goals while promoting sustainable farming practices.	None predicted	N/A	None required	None predicted					
	All horticultural processors and packers to sign up to Origin Green										
	Increase supply chain inspections of country of origin labelling for fresh fruit and vegetables	The potential impact is unlikely to be significant to the extent that it would be perceptible for any European sites. Overall the impact is predicted to be neutral.	None predicted	N/A	None required	None predicted					
	Simplification of the mutual recognition process of plant protection products within the EU										
	Implement joint industry and EU funded promotional campaigns in the mushroom and potato sectors where the target audience is the younger demographic and key messages will include health and convenience	The potential impact is unlikely to be significant to the extent that it would be perceptible for any European sites. Overall the impact is predicted to be neutral. Any increase in production levels will occur on lands already devoted to horticulture, which in the main fall outside Natura sites.	None predicted	N/A	None required	None predicted					
	Industry and Bord Bia to discuss and progress with the amenity sector (including the retail outlets) seeking joint industry and EU funds for promotional campaign(s) around gardening										
	Implementation of the Food Dudes Programme and developing the delivery model to make it available to all national schools who wish to participate in it on an ongoing basis										
	To examine opportunities for collaboration with other Departments and state agencies in the promotion of fresh produce and its role in a healthy, balanced diet										
	To develop Bloom further as the major showcase of Irish Horticultural production, landscape design and construction										
	To roll out the Origin Green programme to horticulture producers with business and environmental measures that will underpin the sustainability credentials of the industry										
	Develop a strategy to maximise opportunities in relation to supplier relations, import substitution and below cost selling in the retail horticultural market						The potential impact is unlikely to be significant to the extent that it would be perceptible for any European sites. Overall the impact is predicted to be neutral.	None predicted	N/A	None required	None predicted
	Establish an industry funding mechanism (levy) to promote horticultural products										
	Review the Terms and Conditions of those employed in the horticultural sector										
	Explore the potential for expanding evidence informed 'food in schools' programmes										
	Develop a strategy to maximise opportunities in relation to supplier relations, import substitution and below cost selling in the retail horticultural market										
	Establish an industry funding mechanism (levy) to promote horticultural products										

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
Prepared Consumer foods	All companies to sign up to Origin Green initiative	Overall the impact is predicted to be neutral as there are few linkages, if any, to the conservation objectives of European sites. Any increased production that may result as a consequence of the actions above will require greater knowledge transfer, and allowing for the use of organic fertilisers and “greening” techniques to ensure the sustainability of the sector, may have positive effects on the environment although these are unlikely to be tangible in the context of European sites.				
	Increase industry expenditure on R&D and innovation by setting a target of a 10% increase in funding per annum					
	Government agencies in consultation with the industry to align the definition of PCF and co-ordinate their approach accordingly					
	Develop a sectoral strategy for food and drink SMEs, which sets out supports, targets and best practice for the entry, development and progression of these companies to 2025					
	Continue to work directly with indigenous companies to identify new export market opportunities and develop services and supports for companies to facilitate export growth					
	Implement the Competition and Consumer Protection Bill when enacted					
	Drive greater participation by the sector in the Innovation Voucher and Innovation Partnership Programmes					
	Continue and expand the Employment and Investment Incentive Scheme (Enterprise Ireland) and Seed Capital Scheme to encourage more investment in small PCF companies					
	Bord Bia to maximise the use of Origin Green and their Quality Assurance programmes to differentiate Irish produce					
Continuation and possible expansion of the Foreign Earnings Deduction (F.E.D.)						
Alcoholic beverages	Establish discussion groups for malting barley growers	Overall the impact is predicted to be neutral as there are few linkages, if any, to the conservation objectives of European sites. Any increased production that may result as a consequence of the actions above will require greater knowledge transfer, and allowing for the use of organic fertilisers and “greening” techniques to ensure the sustainability of the sector, may have positive effects on the environment although these are unlikely to be tangible in the context of European sites.				
	All companies to sign up to Origin Green initiative					
	Increase industry expenditure on R&D and innovation by setting a target of a 10% increase in funding per annum					
	Industry to continue to highlight the value to the national economy of the drinks sector and work to reduce the fiscal and regulatory burden					
	Industry and state agencies to work collaboratively to develop an Irish Whiskey and food pairing trail as a major tourist attraction and to differentiate Irish food and drink produce					
	Develop fiscal and other revenue generating initiatives which will enable the Irish Whiskey industry to fund the minimum three year maturation process					

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	<p>Industry to work with D/ECLG and EPA to improve waste recycling levels, facilities, implementation and to measure change on an ongoing basis</p> <p>Assist development of new industry entrants by structured knowledge transfer systems including mentoring, training and skills transfer</p> <p>Continue to support, protect and promote Ireland's spirit GIs (Geographical Indications)</p> <p>Develop a sectoral strategy for food and drink SMEs, which sets out supports, targets and best practice for the entry, development and progression of these companies to 2025</p> <p>Continue to work directly with indigenous companies to identify new export market opportunities and develop services and supports for companies to facilitate export growth</p> <p>Facilitate the growth of the premium drinks categories by providing market knowledge for the US market</p> <p>Continuation and possible expansion of the Foreign Earnings Deduction (F.E.D.)</p> <p>The CSO/DJEL survey to track the Business Expenditure on R&D (BERD) performance of the PCF sector</p>					
Artisan/Small Food business	<p>Creation of civic and festival markets similar to the English Market in Cork and Harvest Festival in Waterford in our major cities and towns.</p> <p>Expansion of Dublin Food Chain initiative to other cities.</p> <p>Create a pipeline of companies growing beyond Artisan/Small Food Business definition via the introduction of both bespoke 1:1 and group multi-level supports across strategic planning, marketing and marketing finance (for example Ascent, Superbrands and Step Change Fund).</p> <p>Introduce a new support programme for Direct to Consumer producers aimed at enabling producers to extend their local and regional business reach and resulting in a pipeline for new entrants to the Artisan Food Market at Bloom.</p> <p>Increase the opportunity for successful meet the buyer occasions through market focused relationship development with distributors, specialist retailers, and other retail and foodservice buyers on the domestic and international markets.</p> <p>Annual investment in and delivery of small business specific consumer and market insights.</p> <p>Formal opportunities to transfer learnings from craft food and drink production to new sector entrants via food apprenticeships and placements</p>	<p>Overall the impact is predicted to be neutral as there are few linkages, if any, to the conservation objectives of European sites. Any increased production that may result as a consequence of the actions above will require greater knowledge transfer, and allowing for the use of organic fertilisers and "greening" techniques to ensure the sustainability of the sector, may have positive effects on the environment although these are unlikely to be tangible in the context of European sites.</p>				

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
Forestry	Increase the forest area in accordance with sustainable forest management principles, to support long term sustainable roundwood supply through an increase in the annual afforestation level to 15,000 ha from 2021, subject to demand and the availability of funding	In the absence of any safeguards the impact of increased afforestation rates on the integrity of European sites could be both positive and negative depending on the location of the afforestation, the habitat which it is replacing and the species being planted. There are significant systems in place that will further clarify this impact. It is anticipated that most new afforestation will occur on lands now classified as agricultural land and therefore the level of impact on Natura sites will be reduced relative to historic afforestation patterns.	B01-07,H01, H02,	Peatlands are unlikely to be the focus of any afforestation so the main habitats at risk would be sub-optimal grassland such as 6210 Orchid-rich calcareous grassland* or, less likely 6510 Lowland hay meadows, wetlands, fens etc.	All relevant statutory requirements (e.g. SMRs) including AA screening of Forestry permit applications and non-statutory measures that apply. These will minimise the risk that activities that pose likely significant effects at the local level are dissuaded by means of action-based schemes such as GAEC, GLAS where relevant etc. Ongoing monitoring and adaptive improvement of these non-statutory measures will ensure that they are fit for purpose in the context of avoiding adverse impacts on the integrity of European sites.	It is reasonable to assume that successful application of the safeguards will mitigate any potential impacts to level whereby no adverse impacts on the integrity of European sites remains.
	Sustainably manage the forest resource, including genetic resources through the introduction of a national forest management planning system and state support for seed stand management and the establishment of seed orchards thereby ensuring the provision of a full range of timber and other benefits	This action would be expected to have an overall positive impact as sustainable forest management is required for some Annex II species and assists in catchment management, thereby benefitting aquatic European sites.	None predicted	N/A	None required	None predicted
	Ensure that afforestation, management of existing forests and the development of the forest sector are undertaken in a manner that enhances their contribution to the environment, takes account of the Environmental Report of the Forestry Programme 2014-2020, and fulfils their capacity to provide public goods and services	This action would be expected to have an overall positive impact as sustainable forest management is required for some Annex II species and assists in catchment management, thereby benefitting aquatic European sites.	None predicted	N/A	None required	None predicted
	Increase the roundwood harvest to 4.6 m cubic metres by 2025. Produce a new all Ireland roundwood production forecast. Develop a flexible and environmentally responsible roundwood supply chain to enhance the competitiveness of the processing sector and the production of high value products	The approach that places a strong emphasis on environmental sustainability would be expected to provide a positive impact overall although linkages to the European site integrity are not clear at this level of this level of assessment.	None predicted	N/A	None required	None predicted
	Support the development of a competitive, innovative, value-added and market focused sector	In the absence of any safeguards the impact of increased wood processing, particularly those that require use of treatment chemicals such as dye and preservatives on the integrity of European sites could be negative depending on the location of the processing facilities. There are significant systems in place that will further clarify and safeguard against this impact.	H01-H05	The impacts of Wood processing activities can pose risks to water quality (surface and groundwater) in the absence of safeguards. Annex Habitats and species at risk include 1130 Estuaries, 1150 Lagoons*, 7230 Alkaline fens, 1092 White-Clawed Crayfish, 1096 Brook Lamprey, 1106 Atlantic Salmon and other species that may rely upon these habitats or species.	Control over chemical use in this sector is primarily through regulations relating to storage and use of hazardous materials and is regulated by the Environmental Protection Agency and by local authorities. Such regulation requires annual reporting in many cases and monitoring of surface and groundwater is usually a requirement. Therefore in reality the risk of any significant point source or diffuse contamination or pollution is extremely low.	It is reasonable to assume that successful application of the safeguards will mitigate any potential impacts to level whereby no adverse impacts on the integrity of European sites remains.

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	DAFM should explore innovative financial and funding mechanisms to encourage greater level of institutional investment in afforestation and in mobilising wood supply from the existing private forest estate	Whilst not directly linked to the integrity of European sites, funding from both private and State sectors will be essential for expansion of the sector and implementation of environmental protection measures. In the absence of funding there could be a greater need to reduce spending on environmental measures. Overall this action is regarded to be a positive potential impact.	None predicted	N/A	None required	None predicted
	Ensure that the tax treatment of forestry does not act as a disincentive for the achievement of national policy goals in particular forest cover, roundwood supply to industry and climate change mitigation					
	Maintain a healthy forest environment through sustainable forest management and through early detection and control measures for pests and diseases	This action would be expected to have an overall positive impact as sustainable forest management is required for some Annex II species and assists in catchment management, thereby benefitting aquatic European sites. This action will also serve to benefit native flora and fauna through the control of non-native species.	None predicted	N/A	None required	None predicted
	Ensure the availability of suitable programmes of education and training across the sector and research programmes targeted at identified needs. The importance of investment in training, research and development is recognised and the strategic actions focus on a more co-ordinated overall approach in these important areas	This action would be expected to have an overall positive impact as profession development will lead to increased understanding sustainable forest management in the context of maintaining and restoring the condition of European sites.	None predicted	N/A	None required	None predicted
	Forest products, forest services and the management of the forest resource must have a strong, market-led, quality focus	This action would be expected to have an overall positive potential impact assuming that the Sector incorporates the protection and management of forestry in European sites within criteria used to measure quality and performance.	None predicted	N/A	None required	None predicted
Seafood	Commission an independent review of the existing aquaculture licensing system involving all key stakeholders, to identify the current shortcomings and bottlenecks (legislative, resource and logistical), to report by early 2016 and implement necessary changes to the aquaculture licensing system as a matter of priority	Carrying capacity is recognised but In the absence of safeguards, a Strategy to expand shellfish and aquaculture production could have adverse effects on the European sites through loss of feeding resources for birds and Annex II species, damage and deterioration of offshore and coastal habitats.	F01, F02, H01-3, I01-3, J02.	Impacts on a range of coastal, marine and freshwater habitats and species including 1130 Estuaries, 1140 Tidal mudflats, 1170 Reefs, 1106 Atlantic Salmon, 1223 Leatherback Turtle, 1351 Harbour Porpoise etc.	The AA Screening procedures integrated into the Aquaculture licensing and foreshore licensing in the case of harvested wild seaweed will prevent activities at the local scale being carried out without first having been screened for likely significant effects and assessed further where necessary. The site-led approach will respect the sensitivities of the local area.	It is reasonable to assume that successful application of the safeguards will mitigate any potential impacts to level whereby no adverse impacts on the integrity of European sites remains.
	Develop a strategy to expand shellfish and aquaculture production taking account of the carrying capacity of bays					
	Develop and initiate practical and competitive measures to attract additional landings into Irish ports and continue to invest significantly in necessary infrastructure at the Fishery Harbour Centres					
	Develop a strategy with practical and implementable actions to deliver scale in the key seafood sectors, including food ingredients	Overall the impact is predicted to be neutral as there are few direct linkages, if any, to the conservation objectives of European sites.	None predicted	N/A	None required	None predicted

Chapter	Action	Potential Impact	Relevant Threat/Pressure (Article 17 coding or otherwise)	Examples of Potential Receptor type (habitat/species/bird)	Applicable Safeguards and how these will address potential impacts	Residual Impact
	Develop and initiate practical and competitive measures to attract additional landings into Irish ports and continue to invest significantly in necessary infrastructure at the Fishery Harbour Centres	Overall the impact is predicted to be neutral as there are few direct linkages, if any, to the conservation objectives of European sites.	None predicted	N/A	None required	None predicted
	Develop a strategy with practical and implementable actions to deliver scale in the key seafood sectors, including food ingredients	Overall the impact is predicted to be neutral as there are few direct linkages, if any, to the conservation objectives of European sites.	None predicted	N/A	None required	None predicted
	Develop a strategic plan with practical and implementable actions to significantly increase the quantity of seafood added value across all main species groups. This strategy should complement the strategic plan to deliver scale in the key seafood sectors, including food ingredients and should, at a minimum reduce the level of produce sold in commodity form from 70% to below 50%	Overall the impact is predicted to be neutral as there are few direct linkages, if any, to the conservation objectives of European sites.	None predicted	N/A	None required	None predicted
	Progress participation and engagement of Origin Green with seafood companies with the aim of bringing all seafood companies under the programme by 2016	Overall the impact is predicted to be neutral as there are few direct linkages, if any, to the conservation objectives of European sites.	None predicted	N/A	None required	None predicted
	Improve the environmental sustainability of the sector including fishermen gear sensitivity and replenishment of depleted inshore stocks	This action would be expected to have an overall positive potential impact assuming that the Sector incorporates the protection and management of resources in European sites within criteria used to measure quality and performance.	None predicted	N/A	The AA procedures integrated into the Aquaculture and sea fisheries licensing and assessment of Fisheries Natura Plans and associated Risk Assessments will prevent activities at the local scale being carried out without first having been screened for likely significant effects and assessed further where necessary. The site-led approach will respect the sensitivities of the local area. These measures are particular to inshore fisheries and are part of Ireland's Programme of measures for the Birds Case and provide systematic mitigation of risks to protected features.	It is reasonable to assume that successful application of the safeguards will mitigate any potential impacts to level whereby no adverse impacts on the integrity of European sites remains.
	Give renewed priority to R & D into seafood based new product development, food ingredients and functional foods. This research should also include both harvested wild and farmed seaweeds and their by-products.	Actions relating to the development of the sector to marine species of fish, shellfish and seaweed as possible new products could have adverse effects on the European sites through loss of feeding resources for birds and Annex II species, damage and deterioration of offshore and coastal habitats.	F01, F02.	Coastal, marine and offshore habitats and species such as 1170 Reefs , 1210 Annual vegetation of drift lines, 1130 Estuaries and 1140 Tidal mudflats as well as a range of species such as 1364 Grey Seal , 1365 Common Seal and 1355 Otter .		



Philip Farrelly & Co

Unit 5A, Fingal Bay Business Park,
Balbriggan, Co. Dublin.

Tel: (01) 690 6555

Email: info@pfarrelly.com