# Draft Headford Local Area Plan 2015-2021
# Strategic Environmental Assessment (SEA)
# Screening Report

January 2015

Forward Planning
Galway County Council
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## 1.1 Introduction

Galway County Council has prepared a Draft Headford Local Area Plan (LAP) 2015-2021 in accordance with Part II, Section 20 of the Planning and Development Acts 2000 (as amended) and the policies and objectives of the Galway County Development Plan (GCDP). The GCDP is the overarching statutory framework for the development of the County and the LAP must be consistent with the objectives of County Development Plan under the Planning and Development Acts 2000 (as amended).

The purpose of this Screening Report is to consider whether the LAP requires a Strategic Environmental Assessment (SEA). SEA is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan/programme before a decision is made to adopt the plan/programme; the procedures for which are set out in the Planning and Development (SEA) Regulations 2004 (and as amended by S1 201 in 2011). The preparation of a full SEA is not mandatory for LAPs with a population of less than 5,000 persons, such as Headford LAP. However in accordance with the above SEA Regulations, the planning authority must determine whether or not the implementation of such a plan would be likely to have significant effects on the environment and therefore require a SEA. Screening is the process for deciding whether a particular plan, other than those which SEA is mandatory, would be likely to have significant environmental effects, and would thus warrant SEA.

## 1.2 Purpose of the Local Area Plan

The Draft Headford Local Area Plan 2015-2021 has been prepared in accordance with sections 18,19 and 20 of the Planning and Development Acts 2000 (as amended), which sets out the provisions for the preparation of local area plans. Section 20 states that “a local area plan may be prepared in respect of any area or an existing suburb of an urban area, which the planning authority considers suitable and, in particular, for those areas which require economic, physical and social renewal.”
The plan will be in effect for a six year period following its adoption but may be extended up to 10 years under the mechanisms of the Planning and Development (Amendment) Act, 2010.

LAPs take a detailed look at a specific area, identifying and analysing the various issues of relevance, before establishing and setting out principles for the future development of the area. These issues include amongst others;

- Economic Development
- Transportation Infrastructure
- Urban Design and Landscape
- Built and Cultural Heritage
- Natural Heritage and Biodiversity

The main aim of the LAP for Headford is to set out a framework for the physical development of Headford village so that growth may take place in a co-ordinated, sensitive and orderly manner, while at the same time conserving the villages “built and natural heritage”. The plan strives to inform the general public, statutory authorities, developers and other interested bodies of the policy framework, objectives and land-use proposals for the Headford area.

The plan has been prepared with careful consideration of existing services, land uses, infrastructure, planning proposals and outstanding planning permissions. Environmental considerations and the concept of sustainable development underpin all the aims, policies and objectives of the plan. An all encompassing development strategy for the proper planning and sustainable development of Headford village and environs has been prepared based on an analysis of social, economic, infrastructural, environmental and heritage data. Key objectives of the LAP include; amongst others, enhancement and development of the village core; identification of lands suitable for residential expansion and the rationalisation of the existing residential footprint of the village.

## 1.3 Location of Headford Village:

Headford is a small village located approximately 26km north of Galway City. The village is located on the N84 National Secondary Road from Galway to Castlebar and the R333 and the R334 regional roads serve the village. The location of Headford in relation to Galway city is shown below in Figure 1.1 below

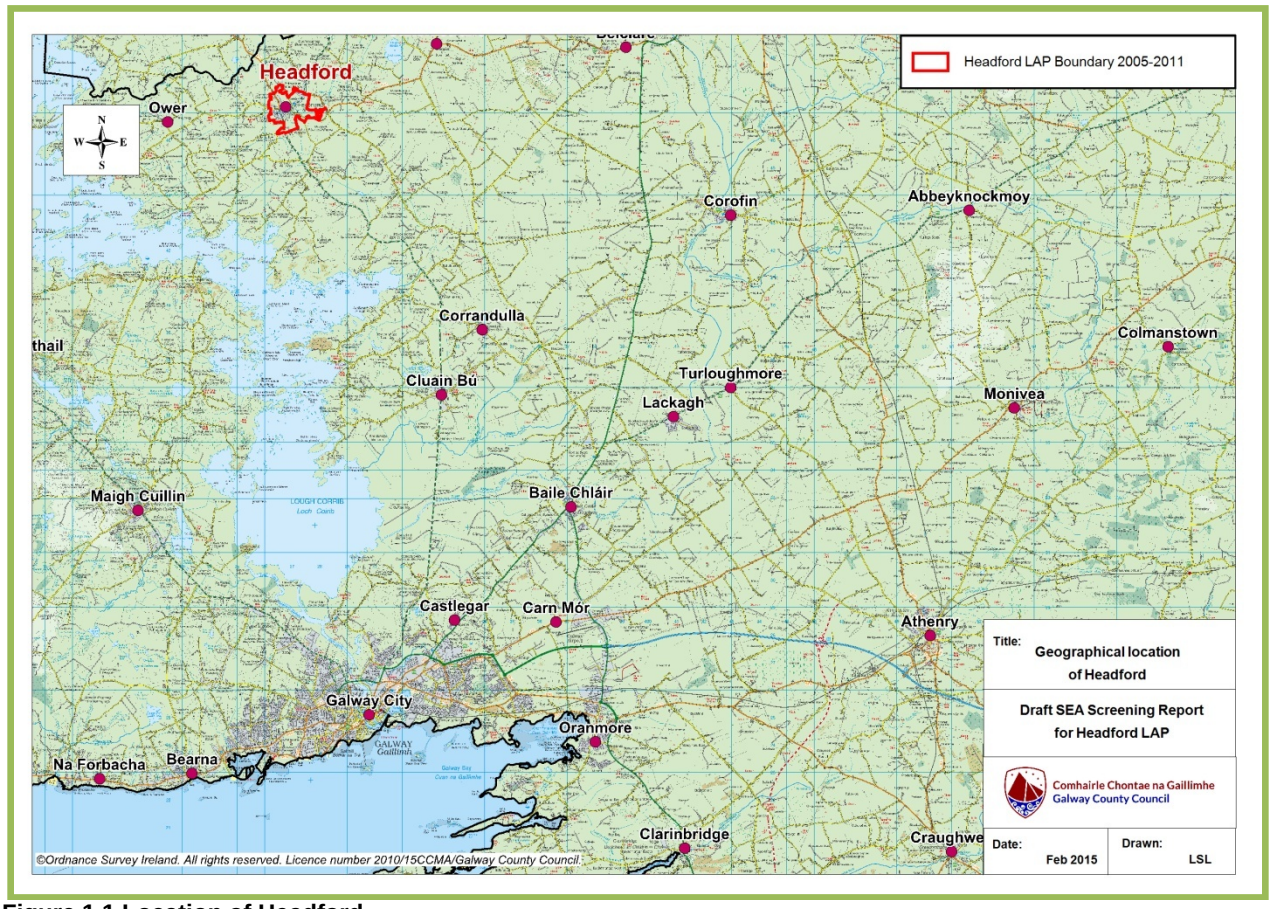



**Figure 1.1 Location of Headford**

## 1.4 Population Context

The National Spatial Strategy sets out a national settlement structure which focuses on growing urban centres such as the identified gateways, the hubs and linked hubs and larger towns so that they can reach a sufficient size or "critical mass" in order to enhance economic competiveness within the region.

The Core Strategy of the County Development Plan has identified Headford within the "Other Villages" category. This category of villages within the county provides a more limited range of services to smaller hinterlands. Typical service provision often includes a range of retail and educational services, but limited financial, health and community services. These settlement structures have the potential to support additional growth, offering an alternative living option for those people who do not wish to reside in larger settlements.

A key component of the Headford Local Area Plan 2015-2021 is to ensure that it aligns with the County Core Strategy/Settlement Strategy as set out in the Galway County Development Plan. The Core Strategy indicates that Headford has been assigned a population growth target of 251 persons by 2021 with a housing land requirement of 10.61ha (which includes the permitted 50% over provision) in order to accommodate residential development over the plan period. Under the previous Headford Local Area Plan 2005-2011, there was approximately 78.55ha of undeveloped zoned residential land within the plan boundary. This plan must therefore consider the most appropriate residential development options such

as phasing, rezoning or dezoning in order not to exceed the maximum requirements of the 10.61ha from the Core Strategy and to ensure that suitable lands are brought forward for development during the plan period.

A variety of options to achieve this reduction and ensure consistency with the Core Strategy were examined, such as phasing development, re-zoning, and possible de-zoning of residential lands.

## 1.5 Consultation

A background Issues Paper was prepared in May 2014 with the aim to promote discussion and consultation on issues affecting the sustainable development of Headford. In addition a Pre-Draft Screening Report was submitted to the environmental authorities on the 17th July 2014, under the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No.436 of 2004) amended by the Planning and Development (Strategic Environmental Assessment (Amendment) Regulations 2011(S.I No. 201 of 2011). The following section provides information on submissions from Environmental Authorities received as part of the Pre-Draft Background Issues Paper and the Pre-Draft SEA Screening Report.

## Consultee

**Environmental Protection Agency**

## Environmental Issues

**1. Submission on Background Issues Paper:**
**(Submission Received on the 2nd July 2014)**

**SEA DETERMINATION**
It is a matter for Galway County Council to determine whether or not the implementation of the proposed plans would be likely to have a significant effect on the environment.

Reference is made to the criteria set out in Annex II of the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (The SEA Directive) and also set out in Schedule 2A of the Planning and Development(Strategic Environmental Assessment) Regulations 2004(S.I No.436 of 2004).

**Future Amendments to the Draft Plan**
Future proposed amendments should take account of the SEA Regulations Schedule 2A Criteria and should be subject to the same assessment as undertaken in the "environmental assessment" of the Draft Plan.

**Infrastructure Planning**
Adequate and appropriate infrastructure should be in place, or required to be put in place, to service any development proposed and authorised during the lifetime of the particular plan.

**Appropriate Assessment**
Refers to Article 6 of the Council Directive 92/43/EEC. NPWS should be consulted as part of screening the plan for AA.

**Updated SEA Regulations/Circular**
New SEA Regulations that should be referenced and integrated into the plan and SEA process and to DoECLG Circular (PSSP 6/2011) which should be referenced to and integrated into the plan.

**European Communities (Birds and Natural Habitats) Regulations 2011**
Reference is made to these guidelines

**Environmental Authorities**
Reminded of the requirement to give notice to Environmental Authorities and that a copy of the decision regarding the determination should be made available for public inspection at the council offices, local authority website and notification to the Environmental Authorities that have already been consulted.

**2. Submission on Pre-Draft SEA Screening**
**(Submission Received on the 25th July 2014)**
Similar in content to that received on the 2nd July 2014 and outlined above. There is however a specific comment made to the plan as follows:
-Attention to the fact that the Radiological Protection Institute of Ireland has classified that area as a "High Radon Area"
-The Western CFRAMS should be taken into account and integrated as appropriate into the plan and it should be ensured that water quality is protected in accordance with WFD Western River Basin District Management plan.
-In terms of the protection of biodiversity, the plan should afford designated and undesignated sites (NHAs, Natura 2000 sites) and associated ecological corridors and linkages appropriate protection in the preparation of the plan.

## Consultee

**Department of Arts, Heritage and the Gaeltacht (NPWS)**

## Environmental Issues

**(1) Submission on Background Issues Paper**
**(Received on the 04th July 2014)**

It is noted that the Council has confirmed that the plan will be subject to screening for appropriate assessment and SEA and that a Stage 2 Strategic Flood Risk Assessment (SFRA) will be prepared if necessary

The Department recommends that Part XAB of the Planning and Development Act, 2000 as amended, should be followed in relation to the relevant terminology, stages and tests of the appropriate assessment process, supplemented by case law of the Court of Justice of the European Union where relevant

The following are specific comments that have been made on the Issues Paper:

**Biodiversity and Nature Conservation**
The plan area does not contain any nature conservation sites but drains towards two European sites. The plan area supports habitats and species which occur outside the protected site network.

It is recommended that the plan should include a natural heritage chapter with objectives to conserve, protect and restore nature conservation sites, biodiversity and ecological networks in and around the plan area. It is also considered that the integration of ecological considerations and concerns into all other elements of the plan to ensure proper planning, sustainable development, and compliance with European Directives and National Legislation.

**Data/Information sources**
Consultation should take place with the National Parks and Wildlife Service website as a key source of data, information and publications on nature conservation sites and biodiversity issues of relevance to the plan and any associated environmental assessments.

As site boundaries of nature conservation sites may be subject to change and additional information will become available over time, the Council is advised to ensure that the most-up-to date information and data available from the NPWS website is used in the plan making process at each stage.

Data on ecological features are also available from other sources including the National Biodiversity Data Centre, Bird Watch Ireland, and EISs and other reports that cover the plan area and surrounding areas.

**Key Ecological/Natural Heritage Issues**
It is suggested that the plan area should contain or is likely to contain the following:

- Annex IV(Habitats Directive) species of flora and fauna, and their key habitats (i.e. breeding sites and resting places) which are strictly protected wherever they occur, whether inside or outside the above sites e.g Otter and Bats
- Other species of flora and fauna and their key habitats which are protected under the Wildlife Acts 1976-2000, where they occur
- Protected species and natural habitats as defined in the European Liability Directive (2004/35/EC) and European Communities(Environmental Liability) Regulations, 2008, including:

Birds Directive–Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur)

Habitats Directive–Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur)

- Stepping stones and ecological corridors including nature conservation sites (other than Natura 2000 sites), habitats areas and species locations covered by Article 10 of the Habitats Directive

The plan area drains towards the European sites, Lough Corrib candidate Special Area of Conservation(c SAC; site code 000297) and Lough Corrib Special Protection Area (SPA; site code 004042). These are sites of international importance for nature conservation and form part of Ireland's contribution to the Natura 2000 network within the EU.

It is suggested that there should be objectives to conserve, protect and restore the above in the plan, taking the wider aims and obligations of the Habitats Directive (e.g. Article 6(2),10,12-16), and the Birds Directive(e.g. Article 4(4) into account.

**Appropriate Assessment**
It is stated that the Council is the competent authority with responsibility for carrying out screening for appropriate assessment, and for carrying out the appropriate assessment if required. It should be noted that screening is the process of determining if an assessment is necessary, it is not itself an assessment.

It is stated that the screening for appropriate assessment is carried out to assess, in view of best scientific knowledge, if the proposed plan, on its own and in combination with other plans and projects, including the existing plan, is likely to have a significant effect on a European site. While a screening distance of 15km outside the plan area is recommended in current guidance, screening should focus on the sites and ecological receptors that are at risk. A catchment based approach is recommended for sites that support surface water or groundwater dependant habitats and species that are qualifying interests of SACs or special conservation interests of SPAs.
It is suggested that as the plan Area drains towards two European sites, it is considered possible that an appropriate assessment and the preparation of an Natura Impact Report will be required. Lough Corrib is a large, mixed geology lake that contains three of the Habitats Directive Annex 1 lake habitats, but only two of these are currently listed as qualifying interests of the site. The Annex II aquatic plant species, Slender Naiad (*Najas Flexilis*) is a qualifying interest. As a result of its size and the habitats present (in particular the hard water habitat), Lough Corrib is of international conservation importance. The conservation objectives for the lake habitats in the SAC are to restore these habitats and Slender Naiad to favourable condition

**Issues of Potential Concern**
It is noted that the following are of potential concern in relation to the plan:

- Water supply and abstraction; wastewater and discharges; flood alleviation and prevention; new infrastructure, particularly roads, power lines and telecommunications; and amenity and recreation provision where this could impact nature conservation sites and/or sensitive species.

**SEA Environmental Report**
It is stated that appropriate assessment under Article 6(3) of the Habitats Directive is specifically intended to determine the likely significant effects on European sites in view of their conservation objectives, and to ensure that no plan or project would have an adverse effect on the integrity of a European site is approved or adopted (unless in exceptional circumstances where the requirements of Article 6(4) of the Habitats Directive can be met).

Appropriate Assessment does not deal with all significant ecological issues of relevance to proper planning and sustainable development. It is suggested that the Biodiversity, Flora and Fauna section of the SEA should be undertaken or in conjunction with a suitably qualified ecologist and in conjunction with the NIR to ensure full integration of biodiversity issues (i.e. Nature Conservation Sites, rare and protected species, habitats that are rare or of high ecological value and Article 10 of the Habitats Directive).

It is also suggested that for the biodiversity, flora and fauna section of the report, the scope of the SEA should include a number of specific environmental data sets.

In general, it is stated that no areas should be identified or targeted for development (e.g through land use zoning or other strategies) without information on the ecological sensitivities of the lands in question.

The Environmental Report is required to contain environmental objectives. It is suggested that for biodiversity, flora and fauna these should integrate with the objectives and obligations of a number of Directives.

It is suggested that strategic environmental objectives should be included for all nature conservation sites (not just European sites.

**(2). Submission on Pre-Draft SEA Screening**
**(Submission received on the 15th of August 2014)**
The Department notes the preliminary findings of the "Pre-Draft Strategic Environmental Assessment Screening Report" submitted for the plan. It is stated that the screening must be relevant to the draft plan itself and when it is prepared and must be relevant to and cover any amendments or material alterations that may be made at a later stage in the plan making process. It is noted by the Department that they have not yet seen the draft plan.
It is noted that the Council previously confirmed that the plan will be subject to screening for appropriate assessment. It is stated that screening should be carried out in accordance with section 117U of the Planning and Development Act, 2000 (as amended) and should assess in view of the best scientific knowledge, if the proposed plan, on its own and in combination with other plans and projects is likely to have a significant effect on an European site. In addition screening should be carried out with respect to the conservation objectives of relevant sites.

There are no nature conservation sites in the plan area. However the Headford River and plan area drain towards the European sites, Lough Corrib cSAC and Lough Corrib SPA.

It is noted that based on information currently available, the key concern relates to the existing pressures and future threats to water quality in the lake arising from the plan and the plan area. In this regard it is noted that the potential effects of the draft plan must be considered in combination with effects on water quality arising from other plans and projects in the catchment when screening.

The Department reconfirms the previous advice that scientific analysis and reasoning underpinning the findings and decisions reached when screening (or in the Natura Impact Report) should be presented as should the necessary objective information.

It is noted that two key elements of the SEA screening exercise relate directly to screening for appropriate assessment in this case. These are (1)The issue of the value and vulnerability of the area likely to be affected due to exceeded Environmental Quality Standards or limit values and (2)The issue of the effects on areas which have recognised European Union protection status.

The response to the former is that (future) development proposals will be assessed as to their acceptability and will not be permitted if adequate treatment cannot be assured. The response to the later includes the following: the Headford River is classified as "moderate" ecological status and flows into Lough Corrib but "that the site is not considered to be highly vulnerable to impacts from the plan or development that arises from it", subject to compliance with protective objectives from the County Development Plan and the new LAP

The Department is concerned that these responses do not address the critical issues in relation to potential effects of the existing plan area and new draft plan on European sites. It is noted that these elements are pivotal to screening for appropriate assessment but are also important when screening for SEA.

The Department remains of the view that there are potential risks that the plan on its own and in combination with other plans and projects could have significant effects on a European site in view of its conservation objectives and that an appropriate assessment is required. It is noted that this has potential consequences for the SEA screening exercise and at a minimum it is recommended that the responses to the two issues in the paragraph above should be given further consideration and revised.

| **Consultee** |
|---|
| **Department of Arts, Heritage and the Gaeltacht (NPWS)** |
| **Meeting of the 1st of September 2014. Issues raised:** |
| Concern regarding the impact of the water quality in Lough Corrib and the possible impact of the existing and proposed plan on the water quality of the lake.<br>The full provision of the Habitats Directive should be applied in preparing the Environmental Reports<br>The conservation objectives of Lough Corrib are to restore by 2021, this needs to be reflected in the reports. |

# 2.0 Outline of the Draft Headford Local Area Plan

## 2.1 Introduction

Prior to establishing and setting out principles for the future development of the area, the Draft Headford Local Area Plan 2015-2021 addresses specific areas, while identifying and analysing the various issues of relevance. A summary of the relevant sections are examined in section 3.3 with a number of policies and objectives identified that will provide mitigation measures to protect the environment.

The Lough Corrib candidate Special Area of Conservation(cSAC; site code 000297) and Lough Corrib Special Protection Area (SPA; site code 004042) are downstream of the Headford LAP and approximately 3.4km from the plan boundary.

This cSAC and SPA were designated for a range of habitat types and species, which are listed in, and subject to, the conservation objectives for the cSAC and SPA accordingly. It is therefore considered that development within the plan area has the potential to result in impacts on European (Natura 2000) sites and will be subject to AA screening.

## 2.2 Development Strategy Options

As part of the plan preparation a number of Development Strategy Options were examined in order to ascertain which option could deliver most effectively on the vision for the village.

In reviewing the previous Local Area Plan development strategy, this was not considered an appropriate approach as it would not take account of advances in planning guidance, best practice or recent changes to legislation or E.U Directives. This approach would also conflict with the Regional Planning Guidelines and the County Core Strategy and therefore would not be in accordance with the proper planning and sustainable development of the village.

A number of potential development options were developed having regard to the Core Strategy, settlement hierarchy and village role envisaged in the Galway County Development Plan, the population and growth trends and potential of the village, the existing development pattern and character of the village, existing amenities and environmental sensitivities and the lands and services available for future development. These options are described below:

### 2.2.1 Development Option 1-Development Option Informed by Current Planning Permissions

Planning for the future development of Headford would be primarily informed by the current grants of planning permission which would exceed the development land requirements for the village as set out under the Core Strategy. This option would lead to piecemeal settlement pattern, taking account of the locations of these lands and would also provide a narrow focus for development based solely on residential development, without considerations of the wider land use requirements for the future growth of the village.

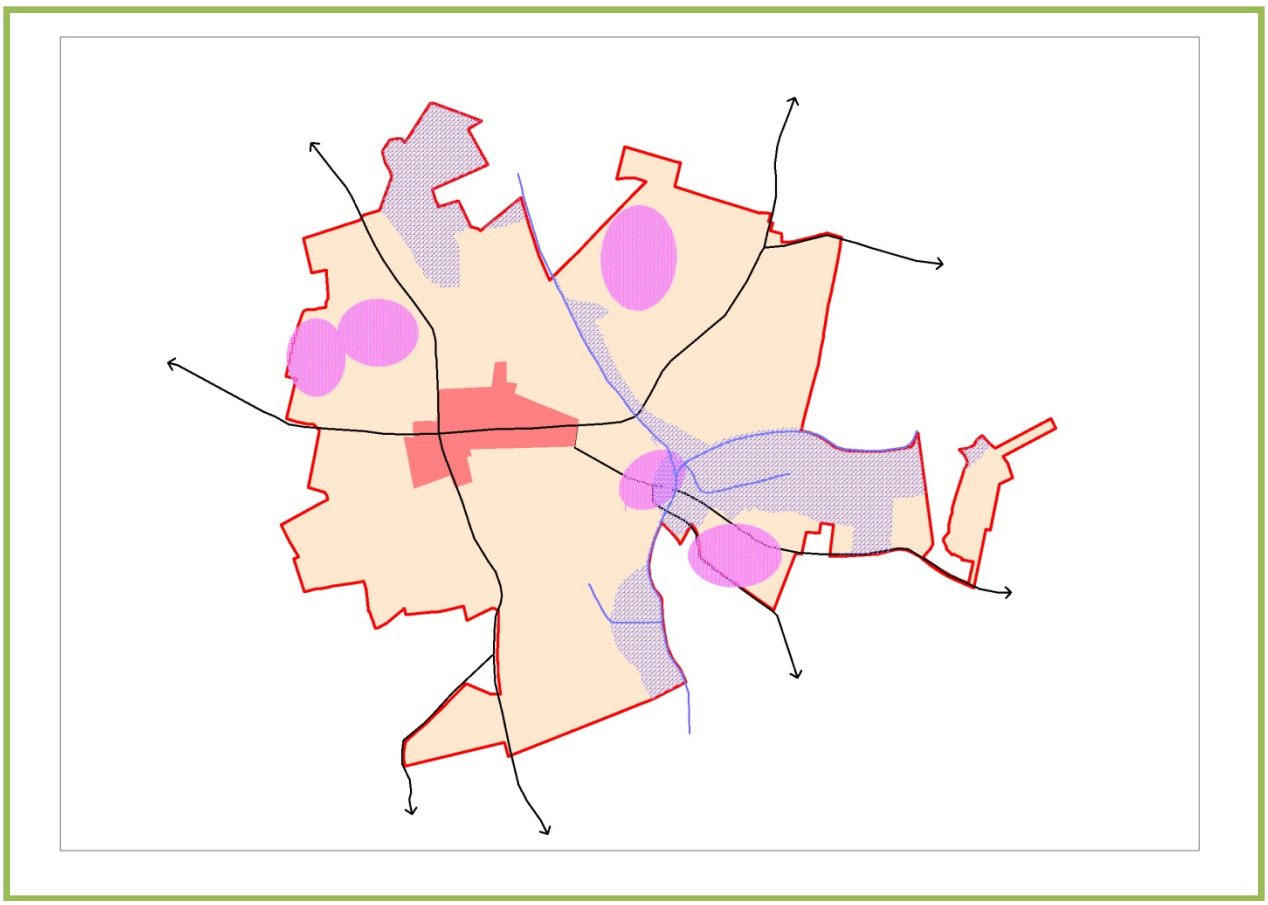


**Figure 2.1 Development Option Informed by Current Planning Permissions**

### 2.2.2 Development Option 2 – Development Option to Focus on Expanding the Village Outwards

All new development has the potential to materialise on spacious sites with an abundance of amenity space outwards along the approach roads serving the village. This approach would provide an alternative housing option to single rural housing in the surrounding rural area and would likely constitute urban sprawl and displace development growth away from the existing village centre to locations removed from employment bases, school sites and general services within the village core, making it more difficult to encourage balanced and integrated development.

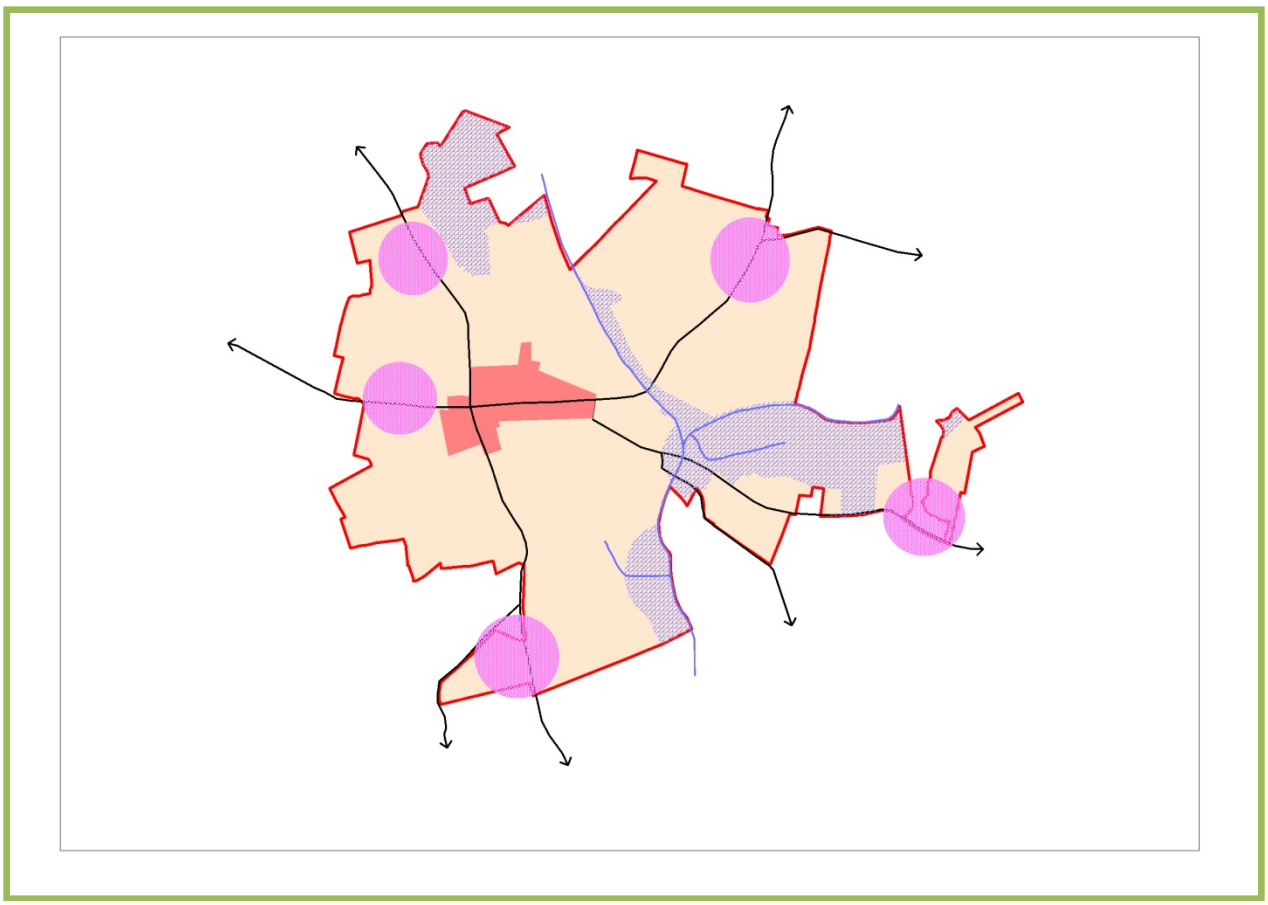


**Figure 2.2 Development Option to Focus on Expanding the Village Outwards**

### 2.2.3 Development Option 3-Development Option to Promote Consolidation of the village including a Refined Plan Boundary

This option proposed a refined plan boundary for Headford village. The previous plan boundary encompassed a large area far removed from the village core which has not developed in the preceeding years. Previous planning applications have also been refused permission in these outlying locations, primarily due to distance from the village centre. In order to align with national policy, the Core Strategy of the Galway County Development Plan and to provide greater certainty to development potential, it is considered that a plan with consolidation of the village would be more beneficial in planning terms.

Reducing the area of the Local Area Plan provides an opportunity to focus on consolidating development within the village area, which has developed in a piece meal manner over the years.

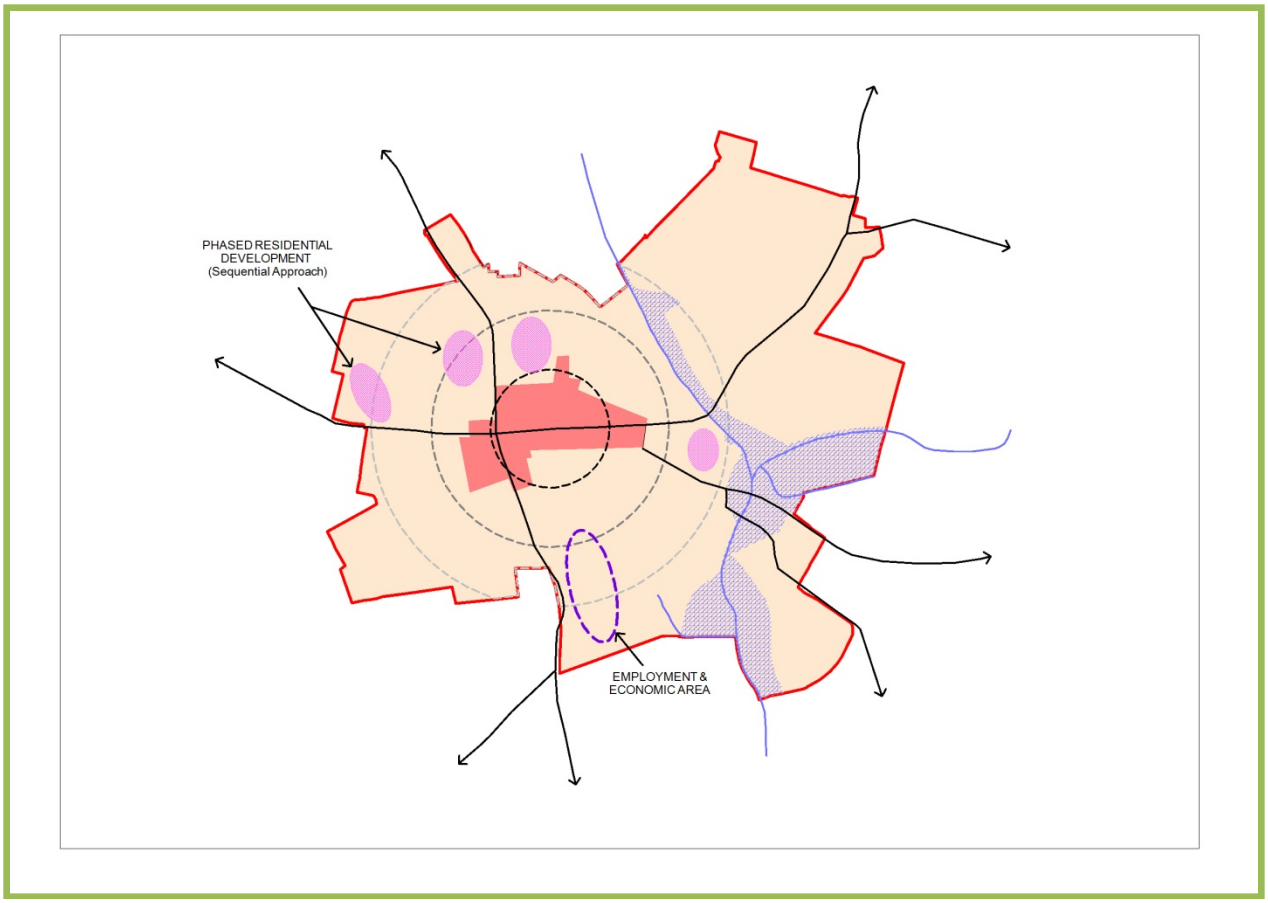



**Figure 2.3 Development Option to Promote Consolidation of the village including a Refined Plan Boundary**

### 2.2.4 Preferred Development Option

Option 3 is considered the preferred Development Option. This option supports the consolidation of development with the plan area and supports the sequential development of the remainder of the urban core from the centre outwards and ensures that serviced residential lands closer to the village centre and public transport options are the primary focus for development in the short to medium term. This option would give greater certainty to the growth of the village, including rationalised land use zonings to align with the Core Strategy. This option will in turn encourage reduced travel demands, more sustainable transport options and ease of access to community facilities, employment sources and retail and service provision within the village. The preferred Development Strategy Option 3 has also been informed by the statutorily required Pre-Draft Strategic Environmental Assessment Screening and seeks to deliver on the Core Strategy requirements as set out for Headford in the County Development Plan in a planned and sustainable manner.

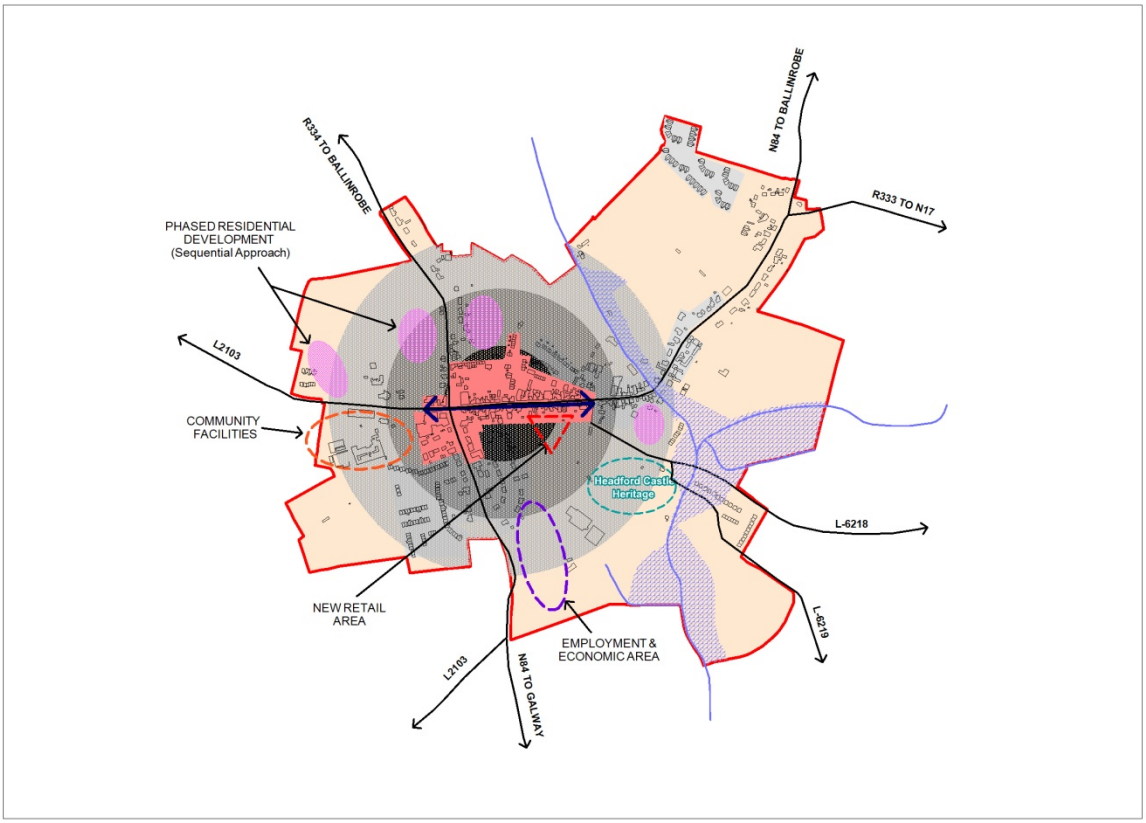



**Figure 2.4 Preferred Development Option**

## 2.3 The Relevant Sections of the Local Area Plan with the Policies and Objectives Identified within the Plan

### 2.3.1 Residential Development

Section 3.2 of the Local Area Plan examines the residential requirements of the plan area. The primary aim of the LAP is to ensure the delivery of high quality, sustainable living environments which are attractive, safe and vibrant which meet the need of the residents. Residential lands have been identified within the plan and are included in a phasing scheme. Phase 2 lands are not generally developable within the lifetime of the plan and phase 1 lands are promoted for immediate development. The phasing of the residential lands is identified on good planning practice such as sequential development.

#### 2.3.1.1 Provisions in the Plan

There are a number of policies and objectives identified in the residential section that ensures that sustainable communities and well-connected residential developments are created at appropriate locations and in accordance with the phasing scheme identified within the plan. Policy DS1, RD1, RD2 and Objective DS1, DS2, RD1, RD2 all ensure the principles of sustainable residential development. Objective RD12 ensures that natural features and stone walls that are located with the site are retained where possible.

### 2.3.2 Social and Community Development

Section 3.3 of the Local Area Plan examines the community requirements of the plan area. Due to the increase in population in the village and wider area there is a greater demand for the provision of services such as school services, school places, community facilities and amenities. This section outlines the importance of providing appropriately zoned land to meet the demand for community facilities within the plan area.

#### 2.3.2.1 Provisions in the Plan

There are a number of policies and objectives that promote social inclusion, universal access and the provision of an adequate level and equitable distribution of community facilities (childcare, sports, play and recreation facilities) and amenities in the plan area. Policy CF1 supports the provision of an equitable distribution of community facilities and amenities throughout the plan area. Objectives CF1-CF9 prioritises and identifies lands for community, recreation and amenity facilities respectively. Objective CF9- "Riverside Networks" encourages the development of walkways and cycleways and indirect impacts on natural heritage and designated conservation areas arising from such networks will be examined. It is a central theme of the policies and objectives within this section that community facilities are provided in tandem with new development and in accordance with the principle of sustainable development.

### 2.3.3 Economic Development

Section 3.4 of the Local Area Plan examines the economic development of the plan area. Headford is regarded as an important commuter village to the Galway Gateway, however the plan area has the potential to become increasingly more self-sufficient by the creation of employment opportunities at the same time accommodating small scale and start up businesses. The plan has identified and zoned lands that would be suitable for a variety of enterprises and the village centre can accommodate a number of suitable retail and service facilities which will generate economic activity. This section has also identified tourism as an important economic driver for the plan area, with a number of tourism activities identified (water based recreation, archaeological & architectural heritage).

#### 2.3.3.1 Provisions in the Plan:

The Policy ED1 supports sustainable economic development and employment creation in the plan area through the identification of appropriately located service lands for business, enterprise, retail, commercial and tourism developments. There are a number of individual Objectives ED1, ED2, ED3, ED4, ED5, ED6 and ED7 that facilitates the economic, tourism, and retail development within the plan area in accordance with the proper planning and sustainable development of the area.

### 2.3.4 Transportation Infrastructure

Section 3.5 of the Local Area Plan examines the transportation infrastructure requirements. This section covers topics such as Smarter Travel, public transport and park and ride facilities, walking and cycling and roads, traffic management & parking are also examined in this section.
It is considered that an efficient transport system is essential for the sustainable development of Headford. It is a strategic aim of Galway County Council to provide a safe and efficient transport system and a quality road infrastructure for road users.

#### 2.3.4.1 Provisions in the Plan

Policies promote the use of public transport, walking and cycling as environmentally sustainable alternatives, and that the road network has the capacity to accommodate motorised traffic. The objectives contained in this section include the prioritisation of walking, cycling and public transport links. Reference is made to "Smarter Travel: A Sustainable Transport Future-A new Transport Policy for Ireland 2009-2020 (and any updated/superseding document) which is fully incorporated into the plan.

Policies and Objectives in the plan state that any transport network improvements will be subject to normal environmental considerations including in combination effects under the EU Habitats Directive Assessment as appropriate and may only proceed where it can be shown that they will not have significant negative impact on Natura 2000 sites and their qualifying interests. Policy ST1 promotes the use of public transport, walking and cycling as convenient and environmentally sustainable alternatives to private transport. In addition Policy TI1 ensures that the road and street network is safe and convenient and that it has adequate capacity to accommodate motorised traffic and non-motorised movements and that it also provides for a high environmental quality with appropriate adjacent development and built form in the case of urban streets and streetscapes. Objective ST1 ensures that the land use planning is integrated within the plan area and the need to reduce travel, particularly private transport. Objective ST2 specifically promotes the concept of sustainable transport within the plan area and a number of objectives have regard to the provisions of a safe and efficient road and transport network.

### 2.3.5 Utilities Infrastructure

The sustainable development of Headford is dependent on the satisfactory provision of utilities infrastructure. Section 3.6 of the plan includes a number of sub-sections as follows:

- Water Resources
- Water Supply & Water Quality
- Climate Change, Air Quality and Radon Gas
- Flood Risk Management
- Waste Management
- Telecommunication, Energy Infrastructure & Renewable Energy

There is a need to ensure that there is adequate availability and delivery of utility and environmental infrastructure to support the development of the area. The phasing of development in tandem with the provision of necessary infrastructure and utilities will also be critical to the future sustainable development of the area.

#### 2.3.5.1 Water Resources

The water resources of the region comprise surface waters including rivers, lakes, transitional water and ground water. These resources are utilised for a wide range of uses including potable water, industry, amenity, agriculture and in the substance of ecosystems. The EU Water Framework Directive 2000/60/EC requires member states to ensure that all their waters (including surface and groundwater) achieve at least "good status" by 2015 and to ensure that current status does not deteriorate in any waters. The plan area falls within the catchment of the Western River Basin District (WRBD) and as such, much

information regarding the environmental baseline is derived from the Western River Basin Management Plan (WRBMP).[1]

The Western RBMP takes into account lakes, rivers, groundwater, transitional and coastal waters. Information on the status and pressures on water bodies can be derived from the WRBD database. The following are the relevant water bodies that are located within the Headford plan boundary:

- The Clare-Corrib Ground-Waterbody (IE_WE_G_0020). According to the Water Framework Directive, the groundwater body Clare-Corrib has an overall status of "poor". The groundwater body is at risk of not achieving a good ecological or good chemical status/potential by 2015. There are a number of objectives identified for this groundwater body in order to restore the groundwater status by 2021 as follows:
    - Prevent Deterioration
    - Restore Good Status
    - Reduce Chemical Pollution
    - Achieve Protected Areas Objectives

- The Headford River, Tributary of Corrib (IE_WE_30_3484). According to the Water Framework Directive (2009), the river water-body had an overall status of "moderate". The river was at risk of not achieving good ecological or good chemical status/potential by 2015. The latest status in 2011(source GCC/EPA) has the overall status of the river water body as "good" and therefore there is an upward trend in the quality status. The overall objective as outlined by the WFD(2009) is to restore that status of this river by 2021, as follows:
    - Prevent Deterioration
    - Restore Good Status
    - Reduce Chemical Pollution
    - Achieve Protected Areas Objectives

- The Lough Corrib (Lower) (IE_WE_30_6669). According to the Water Framework Directive (2009), the Lake waterbody had an overall status of "moderate". The lake was at risk of not achieving good ecological or good chemical status/potential by 2015.The latest status in 2011(GCC/EPA) has an overall status of the Lake as "moderate".

  There are a number of objectives identified for this water body in order to restore the waterbody status by 2021 as follows:
    - Prevent Deterioration
    - Restore Good Status
    - Reduce Chemical Pollution
    - Achieve Protected Areas Objectives

  The EU Water Framework Directive 2000/60/EC requires member states to ensure that all their waters (including surface and groundwater) achieve at least "good status" by 2015 and to ensure that current status does not deteriorate in any waters. While the Headford River has improved its status from "moderate" to "good" this will contribute to the improvement in the "moderate status" of Lough Corrib (lower).

[1] The Western River Basin District Management Plan 2009-2015 is a plan for the implementation of the EU Water Framework Directive, which commits all Member States to preventing deterioration and achieving at least good status in our rivers, lakes, estuaries, coastal and ground waters by the year 2015. The Plan describes actions that are proposed to ensure the necessary protection of waters over the coming years. It sets out how the aims and objectives of improving and protecting water quality and ecology in the waters of each river basin district could be achieved, by means of a Programme of Measures.

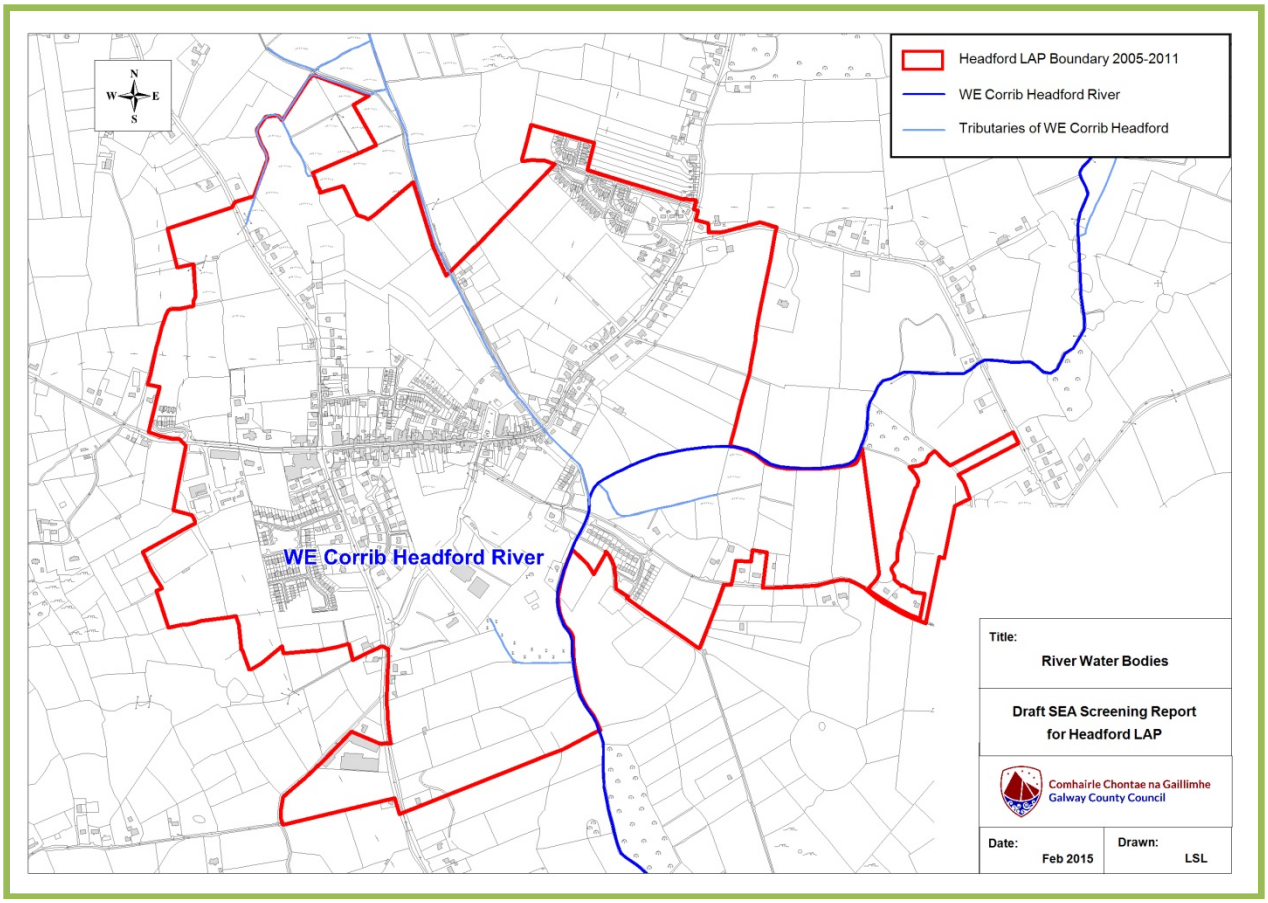



**Figure 2.5 River Water bodies**

### 2.3.5.2 Groundwater

Groundwater is a significant resource and refers to water stored underground in saturated rock, sand, gravel and soil. Surface and groundwater functions are closely related and form part of the hydrological cycle. The protection of groundwater from land uses is a critical consideration and groundwater vulnerability is becoming an important management tool. The entire island of Ireland has been designated as a Protected Area for Groundwater under the Water Framework Directive (WFD) Groundwater is important as a drinking water supply as well as the supply to surface waters across the region. Groundwater is exposed to higher concentrations of pollutant that are retained in the layers of rock and soil (Todd,1980). The exposure to pollutants lasts much longer as groundwater moves at a slower pace through the aquifer. The quality of drinking water supply, fisheries and terrestrial based habitats is intrinsically linked with ground water quality. The LAP area is underlain by the Clare-Corrib groundwater body. This groundwater is a large regionally important karstified aquifer dominated by conduit flow. There are some small areas in the vicinity of Headford which have been categorised as being a locally important aquifer which is productive only in local zones. Groundwater velocities are variable with a much higher east-west transmissivity and lower velocities in the north south domain. Overall, flow is in the southwest direction with all groundwater discharging into Lough Corrib. The Geological Survey of Ireland aquifer categories are based on their vulnerability to pollution i.e the ease of which it can enter the subsurface layers. Aquifers described with “development potential” are more sensitive to pollution than aquifers with “poor development potential”. Similarly aquifers of “high or extreme vulnerability” are more sensitive to pollution. The Clare-Corrib Groundwater body has been classified as “Poor” status with a requirement to restore it to “Good Status” by 2015.
The Clare-Corrib Groundwater is illustrated in figure 3.2.

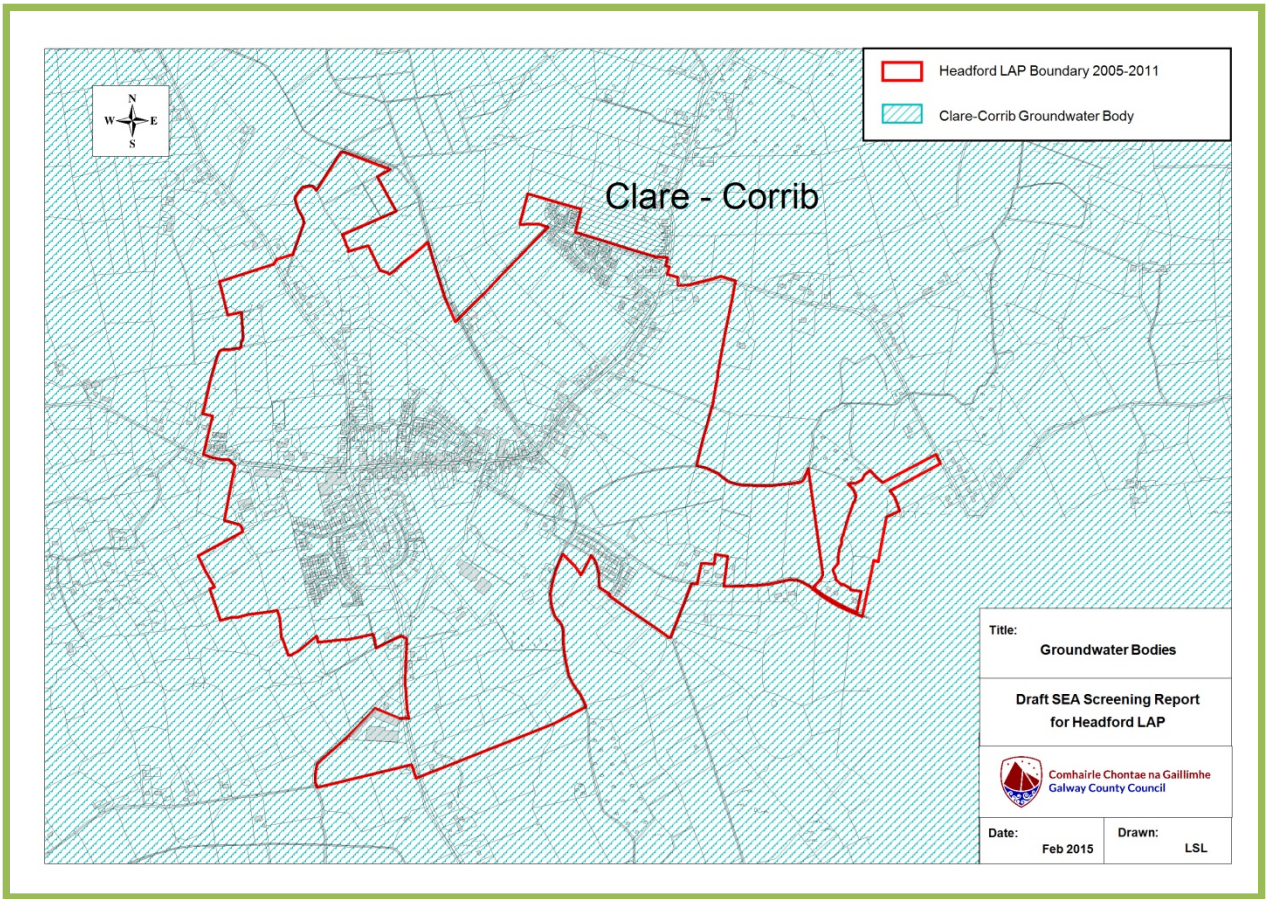



**Figure 2.6 Groundwater Bodies**

### 2.3.5.3 Provisions in the Plan

Galway County Council has included policies and objectives with the Headford Local Area Plan which state that the protection of groundwater resources and dependant wildlife/habitats in accordance with the EU Groundwater Directive (2006/118/EC) and the European Communities Environmental Objectives (Groundwater) Regulations 2010 (SI No. 9 of 2010) (or any updated legislation) will be supported. In addition, aquifers which under-lay the plan area will be protected from the risk of environmental pollution and regard will be had to any groundwater protection schemes and groundwater source protection zones where data has been made available by the Geological Survey of Ireland. Objective WQ2 supports the protection of groundwater resources and dependant wildlife/habitats in accordance with the Groundwater Directive 2006/118/EC and the European Communities Environmental Objectives (Groundwater) (Amendment) Regulations 2012.

There is specific objective (WQ1) that supports the implementation of the relevant recommendations and measures as outlined in the Western River Basin Management Plan and that development shall only be permitted where it can be demonstrated that the proposal would not have an unacceptable impact on the water environment, including surface water, groundwater quality and quantity, river corridors and associated wetlands.

### 2.3.6 Water Supply and Water Quality

The availability of a water supply of sufficient quality and quantity is essential for public health purposes and sustainable growth. The water supply to Headford is served by the Tuam Regional Water Supply, where both the supply and network are adequate for the lifetime of the plan and beyond. The provision of a water supply and drainage systems for the development of industrial, commercial, agricultural, domestic and other uses is essential for the plan area to develop to its full potential.

#### 2.3.6.1 Provisions in the Plan

Galway County Council has included Policy (WQ1) in the Headford Local Area Plan 2015-2021 which supports the protection of water quality in accordance with the EU Water Framework Directive (2006/60/EC) and the European Communities(Water Policy) Regulations 2003 (SI No.722 of 2003)( as amended)(or any updated legislation), including the implementation of the relevant recommendations and measures as outlined in the Western River Basin District Management Plan 2009-2015, (and any updated/superseding documents). Waterbodies and watercourses and associated riparian zones, wetlands and natural floodplains within the plan area will be protected from inappropriate development as outlined in objective NH7 and NH8 respectively.

### 2.3.7 Wastewater Treatment and Disposal

The Headford WWTP is situated on a c.1.8ha site near the Deerpark road, off the N84. The Headford Wastewater Treatment System is an activated sludge treatment process and uses sequential batch reactors with phosphate reduction and tertiary filtration. The existing treatment works has a design capacity of 3,000 PE. A study of the ultimate design requirements was also undertaken at the design stage and provisions have been made at the existing treatment works layout for a future expansion to 6,000 PE. The current scheme was designed on the basis of an equivalent population of 3,000 persons. Final effluent for the waste water treatment plant discharges to the primary discharge point at the Headford Stream via 600mm concrete pipe with non-return flap valve. The primary discharge point is a shared outfall discharging treated effluent after tertiary treatment and also an overflow from the storm tank should the capacity of the storm tank be exceeded.

Effluent from the tertiary filter flows to the effluent storage tank before overflowing to the outfall chamber. Any overflows from the storm tank that could not be returned to the inlet works is conveyed to the final effluent chamber also. This combined flow is then conveyed to the outfall at the Headford Stream via the 600mm outfall pipeline. The EPA has issued a discharge licence for the wastewater from the treatment plant. An Appropriate Assessment was also carried out as part of the application process and it was determined that subject to compliance with the conditions and emission limit values in the licences the discharges from Headford WWTP will not have a significant impact on the conservation objectives of the Lough Corrib SAC/SPA and the achievement of “good” status in the receiving waters will secure the integrity of the ecosystems.

In order to ensure that surface water is disposed of appropriately, future developments will be required to address surface water disposal in a controlled and sustainable manner, through on-site systems, discharge to adjacent surface water (where available) or discharge to an existing surface water sewer if available. In Headford the surface water disposal is generally via a combined sewer network.

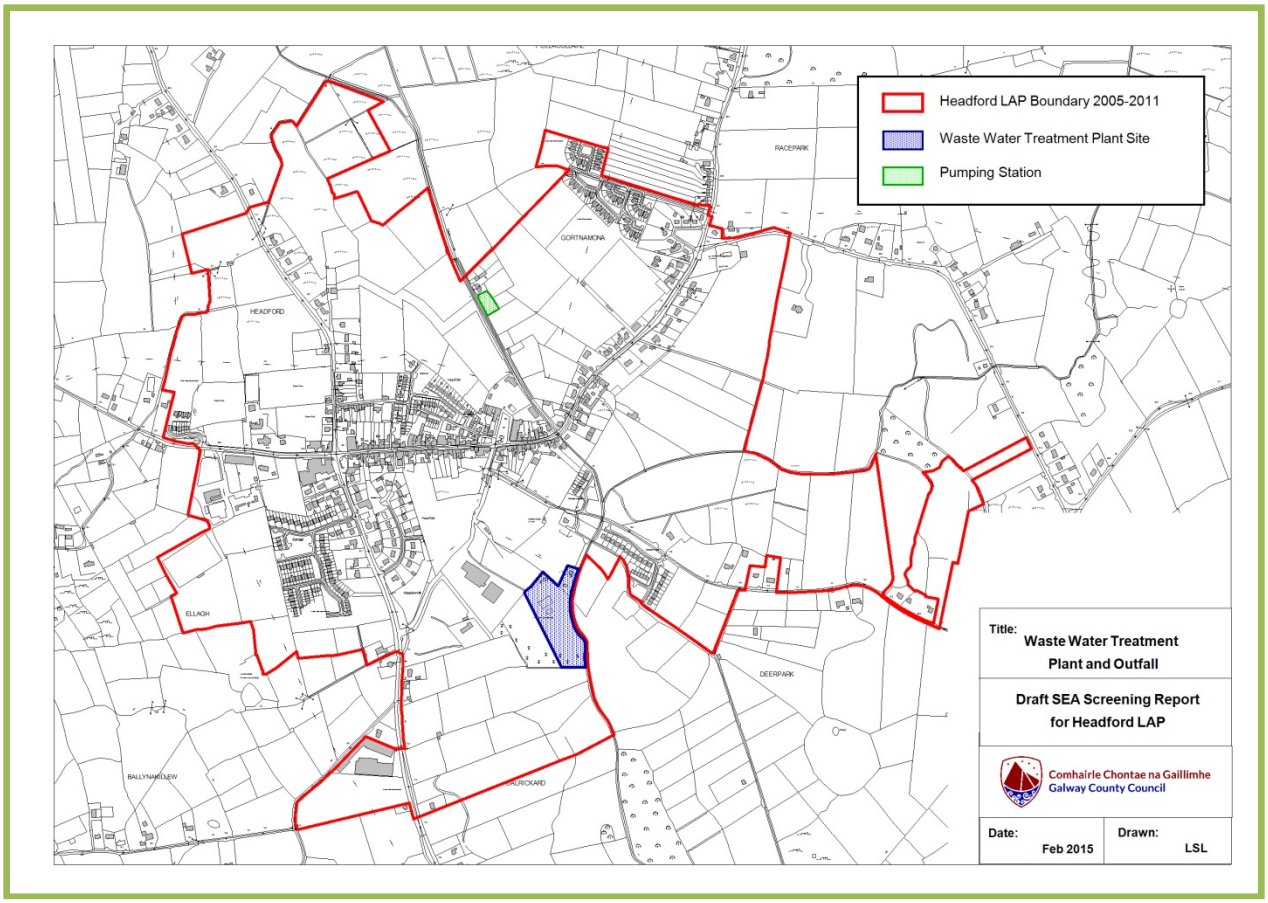



**Figure 2.7 Waste Water Treatment Plant and outfall**

#### 2.3.7.1 Provisions in the Plan

Galway County Council has included objectives UI3 and UI4 relating to the provision of wastewater disposal within the plan area and that new developments will only be permitted where it can be clearly demonstrated that they can be serviced and that there is adequate capacity in order to protect Lough Corrib cSAC and SPA and their respective qualifying interests. Objective UI5 seeks to ensure the satisfactory and sustainable disposal of surface water and promoting sustainable drainage systems (SuDs) such as permeable surfaces and rainwater harvesting.

### 2.3.8 Climate Change, Air Quality and Radon Gas

#### 2.3.8.1 Climate Change & Renewable Energy

The impacts of climate change, partly due to man-made actions present very serious global risks and threaten the basic components of life, including health, access to water, food production and the use of land. The development of villages such as Headford into the future can have a significant impact at local level on reducing the impacts of climate change. This can include measures such as promoting reduced travel demand by integrating land use and transportation and encouraging passive solar design and energy efficient buildings. Promoting the use of renewable energies to limit greenhouse gases and other pollutants with the reduction of fossil fuels has an environmental benefit.

#### 2.3.8.2 Provisions in the Plan

As part of the preparation of the Local Area Plan for Headford, Policy ENV1 and Objective ENV1 has been included to support the reduction of climate change impacts, energy conservation and greater use of renewable energy sources/technologies.

#### 2.3.8.3 Air Quality & Radon Gas

The plan contains a number of policies and objectives that focus on air quality, including ensuring adherence to relevant air quality standards and promoting planting and landscaping with enhanced public transport and energy efficiency buildings.

In relation to radon it is a natural occurring radioactive and carcinogenic gas that originates from the decay of uranium in rocks and soils. Radon has no smell, colour or tastes and can only be detected using special detectors. The Radon Protection Institute of Ireland has identified Headford as a high radon area, estimating that greater than 20% of homes are above the reference level. The Radon Protection Institute of Ireland highlights the dangers of exposure to radon, including the increased risk of lung cancer.

##### 2.3.8.3.1 Provisions in the Plan

As part of the preparation of the Local Area Plan for Headford, objective ENV3, ENV4 and ENV5 provides specific reference to improving air quality and purification and the implementation of the specific guidance on the radon prevention measures for new homes as contained within the Building Regulations.

### 2.3.9 Flood Risk and Protection

*The Planning System and Flood Risk Management, Guidelines for Planning Authorities (DEHLG, 2009)* defines flooding as, "a natural process that can happen at any time, in a wide variety of locations". Flooding can be caused from a variety of sources-from the sea and from rivers, but in addition prolonged, intense and localised rainfall can also cause sewer flooding, overland flow and groundwater flooding". The Strategic Flood Risk Assessment that has been undertaken on the plan, informed by inter alia site walkovers, local knowledge and flood risk indicator mapping, has indicated flood risk in a number of areas in the village. Undeveloped lands are zoned Open Space, Recreation & Amenity, and existing developed areas located within Flood Zone A/B have been attributed a Constrained Land Use Zoning which seeks to facilitate the appropriate development of existing buildings while ensuring protection against flood risk.

#### 2.3.9.1 Provisions in the Plan

Galway County Council has included policies and objectives for the Headford Local Area Plan which support, in co-operation with the OPW, the implementation of the EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No.122 of 2010) and the DEHLG/OPW publication *Flood Risk Management Guidelines 2009* (and any updated/superseding legislation or policy guidance), and *Circular PL 2/2014* which provides clarification on a number of issues within the Guidelines.

Policies and Objectives contained within this section reflect the principles that are outlined in *The Planning System and Flood Risk Management, Guidelines for Planning Authorities (DEHLG, 2009)* and *Circular PL 2/2014*. The avoidance principle of the sequential approach will be met to avoid development in areas identified as at risk of flooding and to ensure that flood risk will not be increased elsewhere. Developments that are granted permission in areas close to flood plains will be required to contain measures to ensure that the risks of flooding are minimised or eliminated. (See Policy FL1 and Objectives LU8, LU9, FL1, FL2, FL3, FL4 and FL5 and associated Development Management Guidelines FL1 & FL2).

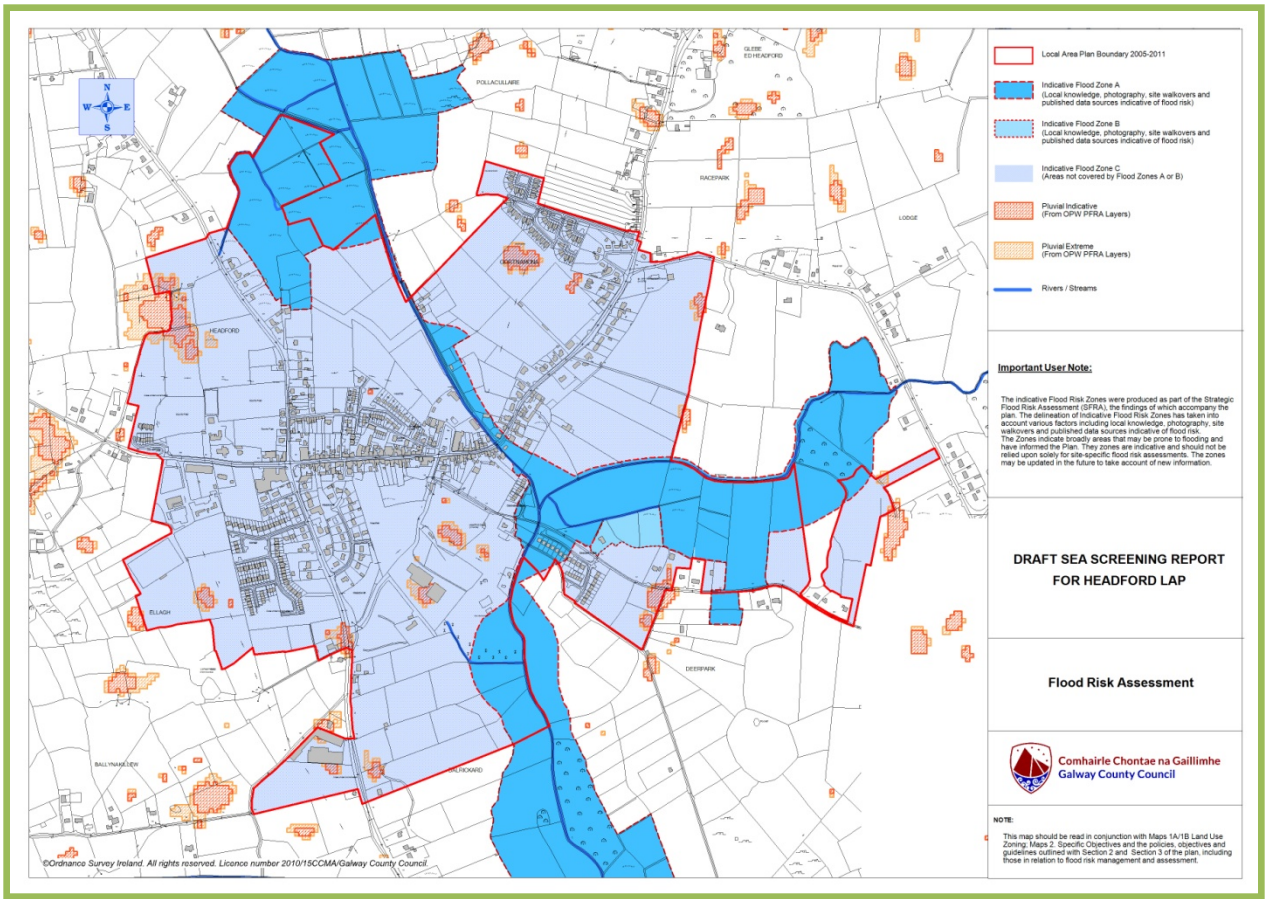



**Figure 2.8 Flood Risk Map**

### 2.3.10 Waste Management

The Replacement Connacht Waste Management Plan (2008-2011) (and as updated) provides policy on waste management in the county. Best practice in terms of waste management recommends that as much waste as possible is processed through reduction, reuse and recycling.

#### 2.3.10.1 Provisions in the Plan

Policy WM1 and Objective WM1 support the concept of waste reduction and sustainable waste management through a number of measures that will not adversely affect residential amenity or environmental quality.

### 2.3.11 Telecommunications, Energy Infrastructure & Renewable Energy

The provision of a sufficient and adequate telecommunication and energy infrastructure within the plan area is required to ensure that the growth of the village occurs in a coherent manner. The plan supports the provision of renewable energy and is seen as a means to address climate change challenges in order to address the commitments of the EU Directive 2009/29/EC on the promotion of renewable energy sources.

#### 2.3.11.1 Provisions in the Plan

Policies and Objectives within this section support the provision of adequate energy and communications infrastructure within the plan area.

### 2.3.12 Urban Design & Landscape

Urban design is essential in the creation of attractive and sustainable living and working environments and the establishment of a unique identity and sense of place for the village.

In terms of landscape, the Landscape Character Assessment of the Galway County Development Plan classifies landscapes according to their landscape character, value and sensitivity. Headford is located within the Northeast Galway (Tuam Environs) landscape character area. The landscape sensitivity classification ranges from class 1 to class 5, with class 1 being the least sensitive and class 5 being the most sensitive. The landscape designation for Headford is class1.The views of Headford Castle and St.Marys Church are also of local importance.

#### 2.3.12.1 Provisions in the Plan

As part of the preparation of the Local Area Plan for Headford, Policy UD1 and Objectives UD1-UD6 provides specific reference to improving the urban design of the plan area. In relation to the landscape aspect of the plan area objective UD7 provides sufficient protection.

### 2.3.13 Built & Cultural Heritage

The Galway County Development Plan incorporates the record of protected structures, recorded monuments and areas designated Architectural Conservation Areas. These provisions protect structures which are considered to be of special architectural, social, historical, archaeological, artistic, cultural, scientific, technical interest or value.

#### 2.3.13.1 Architectural/Archaeological Heritage

There are a number of recorded monuments in Headford and its surrounds which provide evidence of early settlement in the area. The recorded monuments are afforded special protection under Section 12 of the National Monuments (Amendment) Act, 1994 and are listed in Table 3.1. Section 12(3) of the latter Act requires that, any interference/work to a known archaeological site should be notified in writing to the Minister two months in advance of the commencement of work. Some sites and monuments may be afforded dual protection and may be listed as both Record/National Monuments and Protected Structures.

| Monument No. | Sheet No. | Townland | Classification |
|---|---|---|---|
| GA042-02101 | 42 | Balrickard | Castle |
| GA042-02102 | 42 | Balrickard | Mansion |
| GA042-120 | 42 | Deepark(Clare By) | Church and Graveyard |
| GA042-146 | 42 | Headford | Windmill |
| GA042-147 | 42 | Headford | Earthwork |

**Table 2.1 Recorded Monuments**

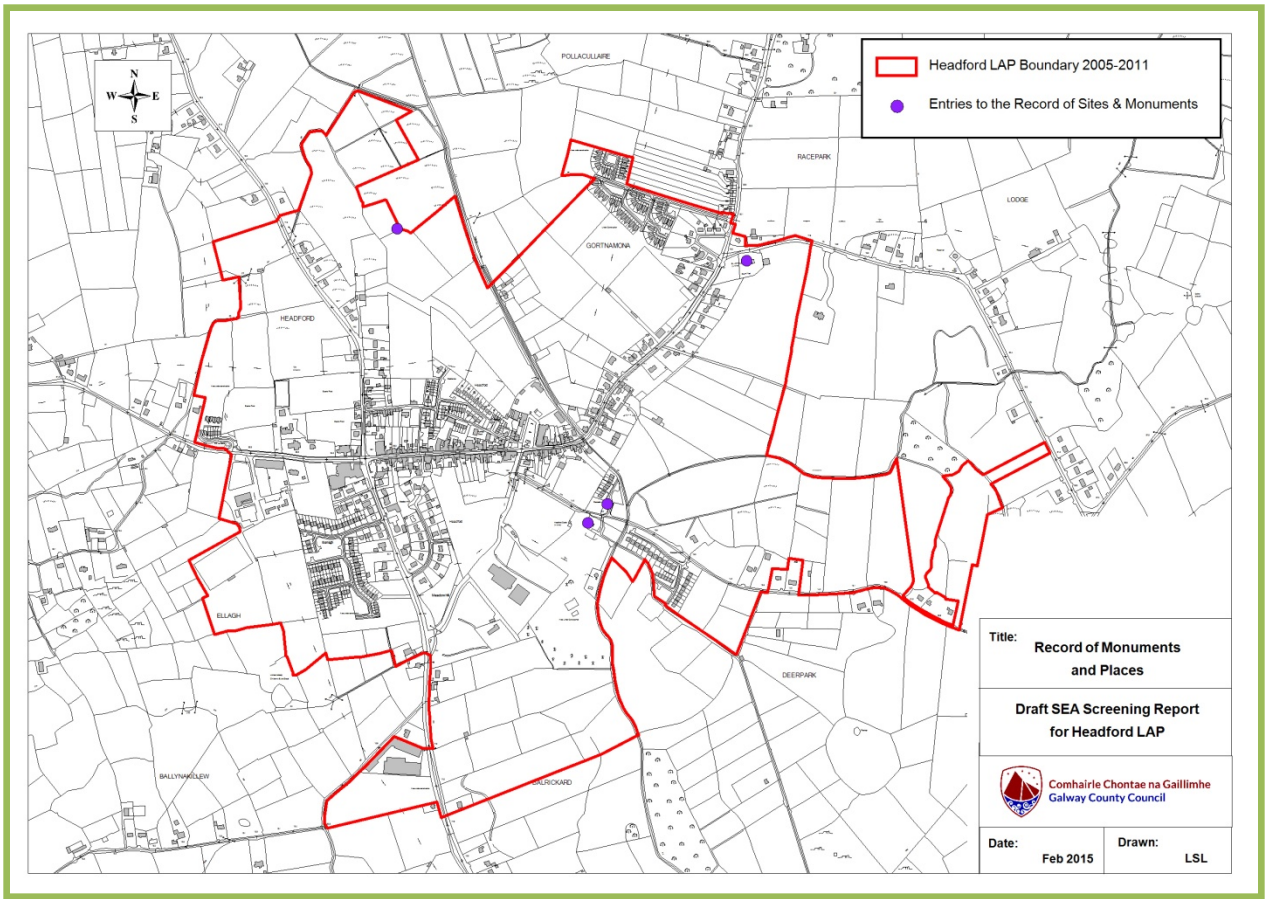



**Figure 2.9 Recorded Monuments**

In addition to the recorded monuments there are a number of structures that are included in the Record of Protected Structures in Headford. The following table illustrates this record:

| Reg.No | Name | Townland | Description | Map |
|---|---|---|---|---|
| 46 | St.Mary's Roman Catholic Church | Headford | Gothic style cruciform Catholic Church with projecting sanctuary and gable belfry, c. 1853. Built of quarry faced random squared limestone with cut stone dressings and designed by Richard Pierce. The interior has an open truss roof, transept arcades, gallery and stained glass by Mayer. Set on a small site adjoining road. | 41 |
| 51 | St.John the Baptist Church, Church of Ireland | Deerpark(Clare By) | Ruins of First Fruits style, four-bay single cell church with tall crenulated tower which incorporates a mediaeval door case, headstone. Set within an enclosed churchyard, the wall of which also incorporates a medieval door case. | 42 |

**Table 2.2 Protected Structures**

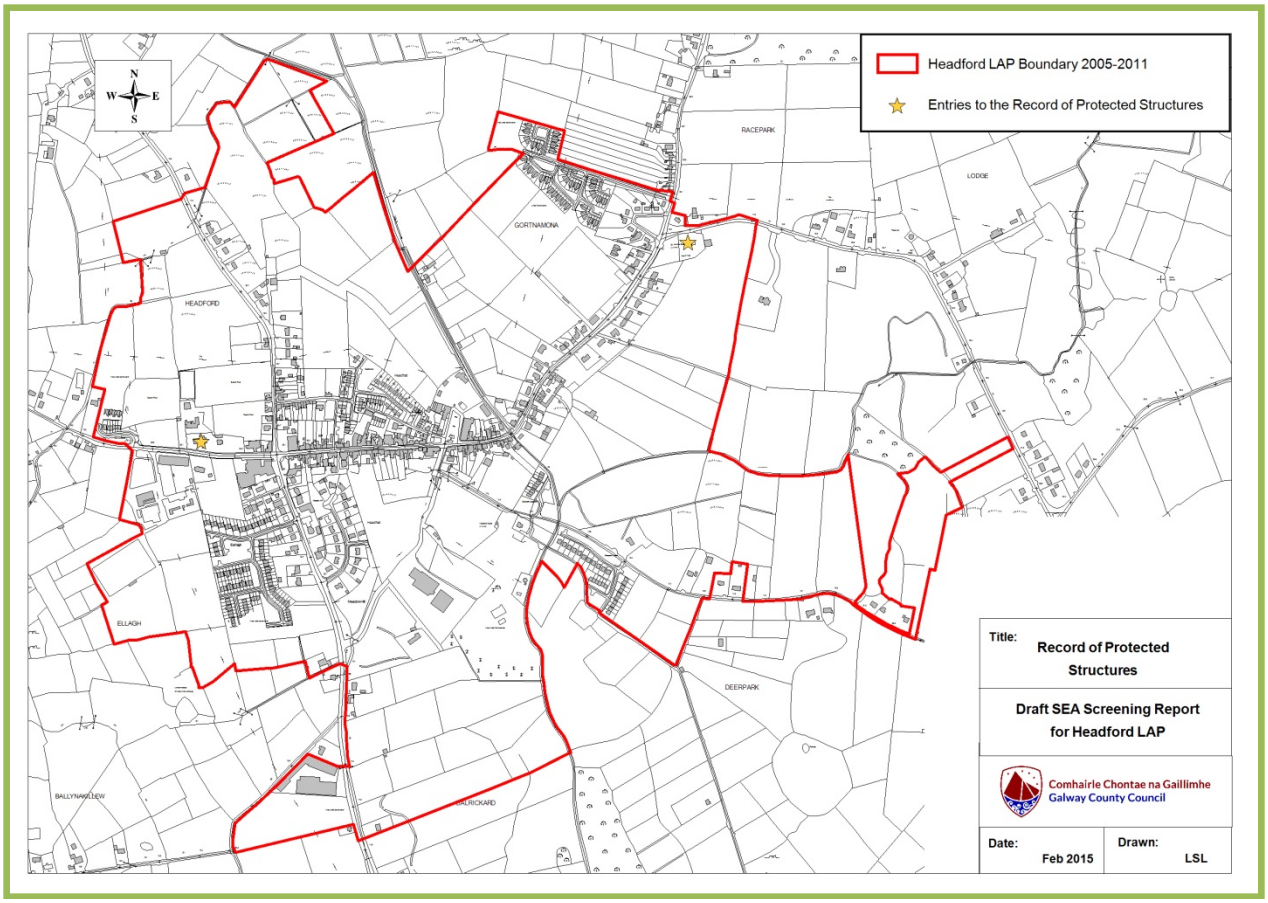



**Figure 2.10 Record of Protected Structure**

### 2.3.13.2 Architectural Conservation Area

The ACA boundary in Headford is derived from defining the core of the village with its special character of structures and streetscape. Headford's principal significance lies in its development as a predominately 19th Century commercial market village, laid out as a planned settlement in relation to the Landlord's mansion and demesne.

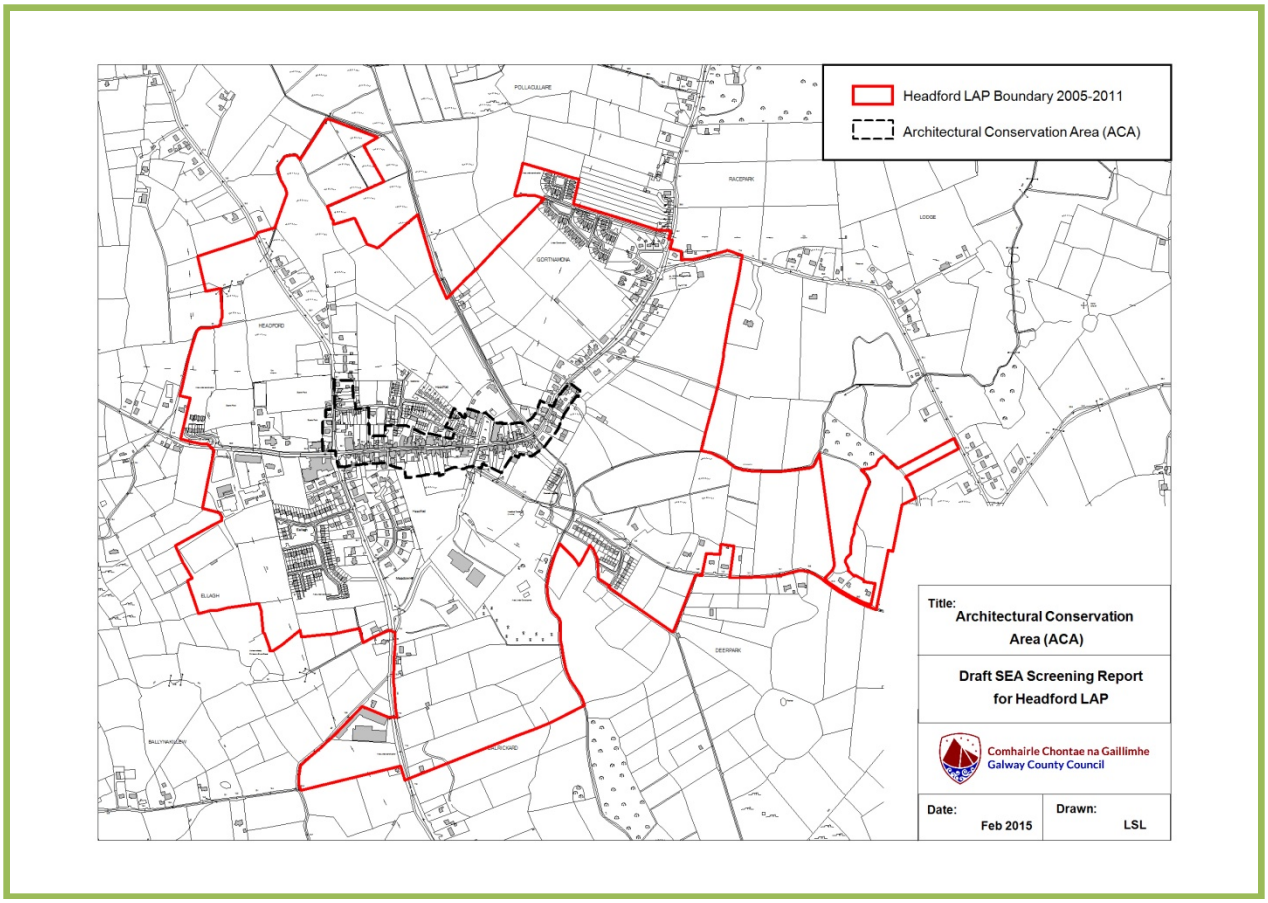



**Figure 2.11 Architectural Conservation Area**

### 2.3.13.3 Headford Demesne

This area is an example of a designed landscape within the plan area. Within this area there are a number of high stone walls that surround the gardens and demesne itself.

### 2.3.13.4 Plan Provision for Built & Cultural Heritage

The Headford LAP will include policies and objectives that will ensure that new developments will not unduly impact or affect the built heritage of the village. In addition all planning applications for new development, redevelopment, any ground works, refurbishment, restoration etc and within close proximity to the recorded monuments will have to take account of the archaeological heritage of the area and need for archaeological mitigation. Policy HC1 supports the protection and conservation of the architectural and archaeology heritage of the plan area, including the Protected Structures, Architectural Conservation Area, Recorded Monuments and Places and other important features of architectural or archaeological heritage. Objectives HC1–HC12 outlines the protection of the different facets of the built heritage of the plan area, including the Headford Demesne.

### 2.3.14 Natural Heritage and Biodiversity

The Headford LAP contains a section on natural heritage which outlines the natural heritage features which are relevant to Headford and the policies and objectives which seek to protect these.

The natural heritage in Headford includes a wide range of natural features that contribute to the environmental quality, ecological biodiversity, landscape character, visual amenity, recreational activities and public health of the village. While there are no European designated sites within the plan boundary, the River Corrib cSAC/SPA is within 5km of the existing southern plan boundary, and there are also a number of natural heritage sites within a 5km radius. As objectives and policies are being formulated for

the plan, Galway County Council must consider the EU Habitats and Birds Directives as well as the European Communities (Birds and Natural Habitats) Regulations 2011.

#### 2.3.14.1 Natura 2000 Sites

The Natura 2000 sites are made up of sites of European importance (Special Area of Conservation and Special Protection Areas). The potential impacts of the Headford LAP on Natura 2000 sites are currently being assessed as part of the Appropriate Assessment Screening.

There are no Natura 2000 sites within the plan boundary. The following table identifies the Natura 2000 sites outside the plan boundaries, a full synopsis of each site is attached at the end of this report in Appendix A.:

| Natura 2000 Sites Outside Plan Boundary |
|---|
| The River Corrib cSAC (000297) |
| The River Corrib SPA (004042) |
| Cloughmoyne SAC(000479) |
| Mocorha Lough SAC (00153) |
| Shrule Turlough (000525) |
| Clyard Kettle-holes (000480) |
| Ardkill Turlough (000461) |
| Skealoghan Turlough (000541) |
| Greaghans Turlough (000503) |
| Gortnandarragh Limestone Pavement (001271) |
| Ross Lake and Woods SAC (001312) |

**Table 2.3 Natura 2000 Sites outside Plan Boundary**

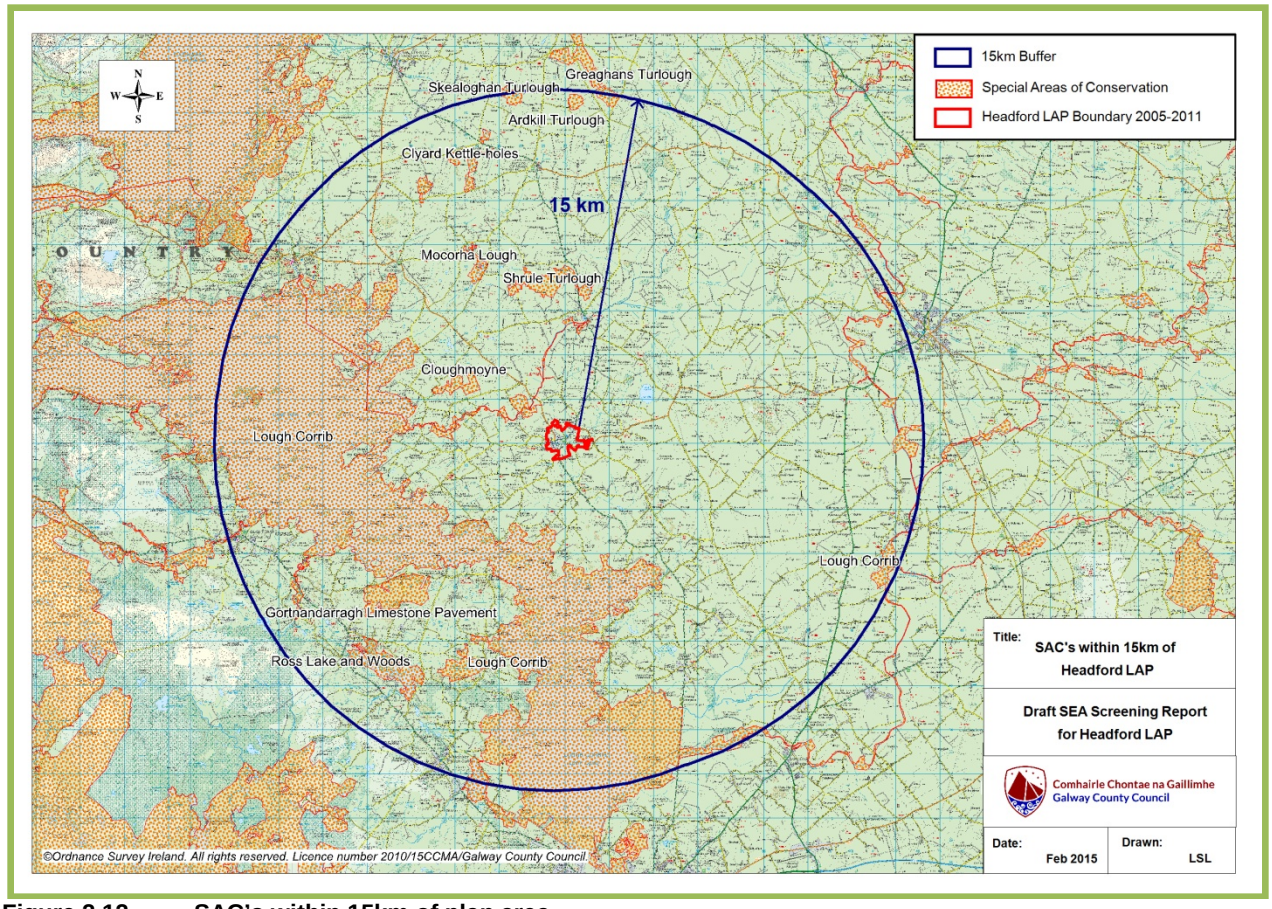



**Figure 2.12 SAC's within 15km of plan area**

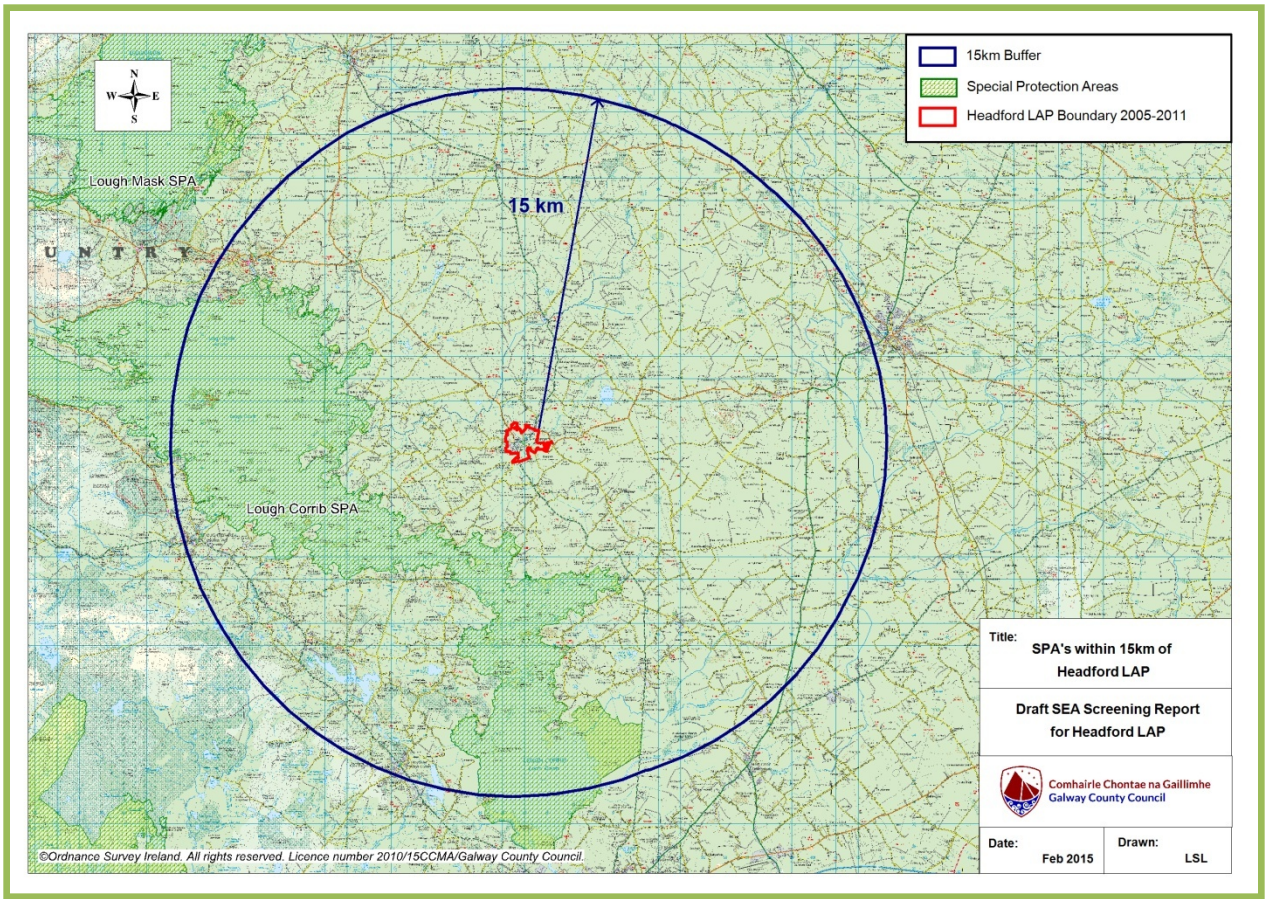



**Figure 2.13 SPA's within 15km of plan area**

### 2.13.4.2 Natural Heritage Areas

The basic designation for wildlife is the Natural Heritage Area (NHA). This is an area considered important for the habitats present, for geological or geomorphological features, or which holds species of plants and animals whose habitat needs protection. NHAs within the county represent a significant biodiversity resource and again, the range of habitats and species found in these sites vary considerably. There are no NHAs within the plan boundary; however the following proposed NHA's are located outside the plan boundary and a full synopsis of each site is attached at the end of this report in Appendix A:

| pNatural Heritage Areas Outside Plan Boundary |
|---|
| Rostaff Turlough (000385) |
| The River Corrib (00297) |
| Lough Hackett (001294) |
| Turloughcor (001788) |
| Turlough Monaghan (001322) |
| Turlough O'Gall (000331) |
| Knockmaa Hill (001288) |
| Killower Turlogh (000282) |
| Rathbaun Turlough (000215) |
| Gortnandarragh Limestone Pavement (001271) |
| Ross Lake and Woods (001312) |
| Drimcong Wood (001260) |
| Ballycuirke Lough (000228) |

**Table 2.4 Propose Natural Heritage Areas outside plan boundary**

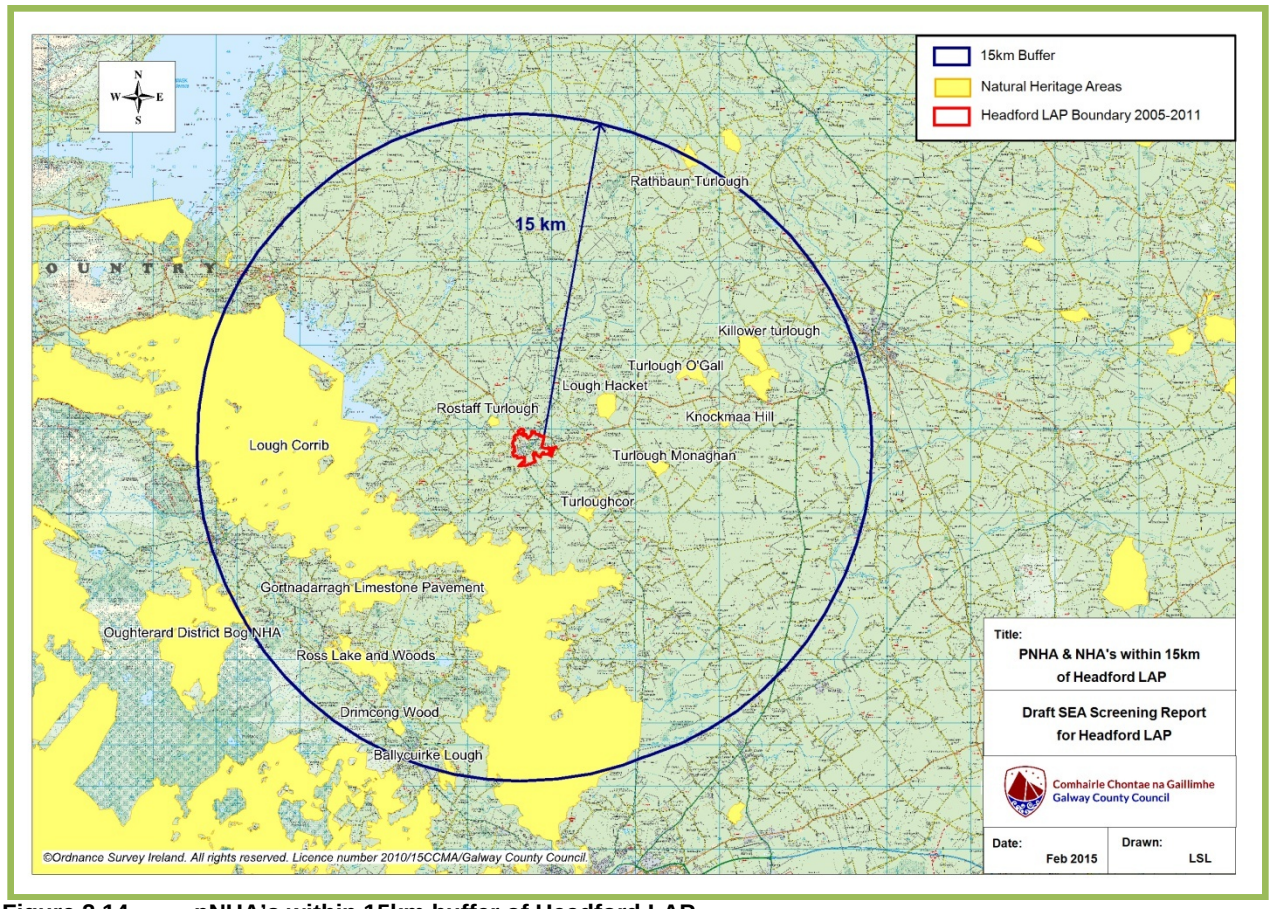



**Figure 2.14 pNHA's within 15km buffer of Headford LAP.**

### 2.13.4.3 Biodiversity

Biodiversity is the variety of all living things including plants, animals, microbes and fungi. Biodiversity also refers to the places where plants and animals live (habitats), the complex interactions among living things (the web-of life) and their relationship with the environment (ecology). While the plan area itself is small, and not especially rich in biodiversity, the surrounding region has some very important habitats and species of conservation interest. These must be considered in the context of the plan as there is the potential for developments or activities within the plan area to affect biodiversity in the wider area through direct or indirect habitat destruction or fragmentation or through disturbance to sensitive species.

The Headford landscape reflects the underlying limestone bedrock in the area with many miles of stone walls along field boundaries, productive agricultural land, turloughs and limestone pavement. The landscape is low-lying and gently undulating.

Much of the undeveloped land around the village is actively farmed and is a mixture of improved and semi-improved grasslands used for cattle and sheep grazing and pasture. Features of local biodiversity importance include hedgerows and grassy verges which support trees, shrubs and wildflowers such as Ash, Hawthorn, Bird Cherry, Devils Bit Scabious, Ladies Smock and Bush Vetch which provide food and shelter for a variety of invertebrates and importantly pollinating insects. These habitats are also important feeding and nesting sites for birds and small mammals including Bank Vole, Hedgehog, Stoat, Mice and Pygmy Shrew. Within the village of Headford about 40 species of birds are found, most of which are considered common and garden birds such, as the Robin, Blue Tit and Finches etc. Farmland and hedges may support larger mammals such as foxes and badgers which are likely to occur in the village or nearby.

Stone walls and old buildings can be important nesting and roosting sites as well as providing shelter for invertebrates, birds and small mammals. Of special interest is the Barn Owls nest at the site of the ruin of St John the Baptist Church. There are a number of mature Beech trees in the old demesne near the village, and bats have been observed foraging along the lane by the demesne walls (Pipestrelle), at the stream going into the waterworks and in front of the castle at Annaghkeane (Daubenton's) (K McAney, pers comm. 2014). Such features were noted in a study of the biodiversity of the Sandybanks Lane carried out by MSc Students from NUIG in 2013 and have been highlighted in the Demesne Golden Mile submitted by Headford in 2012.

Drainage ditches and streams may also be locally important for biodiversity supporting a range of plants and invertebrates as well as frogs and birds. The 2013 NUIG study recorded Fool's Water Cress, Bur Reed and Common Duckweed at Lowery's stream which flows along the Sandybanks Lane and into the Annacurta or Headford River. A study of the invertebrates in the stream found Flat Worms, Diving Beetles, Caddis Flies, Riffle Beetles and Freshwater Shrimp and assigned Q values indicated an overall good water quality.

The Annacurta river otherwise known as the Headford River, is joined by the Clooneen River, Lowrey's Stream (also referred to as the Annacutra or Headford Stream) and the O'Brien's Stream which flow South West towards Lough Corrib. The river enters the lake at Mountross. The catchment is primarily a spawning and nursery system for a diverse range of fish species. The fish population is mostly Brown Trout with small numbers of Salmon fry recorded in the lower section of the Clooneen River in 2011. Pike, Perch and Roach are present in the systems but not in abundance. The River/Brook Lamprey have also been recorded on the upper section of the Annacurta river (IFI, pers comm. 2014).

Otter, an Annex IV species (requiring strict protection wherever it occurs) is a qualifying interest for the Lough Corrib SAC which is linked to the village via the Headford River. Otter have been reported from within the Headford village which would indicate that they also are likely to be found in the Headford River.Due to the limestone bedrock, geology and climate, many of the biodiversity interests in the greater Headford area, are wetland habitats and their associated plant and animal species including rivers, lakes, turloughs and fens. Outside of the village but in the vicinity are some very important wetlands habitats for winter visiting wildfowl and other water birds. Turloughs are well represented in the area and many of them are designated as pNHAs or SACs for conservation. More information on each site is contained in the NPWS site synopses which are presented in Appendix A.

Lough Corrib is a designated SAC, SPA, NHA and Ramsar site for birds including Arctic Tern, Black-Headed Gull, Common Gull, Common Scoter, Common Tern, and Tufted Duck which are recorded at Greenfield (Inchiquin) and Headford, (N. Sharkey, pers comm, 2014). Approximately 50 species of birds have been recorded at Greenfields in total and similar numbers are known for Rostaff Turlough which is a designated NHA. Annex I bird species which occur there include the Golden Plover, Whooper Swan and Greenland White-Fronted Geese. Other visiting wildfowl include Teal, Lapwing, Mallard and Dunlin. Species which have been recorded breeding at the turlough include Ringed Plover, Snipe, Tufted Duck, Pochard, Grey Heron and Redshank.

The Black River runs north of Headford from Shrule and enters the Corrib at Greenfield. The lower reaches of the Black River are designated as part of the Corrib SAC. Four species of fish have been recorded (IFI 2009) including Salmon, Brown Trout, 3-Spined Stickleback and European Eel. The NPWS Lamprey survey of the Corrib catchment noted that much of the Black River was sub optimal habitat for lampreys though they were found in suitable parts of the river at two of the four sites sampled. There are 5 important salmonid streams on the Black River catchment in the Headford area. One each in Ballyfruit, Claren and Toorard and two in Ower. The Black River likely supports Otter and possibly important bird species such as Kingfisher.

There are few areas of woodland in the vicinity of Headford which support the Lesser Horseshoe Bat, an Annex II species for which the Lough Corrib and Ross Lake and Woods SACs are designated and therefore are not likely to occur within the village but have been reported from the area around Castlehackett. Red Squirrel has also been reported in that area from Knockmaa Nature Reserve. Areas

of limestone pavement are found at a number of sites in the countryside around Headford and the shores of Lough Corrib including Knockmaa and also Cloughmoyne SAC 5km North West of Headford which has good quality limestone pavement.

Due to the nature of the habitats and their dependant species in the Headford area the main sensitivities are developments or activities which would cause habitat destruction, degredation or fragmentation or otherwise cause disturbance to sensitive species. In particular any activities which would compromise surface or ground water quality have the potential to have far reaching impacts on wetland habitats and species around Headford. Development of undeveloped land has the potential to impact on air and water and habitat quality and consequently the associated species.
Potential impacts include:

- Habitat loss due to land take affecting grassland, hedges, verges, ditches, streams, bankside vegetation.
- Habitat fragmentation due to buildings or infrastructure forming barriers to dispersal for plants and animals; leading to smaller habitat patches with increased edge effects and reduced habitat quality.
- Habitat degradation from air or water pollution or invasive species.
- Disturbance to sensitive species due to human presence i.e. increased traffic, noise, light, predation by domestic pets or vermin which may affect breeding birds, territorial boundaries (e.g. badgers), foraging behaviour in bats, birds and invertebrates.

#### 2.13.4.4 Plan Provision for Natural Heritage and Biodiversity Sites

Planning Authorities are required to ensure that any development proposal which is likely to have a significant effect on a Special Area of Conservation, Special Protection Area, Natural Heritage Area or other designated areas, is authorised only to the extent that the planning authority is satisfied , it will not adversely affect the ecological integrity of the area. Such a proposal must be subject to either appropriate assessment screening in the case of European sites and/or environmental impact assessment screening in the case of national sites. These screenings will assess whether the plan or project could have a significant effect on the area. All aspects of the proposal, which could, themselves or in combination with other proposals, affect the areas conservation objectives, should be identified. In the case of Headford there are no designated sites within the plan boundary, however there are a number of designated sites within 15km of the LAP boundary. There are however a number of policies and objectives in the plan that will seek to protect designated sites and their qualifying interests and ecological integrity. They include specific reference to the Natura 2000 network, EU Habitats Directive (92/43/EEC), EU Birds Directive (2009/147/EC), the Planning and Development (Amendment) Act 2010, the European Communities (Birds and Natural Habitats) Regulations 2011(SI No.477 of 2011) (and any subsequent amendments or updated legislation).

Habitats and species that are listed in the annexes to and/or covered by the EU Habitats Directive (82/42/EEC, as amended) and Birds Directive (2009/147/EC), and species that are protected under the Wildlife Acts, 1976-2000 including ecological networks and corridors are also protected under the plan. In addition an ecological assessment will be required where a proposed development within the plan area is likely to give rise to significant effects on a Natural Heritage Area or a proposed Natural Heritage Area.

The plan recognises the intrinsic value of biodiversity and importance of maintaining healthy functioning habitats and species outside of protected areas. As outlined in the previous section, there are a number of undesignated sites which are of local importance for geology, flora and fauna in and around Headford. The plan contains a number of policies and objectives intended to minimise negative effects on natural heritage and biodiversity of activities or developments associated with the LAP. Specifically:

- Objective NH 5 supports the protection of biodiversity and ecological connectivity within the plan area. It is a primary objective that these natural features are retained and incorporated into new developments in order to avoid ecological fragmentation and maintain ecological corridors.
- Objectives FL 9, NH6, NH7, NH8, and DM Guideline WQ 1 outline measures and objectives to protect watercourses and wetland habitats in the plan area by preventing inappropriate development near watercourses, ensuring that pollution control measures are put in place for developments and by preventing damage to rivers, streams, springs and riparian habitats.

- Objectives are in place to protect trees (NH9), bats, otters and barn owls (NH2) within the plan area.
- Objective NH11 and DM Guidelines NH1 seek to prevent the spread of invasive alien species through biosecurity measures and appropriate landscaping plans.

# 3.0 Proposed Zonings within the Headford LAP

## 3.1 Introduction

The phasing of residential development is considered the most appropriate approach to the development of residential lands in the plan areas at this time. Residential lands have generally been phased in a sequential manner, with Phase 1 residential lands identified for short to medium term growth in suitable locations that are serviceable and accessible and which avoid significant environmental sensitivities. This includes new residential development to the west and south east of the village centre. The phasing as applied also allows for some flexibility, as detailed by the policies and objectives of the plan, which also adheres to the Core Strategy allocation for Headford under the County Development Plan.

From an examination of the undeveloped lands located within the identified flood risk areas (in particular Flood Zones A and B) these have been rezoned as Open Space/ Recreation & Amenity in accordance with *The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009* and the associated *Circular PL 2/2014* in order to avoid inappropriate development in high to moderate flood risk areas and also to address potential impacts of climate change. In order to provide a comparison with zonings in the current Plan, the draft zoning map is indicated below in Figure 3.1 and is also provided in **Appendix B** and the zoning map for the Headford 2005-2011 LAP is provided in **Appendix C .** The Draft Plan also includes policies and objectives to ensure that the sensitivities of the various environmental and flood risk areas are adequately addressed, protected and managed as appropriate, in the development management process.

Employment uses remain focused to the south of the plan area in close proximity to the existing mart area. The village centre area remains the primary target for the location of new retail development. The land use zoning matrix provides further guidance on appropriate uses throughout the plan area.
The area for each zoning category is given in Table 3.1 and it also outlines the amount of developed land, the amount of undeveloped land and the total area, provided for in each zoning category.

| Land Use Zone | Developed Land Area(ha) | Undeveloped Land Area(ha) | Total Area(ha) |
|---|---|---|---|
| R-Residential (Existing) | 19.41 | 0.83 | 20.24 |
| R-Residential(Phase 1) | / | 10.29 | 10.29 |
| R-Residential (Phase 2) | 0.14 | 25.02 | 25.16 |
| C1-Village Centre/Commercial | 8.63 | 4.29 | 12.92 |
| CL-Constrained Land Use | 1.59 | / | 1.59 |
| BE-Business and Enterprise | 1.78 | 6.82 | 8.60 |
| CF-Community Facilities | 9.66 | 3.19 | 12.85 |
| OS-Open Space/Recreation and Amenity | 5.00 | 18.36 | 23.36 |
| TI-Transport & Infrastructure | 9.26 | / | 9.26 |
| PU-Public Utilities | 1.88 | / | 1.88 |
| | | | |
| **Total Plan Area** | 57.35 | 68.80 | 126.15 |

**Table 3.1 Capacity of Zoned Lands with the Draft Headford Local Area Plan 2015-2021**

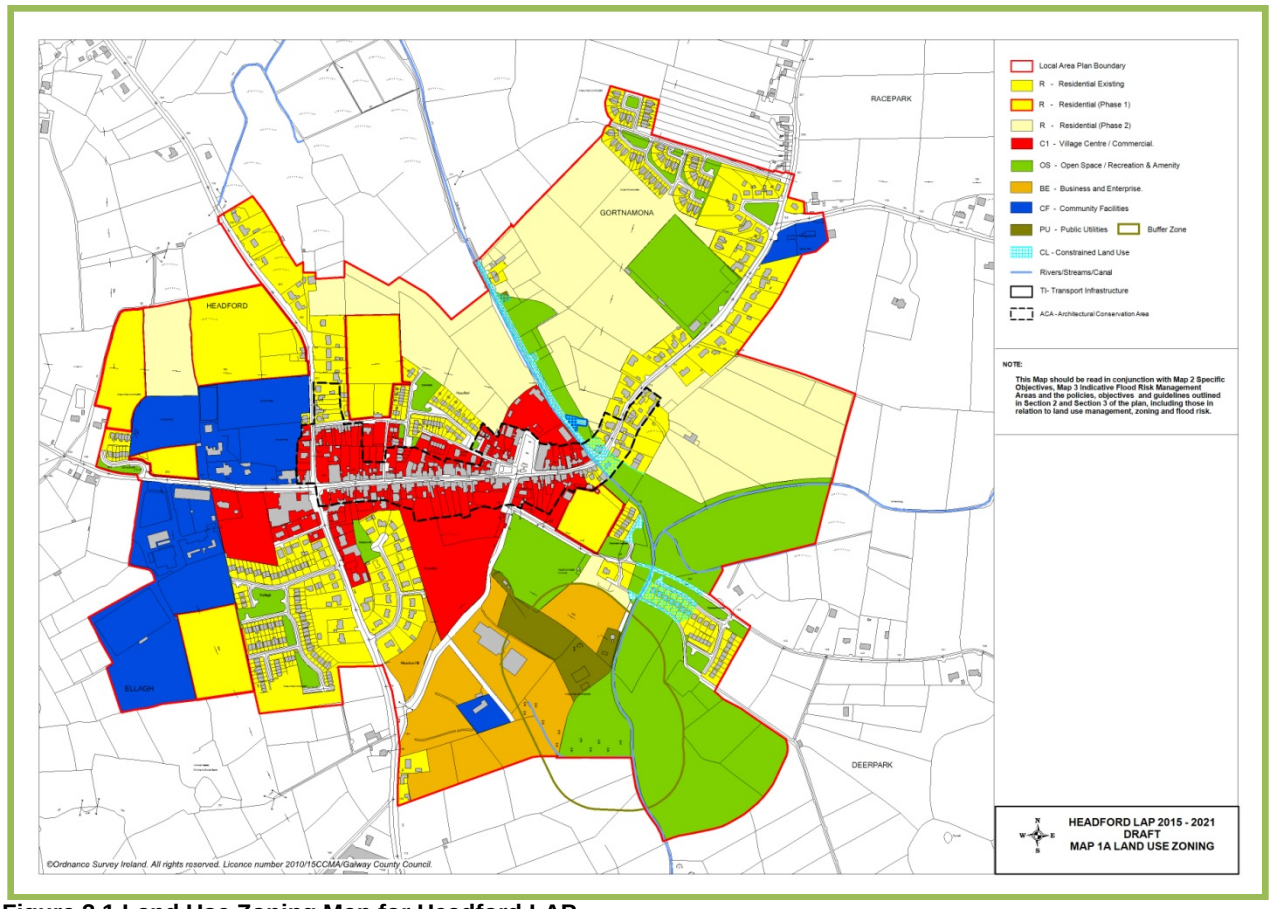



**Figure 3.1 Land Use Zoning Map for Headford LAP**

Without development policies and objectives within the draft plan which seek to protect the water quality, maintain semi-natural habitats and adhere to relevant EU guidelines the plan might have the potential to negatively affect local biodiversity including adjoining designated sites, habitats, species and migratory and foraging features in the landscape.

## 3.2 Habitats and Potential Environmental Receptors Associated with Each Land Use Zoning Type

The following section examines the habitats and potential environmental receptors associated with each land use zoning type which were identified at an earlier stage of the development of the draft plan. The reasoning as to why these zonings are not considered to pose a potential significant adverse impact is also given.

### 3.2.1 Residential Zonings Phase 1 and Phase 2

The Core Strategy in the Galway County Development Plan has identified a target population growth of up to 251 persons for Headford until 2021 which results in a requirement of 10.61ha of zoned land for residential purposes (based on 50% over zoning). Due to this reduction, the remaining lands are mainly located on improved agricultural grassland. The Residential zoned lands are largely clustered around the existing residential and commercial areas which reduces the urban sprawl and associated impact on habitats and species in the wider area. While there would be loss of grassland area to development and displacement of species which would use this habitat such as small birds, birds, hares, rabbits, foxes, kestrels etc, there is similar habitat in the adjoining lands outside of the LAP boundary so that overall this habitat loss is not considered greatly significant. In addition, objectives in the plan are in place to protect

ecological networks and maintain natural features including grassy verges, trees, hedges, waterways and stone walls which will mitigate against the effects of habitat fragmentation (Objectives UD4, NH5, NH8 and NH9).
Most of the residential zoned land is located away from riparian zones or streams/watercourses. However there are Phase 2 lands zoned on the western side of Lowrey's Stream and along part of the northern bank of the Annacurta/Headford River which have the potential to impact on the habitat quality and species at these sites. A number of objectives and guidelines are contained in the plan which will require the protection of these waterways and their riparian zones through the use of buffer zones, requirement for ecological assessments and the implementation of pollution control measures for developments (Objectives FL9, FL10 and NH8).

The primary residential zoned lands to the south of St. George's Square have been identified on the Specific Objectives Map as being an area with potential for bat activity and any proposed development application within this area will be accompanied by assessment of impacts on bats

### 3.2.2 Community Facilities

Community Facilities (CF) lands are largely concentrated to the west of the village centre of Headford, with a small parcel of Community Facilitiy lands located on the eastern aspect of the village. The lands to the west of the village centre are in close proximity to existing community facilities and within close proximity to the village centre and residential zonings. The location of these lands promotes a concept of consolidation and easy access to facilities for the people of Headford and adjoining areas. The undeveloped lands zoned for Community Facilities are not a relatively large area and are not adjacent to any rivers or streams. The habitat is mainly improved agricultural grassland of limited biodiversity value. The surrounding countryside is also largely classified as improved agricultural grassland. Objective (NH5) to maintain natural features to facilitate ecological connectivity are contained in the plan as well as objective (NH9) promoting planting of native trees and incorporating natural features into open spaces and green infrastructure in a way that supports biodiversity and natural heritage.

### 3.2.3 Business and Enterprise

The Business and Enterprise (BE) lands are located to the south of the plan area. The existing mart is located on these lands. In between two tracts of zoned Business and Enterprise lands the waste water treatment system is located on lands zoned Public Utilities. Tree lines and hedgerows are found along many of the field boundaries in this area. Objectives to maintain natural features, such as including grassy verges, trees, hedges, waterways and stone walls to facilitate ecological connectivity are contained in the plan, as well as objectives promoting planting of native trees and incorporating natural features into open spaces and green infrastructure, in a way that supports biodiversity and natural heritage. Objective NH9 requires that a survey of important tree stands be carried out as part of planning applications in the plan area. The application of a range of policies and objectives contained in the draft LAP including Objective DS3 (Natura 2000 Network and Habitats Directive Assessment) and DS4 (Development Management Standards and Guidelines) will assist in the ensuring these issues are considered should development applications present for these areas.

### 3.2.4 Village Centre/Commercial

The village centre zonings are concentrated in the existing centre of the village, located centrally along the north and south axis of the N64. The location of this zoning supports the sequential and phased development of the village centre. For much of this zoning, the lands are established urban areas with relatively low biodiversity value, the main undeveloped village centre lands to the south of the N64 are composed of improved agricultural grassland with some hedgerows and trees. The application of a range of policies and objectives contained in the draft LAP will ensure that existing biodiversity is protected and enhanced where possible, by maintaining natural features such as including grassy verges, trees, hedges, waterways and stone walls to facilitate ecological connectivity and by promoting planting of native trees and incorporating natural features into open spaces and green infrastructure in a way that supports biodiversity and natural heritage. Objective NH9 requires that a survey of important tree stands be carried out as part of development applications in the plan area. Objective DS3 (Natura 2000 Network and Habitats Directive Assessment) and DS4 (Development Management Standards and Guidelines) will

assist in the ensuring these issues are considered should development applications present for these areas.

### 3.2.5 Open Space/Recreation and Amenity

There is a total of 23.36ha designated Open Space/Recreation and Amenity (OS) in the draft LAP. Many of these areas are composed of small areas that have existing open green space associated with residential development. Other areas within the plan have been zoned due to being located in Flood Zone A or B.

The largest of these areas are concentrated to the south of the plan area. Impacts identified with such zonings include disturbance to species through increased access and accompanying noise or human presence. The OS zoning in the vicinity of the WWTP has been identified on the Specific Objectives Map as being an area with potential for bat activity and any proposed development applications within this area will be accompanied by an assessment of the impacts on bats. The Land Use Zoning Matrix has curtailed a range of potential uses for this zoning and a limited number of uses are open for consideration (none are permitted in principle). This effectively limits the potential impact of development in these zones, many of which are adjacent to waterways or in areas susceptible to flooding.

Objectives which seek to maintain open areas and green infrastructure are particularly relevant in these areas and biodiversity can be conserved and enhanced through measures such as promoting planting of native trees and incorporating natural features such as hedges, waterways and stone walls into open spaces and green infrastructure in a way that supports biodiversity and natural heritage.

The application of a range of policies and objectives contained in the draft LAP including Objective DS3 Natura 2000 network and Habitats Directive Assessment and Objective DS4: Development Management Standards and Guidelines amongst others, will assist in ensuring these issues are considered should development applications present for these areas.

### 3.2.6 Flood Risk:

The majority of areas identified as Flood Zones A or B under the SFRA for County Galway are zoned Open Space/Recreation and Amenity (OS) within the plan area. In addition there are also areas zoned as "Constrained Land Use", namely in the developed areas of the village centre, which have been identified as susceptible to flooding. **(See Figure 2.8)**. Limited uses are open for consideration on the open space/recreational and amenity zoning. Such developments will be assessed in accordance with *The Planning System and Flood Risk Management Guidelines (2009)* and the associated *Circular PL2/2014.*

# 4. Criteria for Determining the Likely Significance of Environmental Effects

The following assessment has been conducted in accordance with the Planning and Development Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). The screening of the proposed plan is undertaken using specified criteria for determining the likely significant environmental impacts of a plan as set out in Schedule 2A of the European Communities (Environmental Assessment of Certain Plans & Programmes) Regulations (S.I 435 of 2004).

| **The Characteristics of the plan having regard in particular to:** |
|---|
| **Criterion:** The degree to which the plan sets out a framework for project and activities either with regard to the location, nature, size and operating conditions or by allocating resources.<br><br>**Response:** The Headford LAP will be a strategic land use framework for the sustainable development of the village and its immediate environs. The focus of this local area plan will be on the consolidation of the village centre, creating a more attractive retail environment, facilitating the provision of social and community facilities, linking any new development to the village, appropriate residential densities, and location of open space, urban design, access roads and infrastructural requirements to facilitate development in a sustainable manner while protecting built and natural heritage. The Core Strategy indicates that Headford has been assigned a population growth target of 251 persons by 2021. As there will be a reduction of the land zoned residential and the primary aim of the plan is one of consolidation rather than expansion, it is considered that the LAP will have environmental implications but these are not likely to be significant in terms of the criteria set out on Schedule 2A of S.I No.435/2004(as amended). |
| **Criterion:** The degree to which the plan influences other plans including those in a hierarchy.<br><br>**Response:** The Headford LAP is subsidiary to the Galway County Development Plan. Section 19(2) of the Planning and Development Act (2000) (as amended) states that a Local Area Plan shall be consistent with the objectives of the development plan. The Local Area Plan by its nature will focus on Headford village only and the activities therein and will have negligible influence on other plans. |
| **Criterion:** The relevance of the plan for the integration of environmental considerations in particular with a view to promoting sustainable development.<br><br>**Response:**<br>The proposed LAP will provide for the consolidation of the existing village centre and limited sensitive development for the area to cater for the needs of the settlement's population and its wider role in serving the surrounding area, having regard to the need for sustainability, quality of life, existing population, social cohesion and conservation of the natural and built heritage. Through the integration of land use and transportation objectives, the LAP will promote sustainable transport methods in order to provide for alternatives to car based transport thus aiming to reduce carbon inefficient transport. The plan will, in accordance with the policies and objectives outlined in the County Development Plan, support the protection and enhancement of the natural and built heritage. Also in accordance with the Galway County Development Plan, the plan will include policies and objectives that provide for the protection of groundwater resources and the use of Sustainable Urban Drainage Systems (SUDS). |
| **The characteristics of the plan having regard in particular to:** |
| **Criterion:** Environmental problems relevant to the plan.<br><br>**Response:** The proposed Headford LAP is a plan for the sustainable development of Headford village. It is considered that the LAP contains policies and objectives that will mitigate against adverse impacts on the environment as a result of any new development in the plan area. All new development that will |

require planning permission will be assessed against these policies and objectives and any potential negative impacts of development on the environment will be mitigated or avoided through adherence to the plan. The potential environmental impacts within the plan area on groundwater/surface waters will be addressed by Objectives UI 1, UI2, UI3, UI4 and UI5 that ensures all new developments are required to connect into the public mains water supply and WWTP. Other environmental impacts will include impact on protected structures-within the plan aiming to protect and enhance protected structures. New developments will also have impacts on air quality however given the limited development expected in the plan area it is not considered that these impacts will be significant and the plan has included policies and objectives to mitigate against such impacts arising.

**Criterion:** The relevance of the plan for the implementation of European Union legislation on the environment(e.g. plans linked to waste management or water protection)

**Response:** The EU has a wide range of environmental legislation, dealing with such issues as tackling climate change, sustainable development, waste management, air pollution, water protection, nature and flooding, biodiversity, soil protection and noise pollution. Directives relating to the environment are specifically mentioned in the Headford LAP are:

- 
- EU Habitats Directive (92/43/EEC)
- EU Birds Directive (2009/147/EC)
- European Communities(Birds and Natural Habitats) Regulations2011 (SI No.477 of 2011)
- EU Water Framework Directive (2006/118/EC)
- European Communities (Water Policy) Regulations 2003 (SI No.722 of 2003)
- Nitrates Directive
- EIA Directive (85/337/EEC)
- European Communities (Assessment and Management of Flood Risks) Regulations 2010(SI 122/2010) any other relevant EU Directives/legislation
- Groundwater Directive (2006/118/EC);
- Floods Directive (2007/56/EC);
- And any other relevant EU Directives/legislation.

Any development proposed within the plan area will be required to comply with the above EU legislation and where required will be required to submit additional documentation as required by Galway County Council.

**Characteristics of the effects and of the area likely to be affected, having regard, in particular to:**

**Criterion:** The probability, duration frequency and reversibility of the effects.

**Response:** The uncontrolled development of land in the LAP area could potentially result in significant impacts on the environment (e.g. as a result of possible development on flood plains etc).

The Headford LAP provides significant measures to avoid adverse impacts arising from further development affecting floodplains. This will involve development in Flood Zones in the plan area not normally being permitted. However, some development may be suitable within flood zones and maybe permitted in accordance with *The Planning System and Flood Risk Management, Guidelines for Planning Authorities (DEHLG, 2009)* and the *Circular PL 2/2014*. Developments granted permission in areas close to flood plains will contain measures to ensure that the risks of flooding are minimised or eliminated. In addition, Appropriate Assessment Screening will be required for proposed developments within the LAP boundary, including for flood protection or alleviation works and will include stringent mitigation measures to ensure protection of the environment within the LAP area. It is therefore considered that there will be no significant effects from the implementation of the LAP.

It is considered that the probability of positive effects is quite high. Land use zoning which will be detailed

in the Headford LAP will have an overall positive impact on areas of ecological importance by confining future development with appropriately designated zones and where flood plains and areas of ecological importance are given further protection. In addition, policies within the plan, with respect to the *Galway County Development Plan*, will have a positive effect with regard to issues pertaining to sustainable development; with particular cognisance of the protection of floodplains and the provisions of the DoEHLG "*Guidelines on Sustainable Residential Development in Urban Areas*" (2009). It is expected that these positive effects will be long terms and irreversible, until such time that any new policies and/or objectives are identified in a revised LAP and/or CDP.

**Criterion:** The cumulative nature of the effects.

**Response:** The plan provides a framework for more sustainable development within the Headford LAP area and reduces the likelihood of cumulative adverse effects. Screening for Appropriate Assessment, carried out separate to this SEA Screening exercise will ensure that cumulative impacts on EU Natura 2000 sites are assessed.

No cumulative negative effects are anticipated within the land area or lifespan of the Headford LAP, given that the LAP will focus on the principles of sustainable development and consoldiation. It is considered that the cumulative effects on the environment will be positive overall; with subsequent and cumulative development within the Headford Local Area resulting in an improved physical, natural and aesthetic environment.

**Criterion:** The transboundary nature of the effects.

**Response:** It is considered that there will be no significant transboundary effects as a result of the orderly and planned growth of Headford LAP area

**Criterion:** The risks to human health or environment.

**Response:** The implementation of the Local Area Plan will not result in any risks to human health. Any future development in the area will conform to the LAP, of which the fundamental essence is to create a healthy environment in which people can live, work and spend leisure time.

**Criterion:** The magnitude and spatial effect of the effects.

**Response**: The plan boundary for the Headford LAP (2015-2021) has been reduced from that of the previous Headford LAP 2005-2011. The Core Strategy indicates that Headford has been assigned a population growth target of 251 persons by 2021 with a housing land requirement of 10.61ha (which includes the permitted 50% over provision) in order to accommodate residential development over the plan period. Under the previous Headford Local Area Plan 2005-2011, there was approximately 78.55ha of undeveloped zoned residential land within the plan boundary. This plan must therefore consider the most appropriate residential development options such as phasing, rezoning or dezoning in order not to exceed the maximum requirements of the 10.61ha from the Core Strategy and to ensure that suitable lands suitable lands are brought forward for development during the plan period.

**Criterion:** The value and vulnerability of the area likely to be affected due to:

a)Special natural characteristics or cultural heritage
b)Exceeded environmental standards or limit values
c)Intensive land-use

**Response:**

**(a) Special natural characteristics or cultural heritage**

The Headford LAP boundary does not contain any European designated sites. The surrounding area has a number of sites of local and national importance. The nearest designated sites are the River Corrib SAC and SPA and Rostaff Turlough. Lough Corrib is the largest lake in Ireland and of national importance for the range of habitats and species it supports. These include 14 habitats which are listed on Annex I of the E.U. Habitats Directive, six of which are priority habitats, and nine species which are listed on Annex II. The lake is also internationally important for birds. It holds nationally important numbers of Mute Swan and Pochard and nationally important numbers of Golden Plover, Shoveler, Coot and Tufted Duck. The lake is the most important site in Ireland for the latter two. Rostaff Turlough is about 2km NW of Headford and is a bird sanctuary supporting nationally important numbers of Shoveler as well as locally important and numbers of several species of wildfowl. Lough Hackett and Turloughcor NHAs within 5km of Headford are locally important small lakes with the latter supporting nationally important numbers of Galwall and Shoveler.

As wetlands, these habitats are vulnerable to a range of activities which may come about under the plan that could negatively impact on water or air quality or hydrological conditions. Reduced habitat quality or disturbance caused by human presence and activity could also be damaging to protected species of plants and animals.

A separate Appropriate Assessment Screening has been carried out for the Headford LAP in accordance with the requirements of Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC). The Appropriate Assessment Screening outlines the conservation interests of each Natura site in a 15km radius of the plan boundary and outlines the sensitivities and potential impact on each from the policies and objectives in the plan.

The Headford LAP includes specific measures which outline for Appropriate Assessment and Ecological Assessment (under Natural heritage, Biodiversity and Landscape Policies and Objectives) where it is considered that a development may have an impact on designated sites or protected species. This would apply specifically to any future developments within the LAP that might impact on the Lough Corrib designated site, species or on water quality. A number of other specific policies and objectives are included in the plan with the aim of protecting the qualifying interests of the nearby Lough Corrib cSAC/SPA in light of future development.

Policies and Objectives in the plan aim to protect and enhance natural heritage and biodiversity within and around the plan area by specifying that impacts to wildlife should be minimised through the life of the plan. The plan also highlights the protection of key ecological interests as outlined in Objectives HC9 & NH5. The preservation of trees, waterways, hedges and stone walls and other natural features are all important habitats and foraging areas which facilitate the movement of protected species. The Policies and Objectives contained in the plan reflect this concept. Maintaining and improving the status of water is a requirement of the plan, policies and objectives are included to protect against adverse impacts on surface water and groundwater quality in the area (WQ1 &WQ2.)

**Archaeological Heritage**

The Headford LAP contains a number of important archaeological sites as outlined in Section 3.8 of the plan. The LAP includes appropriate policies and objectives which ensure that any planning applications which have implications for archaeological heritage are subject to the correct assessment. It is not anticipated that the value and vulnerability of the special, natural characteristics or cultural heritage of Headford will be negatively affected through implementation of the plan, given their status and protection at both national level, in the GCDP and in the Headford LAP. The LAP will ensure that any development in the vicinity of these areas where adverse impacts on the natural or built heritage could occur are avoided or mitigated against using appropriate measures.

**Cultural Heritage**

The cultural heritage of an area is a general term that includes cultural services, such as public buildings (libraries and museums) which encompass a range of characteristics that define the village. There are a number of unique buildings within Headford that provides its unique heritage.

**(b). Exceeded environmental quality standards or limit values**
Environmental quality standards and limit values are set out through national and international policy, legislation and guidance to regulate activities which may be harmful to the environment. Activities which have the potential to affect air or water quality in particular, are crucial to the environment and human well-being. Increased residential, commercial and industrial activity due to the zoning and policies set out in the plan could result in increased emissions to air and will require increased resources such as water.

The Headford LAP sets out policies and objectives to comply with all relevant policy, legislation and guidance including those relevant to the protection of wildlife, habitats and birds, flood risk management, the Water Framework Directive, Groundwater Regulations, Environmental Impact Assessment, Sustainable Residential Development, Sustainable Transport, Climate Change, Air Quality Standards, Waste Management and Environmental Liability etc.

Objectives UI3 and UI4 relate to the provision of wastewater disposal within the plan area and stipulate that new developments will only be permitted where it can be clearly demonstrated that they can be serviced and that there is adequate capacity regarding same. The current wastewater treatment facility has been licensed by the EPA and has sufficient capacity to meet the requirements for the projected population growth and development over the lifetime of the plan. The plant is subject to continuous review by the EPA and will be upgraded as and when higher standards are adopted by the EPA.

The policies and objectives contained in the Headford LAP ensure that the impact of any proposed developments on existing habitats, species and the value of the existing landscape are kept to a minimum. Development proposals within the LAP boundary will be subject to assessment as part of a planning application and will also be required to demonstrate compliance with the relevant legislation and environmental quality, standards and limits.

**(c). Intensive Land Use**
The Headford LAP will not intensify land uses within the LAP area to a degree that would adversely impact upon the existing natural and built environment. As outlined above, 78.55 of undeveloped residential zoned land within the Headford LAP boundary will be required to be phased or rezoned or dezoned, as appropriate, leaving just 10.61ha of land within the plan zoned for residential use up to 2021.

Quality design standards and guidelines are provided in the LAP with appropriate policies and objectives which seek to reduce any potential negative impact of land use within the plan area.

**Criterion:** The effects on areas or landscapes which have a recognised national, European Union or International Protection status.

**Response:** The nearest area or landscape which has a protected status is Lough Corrib cSAC/SPA which is located approximately 3.5km downstream of the plan area. These designations are discussed under the previous criterion.

Under the landscape sensitivity rating in the County Development Plan, the plan area is located in the Northeast Galway (Tuam Environs) character area, which is classified as class 1 (low sensitivity). In addition there are a number of protected views over the entire village, to the south west towards the Corrib and to the south east over the remains of the Headford Castle. The policies and objectives in the LAP ensure the protection of the landscape within the plan area.

# 5. Result of Environmental Significance Screening

Taking into account the aforementioned criteria that the Headford LAP (2015-2015) is not likely to have significant effects on the environment. It is therefore considered that a full Strategic Environmental Assessment is not required in respect of the Headford LAP. Localised environmental effects as a result of any proposed development carried out on the land within the plan area can be dealt with through the assessment of individual planning applications.

# 6. References

Dr Kate McAney - Vincent Wildlife Trust, Headford. Consulted November 2014. (Daubentons is a species of bat)

Inland Fisheries Ireland - Consulted December 2014.

IFI 2009 - Central and Regional Fisheries Boards (2009) Sampling fish for the water framework Directive. Western River Basin District Rivers Report 2009

Niel Sharkey - BirdWatch Ireland, Headford. Consulted November 2014.

# Appendix A

# Site Synopses for Natura 2000, NHA and pNHA

## Site Name: Lough Corrib SAC

## Site Code: 000297

Lough Corrib is situated to the north of Galway city and is the second largest lake in Ireland, with an area of approximately 18,240 ha (the entire site is 20,556 ha). The lake can be divided into two parts: a relatively shallow basin, underlain by Carboniferous limestone, in the south, and a larger, deeper basin, underlain by more acidic granite, schists, shales and sandstones to the north. The surrounding lands to the south and east are mostly pastoral farmland, while bog and heath predominate to the west and north. A number of rivers are included within the cSAC as they are important for Atlantic Salmon. These rivers include the Clare, Grange, Abbert, Sinking, Dalgan and Black to the east, as well as the Cong, Bealanabrack, Failmore, Cornamona, Drimneen and Owenriff to the west. In addition to the rivers and lake basin, adjoining areas of conservation interest, including raised bog, woodland, grassland and limestone pavement, have been incorporated into the site.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[3110] Oligotrophic Waters containing very few minerals
[3140] Hard Water Lakes
[3260] Floating River Vegetation
[6210] Orchid-rich Calcareous Grassland*
[6410] *Molinia* Meadows
[7110] Raised Bog (Active)*
[7120] Degraded Raised Bog
[7150] Rhynchosporion Vegetation
[7210] *Cladium* Fens*
[7220] Petrifying Springs*
[7230] Alkaline Fens
[8240] Limestone Pavement*
[91A0] Old Oak Woodlands
[91D0] Bog Woodland*
[1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*)
[1092] White-clawed Crayfish (*Austropotamobius pallipes*)
[1095] Sea Lamprey (*Petromyzon marinus*)
[1096] Brook Lamprey (*Lampetra planeri*)

[1106] Atlantic Salmon (*Salmo salar*)
[1303] Lesser Horseshoe Bat (*Rhinolophus hipposideros*)
[1355] Otter (*Lutra lutra*)
[1393] Slender Green Feather-moss (*Drepanocladus vernicosus*)
[1833] Slender Naiad (*Najas flexilis*)

The shallow, lime-rich waters of the southern basin of Lough Corrib support one of the most extensive beds of stoneworts (Charophytes) in Ireland, with species such as *Chara aspera*, *C. hispida*, *C. delicatula*, *C. contraria* and *C. desmacantha* mixed with submerged pondweeds (*Potamogeton perfoliatus*, *P. gramineus* and *P. lucens*), Shoreweed (*Littorella uniflora*) and Water Lobelia (*Lobelia dortmanna*). These *Chara* beds are an important source of food for waterfowl. In contrast, the northern basin contains more oligotrophic and acidic waters, without *Chara* species, but with Shoreweed, Water Lobelia, Pipewort (*Eriocaulon aquaticum*), Quillwort (*Isoetes lacustris*), Alternate Water-milfoil (*Myriophyllum alternifolium*) and Slender Naiad (*Najas flexilis*). The last-named is listed under the Flora (Protection) Order, 1999, and is an Annex II species under the E.U. Habitats Directive.

Large areas of reedswamp vegetation, dominated by varying mixtures of Common Reed (*Phragmites australis*) and Common Club-rush (*Scirpus lacustris*), occur around the margins of the lake. Reedswamp usually grades into species-rich marsh vegetation characterised by Slender Sedge (*Carex lasiocarpa*), Water Mint (*Mentha aquatica*), Water Horsetail (*Equisetum fluviatile*) and Bogbean (*Menyanthes trifoliata*). Of particular note are the extensive beds of Great Fen-sedge (*Cladium mariscus*) that have developed over the marly peat deposits in sheltered bays, particularly in the south-east corner of the lake. Alkaline fen vegetation is more widespread around the lake margins and includes, amongst the typically diverse range of plants, the Slender Cottongrass (*Eriophorum gracile*), a species protected under the Flora (Protection) Order, 1999. Wet meadows dominated by Purple Moor-grass (*Molinia caerulea*) occur in seasonally flooded areas close to the lake shore. These support species such as Sharp-flowered Rush (*Juncus acutiflorus*), Jointed Rush (*J. articulatus*), Carnation Sedge (*Carex panicea*), Devil's-bit Scabious (*Succisa pratensis*), Creeping Bent (*Agrostis stolonifera*) and Tormentil (*Potentilla erecta*), amongst others.

This large site contains four discrete raised bog areas and is selected for active raised bog, degraded raised bog, Rhynchosporion and bog woodland. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species, Bog Asphodel (*Narthecium ossifragum*), sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*) and Carnation Sedge.

At Addergoole, on the eastern shores of Lough Corrib, there is an important area of western raised bog. This bog area is one of the most westerly, relatively intact raised bogs in the country. There are also other substantial areas of raised bog along various tributaries of the Corrib in east Co. Galway, namely Slieve Bog, Lough Tee Bog and Killaclogher bog. The active parts of these bogs mostly correspond to the wettest areas, where there are well-developed surface features with hummocks, lawns and pools. It is in such areas that Rhynchosporion vegetation is best represented. The dominant species is the aquatic bog moss *Sphagnum cuspidatum,* which is usually accompanied by Bogbean*,* White Beak-sedge*,* Bog Asphodel*,* Common Cottongrass (*Eriophorum angustifolium*), Bog Sedge (*Carex limosa*) and Great Sundew (*Drosera anglica*). Brown Beak-sedge, a locally rare plant of wet bog pools, has been recorded from a number of the bog areas within the site. At Addergoole a substantial bog lake or soak occurs and this is infilling with large rafts of Rhynchosporion vegetation at present. This area is associated with an important area of wet bog woodland dominated by Downy Birch (*Betula pubescens*).

The largest part of the uncut high bog comprises degraded raised bog. Degraded bog is dominated by a raised bog flora which tends to be rather species-poor because of disturbance and/or drying-out. The most conspicuous vascular plant species are usually Carnation Sedge, Heather (*Calluna vulgaris*), Cottongrasses*,* Cross-leaved Heath (*Erica tetralix*), Bog Asphodel and Deergrass. Bog-rosemary (*Andromeda polifolia*) and Cranberry (*Vaccinium oxycoccos*), two species indicative of raised bog habitat, are frequent on both degraded and active areas of raised bog. *Sphagnum* cover is generally low within degraded areas due to a combination of drying-out and frequent burning.

Limestone pavement occurs along much of the shoreline in the lower Corrib basin, and supports a rich and diverse flora, including Herb-Robert (*Geranium robertianum*), Bloody Crane's-bill (*G. sanguineum*), Carline Thistle (*Carlina vulgaris*), Spring Gentian (*Gentiana verna*), Wild Thyme (*Thymus praecox*), Rustyback (*Ceterach officinarum*), Wood Sage (*Teucrium scorodonia*), Slender St. John's-wort (*Hypericum pulchrum*), Quaking-grass (*Briza media*) and Blue Moor-grass (*Sesleria albicans*). Areas of Hazel (*Corylus avellana*) scrub occur in association with exposed limestone pavement and these include species such as Hawthorn (*Crataegus monogyna*), Buckthorn (*Rhamnus catharticus*), Spindle (*Euonymus europaeus*), with occasional Juniper (*Juniperus communis*). Three Red Data Book species are also found in association with limestone scrub - Alder Buckthorn (*Frangula alnus*), Shrubby Cinquefoil (*Potentilla fruticosa*) and Wood Bitter-vetch (*Vicia orobus*), the latter is also protected under the Flora (Protection) Order, 1999.

Open areas of orchid-rich calcareous grassland are also found in association with the limestone exposures. These can support a typically rich vegetation, including many orchids such as Pyramidal Orchid (*Anacamptis pyramidalis*), Common Spotted-orchid (*Dactylorhiza fuchsii*), Early-purple Orchid (*Orchis mascula*), Frog Orchid (*Coeloglossum viride*), Fragrant Orchid (*Gymnadenia conopsea*), Marsh Helleborine (*Epipactis palustris*), Greater Butterfly-orchid (*Platanthera chlorantha*) and Irish Lady's-tresses(*Spiranthes romanzoffiana*). The latter is protected under the Flora (Protection) Order, 1999.

The Hill of Doon, located in the north-western corner of the lake, is a fine example of a Sessile Oak (*Quercus petraea*) woodland. The understorey is dominated by Sessile Oak, Holly (*Ilex aquifolium*) and occasional Juniper. There are occasional Yew (*Taxus baccata*) and Ash (*Fraxinus excelsior*), and a well developed ground layer dominated by Bilberry (*Vaccinium myrtillus*), Hard Fern (*Blechnum spicant*) and Wood Rush (*Luzula sylvatica*). Woodland also occurs on some of the islands in the lake.

A number of the rivers in the site support submerged and floating vegetation of the Ranunculion fluitantis and Callitricho-Batrachion, including mosses. For example, in the River Corrib species such as Shining Pondweed (*Potamogeton lucens*), Perfoliate Pondweed (*Potamogeton perfoliatus*), Small Pondweed (*P. berchtoldii*), Yellow Water-lily (*Nuphar lutea*), White Water-lily (*Nymphaea alba*) and stoneworts (*Chara* spp.) occur.

The rare and Annex II-listed Slender Green Feather-moss (*Drepanocladus vernicosus*) is found at the fen at Gortachalla, north-east of Moycullen. Here it is widespread around the margins, and this constitutes a large and significant population in the national context. A very large population of another rare moss, *Pseudocalliergon trifarium,* is also found in this area.

The lake is rated as an internationally important site for waterfowl. Counts from 1984 to 1987 revealed a mean annual peak total of 19,994 birds. In the past a maximum peak of 38,281 birds was recorded. The lake supports internationally important numbers of Pochard (average peak 8,600) and nationally important numbers of the following species: Coot (average peak 6,756), Mute Swan (average peak 176), Tufted Duck (average peak 1,317), Cormorant (average peak 110) and Greenland White-fronted Goose (average peak 83). The latter species is listed on Annex I of the E.U. Birds Directive. The Coot population

is the largest in the country and populations of Tufted Duck and Pochard are second only to Lough Neagh. Breeding pairs of Common Scoter on the lake number 30-41 (1995 data), as well as breeding populations of Arctic Tern and Common Tern. Other bird species of note recorded from or close to the lake recently include Hen Harrier, Whooper Swan, Golden Plover and Kingfisher. All of these species are listed on Annex I of the E.U. Birds Directive.

Otter and Irish Hare have been recorded regularly within this site. Both of these species are listed in the Red Data Book and are legally protected by the Wildlife Act, 1976. Otter is also listed on Annex II of the E.U. Habitats Directive. Lough Corrib is considered one of the best sites in the country for Otter, due to the sheer size of the lake and associated rivers and streams, and also the generally high quality of the habitats. Atlantic Salmon (*Salmo salar*) use the lake and rivers as spawning grounds. Although this species is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the E.U. Habitats Directive. Lough Corrib is also a well known fishing lake with a very good Trout (*Salmo trutta*) fishery. The lake has a population of Sea Lamprey (*Petromyzon marinus*), a scarce, though probably under-recorded species listed on Annex II of the E.U. Habitats Directive. Brook Lamprey (*Lampetra planeri*), also listed on Annex II, are also known from a number of areas within the site.

A population of Freshwater Pearl Mussel (*Margaritifera margaritifera*), a species listed on Annex II of the E.U. Habitats Directive, occurs within the site. White-clawed Crayfish (*Austropotamobius pallipes*), also listed on Annex II, is well distributed throughout Lough Corrib and its in-flowing rivers over limestone. A summer roost of Lesser Horseshoe Bat, another Annex II species, occurs within the site - approximately 100 animals were recorded here in 1999.

The main threats to the quality of this site are from water polluting activities resulting from intensification of agricultural activities on the eastern side of the lake, uncontrolled discharge of sewage which is causing localised eutrophication of the lake, and housing and boating development, which is causing the loss of native lakeshore vegetation. The raised bog habitats are susceptible to further degradation and drying out due to drainage and peat cutting and, on occasions, burning. Peat cutting threatens Addergoole Bog and already a substantial area of it has been cut away. Fishing and shooting occur in and around the lake. Introduction of exotic crayfish species or the crayfish fungal plague (*Aphanomyces astaci*) could have a serious impact on the native crayfish population. The bat roost is susceptible to disturbance or development.

Despite these ongoing issues, however, Lough Corrib is one the best examples of a large lacustrine catchment system in Ireland, with a range of habitats and species still well represented. These include 14 habitats which are listed on Annex I of the E.U. Habitats Directive, six of which are priority habitats, and nine species which are listed on Annex II. The lake is also internationally important for birds and is designated as a Special Protection Area.

## SITE NAME: LOUGH CORRIB SPA

## SITE CODE: 004042

Lough Corrib is situated to the north of Galway City and is the largest lake in the country. The lake can be divided into two parts: a relatively shallow basin, underlain by Carboniferous limestone, in the south and a larger, deeper basin, underlain by more acidic granite, schists, shales and sandstones, to the north. The main inflowing rivers are the Black, Clare, Dooghta, Cregg, Owenriff and the channel from Lough Mask.

The main outflowing river is the Corrib, which reaches the sea at Galway City. Over the 1994-97 period Lough Corrib was classified as a mesotrophic system, a change from its oligo/mesotrophic status in the 1991-94 period. It retained its mesotrophic status for the 1998-2000 period, with a reduction in phosphorous and planktonic algal growth noted. Overall, the water quality of the Corrib is considered to be satisfactory. The shallow, lime-rich waters of the southern basin of the lake support one of the most extensive beds of Stoneworts (Charophytes) in Ireland, with species such as *Chara aspera*, *C. hispida*, *C. delicatula*, *C. contraria* and *C. desmacantha* mixed with submerged Pondweeds (*Potamogeton perfoliatus*, *P. gramineus* and *P. lucens*), Shoreweed (*Littorella uniflora*) and Water Lobelia (*Lobelia dortmanna*). These *Chara* beds are a very important source of food for waterfowl. In contrast, the northern basin contains more oligotrophic and acidic waters, largely lacking Charophyte species, but with such species as Shoreweed, Water Lobelia, Pipewort (*Eriocaulon aquaticum*) and Quillwort (*Isoetes lacustris*). Large areas of reedswamp vegetation, dominated by varying mixtures of Common Reed (*Phragmites australis*) and Common Club-rush (*Scirpus lacustris*), occur around the margins of the lake.

Reedswamp usually grades into species-rich marsh vegetation. Of particular note are the extensive beds of Great Fen-sedge (*Cladium mariscus*) that have developed over the marly peat deposits in sheltered bays. Limestone pavement occurs along much of the shoreline in the lower Corrib basin and supports a rich and diverse flora. The lake has numerous islands, from rocky islets to larger islands with grassland or woodland. The surrounding lands are mostly pastoral farmland, to the south and east, and bog and heath, to the west and north. Lough Corrib is of international importance for wintering Pochard (10,182) – all figures are average peaks for the 5 seasons 1995/96-1999/00. It is one of the top five sites in the country for wintering waterfowl and also qualifies for international importance because it regularly supports well in excess of 20,000 waterfowl. It is the most important site in the country for Pochard, Tufted Duck (5,521) and Coot (14,473), supporting 21%, 46% and 13% of the respective national totals. It also has nationally important populations of wintering Mute Swan (182), Gadwall (48), Shoveler (90), Golden Plover (1,727) and Lapwing (2,424). The lake is a traditional site for Greenland White-fronted Goose (62). Relatively small numbers of Whooper Swan (35) occur, along with Wigeon (528), Teal (77), Mallard (155), Goldeneye (74), Curlew (114) and Cormorant (36). Lough Corrib is a traditional breeding site for gulls and terns, with various islands being used for nesting each year. There are important colonies of Common Tern (37 pairs in 1995) and Arctic Terns (60 pairs in 1995), both populations being of national importance. The site supports substantial colonies of Black-headed Gull (856 individuals in 1999) and Common Gull (181 pairs in 1999), these representing 11% and 17% of the respective national totals. Lesser Black-backed Gull (51 individuals in 1999) and Great Black-backed Gull (16 individuals in 1999) also breed, with a few pairs of Herring Gull. Considerably higher numbers of breeding gulls occurred in the recent past, as shown by surveys in 1977 and 1993; the reasons for the continued declines are, however, not fully known. Whilst only colonised in the 1970/80s by nesting Common Scoter, Lough Corrib now supports approximately half of the national population of this rare duck, a Red Data Book species. The population has been stable since the mid-1990s, with 36 pairs recorded in the most recent survey in 1999. Lough Corrib supports a range of species listed on Annex II of the E.U. Habitats Directive, including Otter, Salmon and Slender Naiad (*Najas flexilis*). The lake is an internationally renowned salmonid fishery. Any deterioration in water quality of the lake would be of concern for the wintering birds and perhaps the breeding Common Scoter, though the condition of the lake has been satisfactory in recent years. The reasons for the long-term declines in the breeding gull populations since the 1970s are not known and require investigation. Fishing and shooting occur in and around the lake though is it not considered that these are significant threats to the birds. Lough Corrib is one of the top ornithological sites in the country, and easily qualifies for international importance on the basis of numbers of wintering birds using it. It is also of international importance for its population of Pochard. There are a further seven species of wintering waterfowl that have populations of national importance. Its populations of breeding gulls and terns are also notable, with nationally important numbers of Common Tern, Arctic Tern, Common Gull and Black-headed Gull. The site is now the most important in the country for nesting Common Scoter. It is of note that several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Greenland White-fronted Goose, Golden Plover, Common Tern and Arctic Tern. The site has been relatively well monitored for birds in recent years. Research is required into the reasons for the decline of the breeding gull populations.

## Site Name: Cloughmoyne SAC

## Site Code: 000479

Cloughmoyne is located approximately 5 km north-west of Headford in Co. Mayo. The site lies on the south-west slope of a low limestone ridge and spreads southwards to include a fen and lake. The site is situated in the townland of Ballisnahyny (just west of the Cloughmoyne townland). The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[8240] Limestone Pavement*

The site includes areas of species-rich dry grassland, where the following species are common: Blue Moor-grass (*Sesleria albicans*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Red Fescue (*Festuca rubra*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Mouse-ear Hawkweed (*Hieracium pilosella*), Kidney Vetch (*Anthyllis vulneraria*), White Clover (*Trifolium repens*) and Red Clover (*Trifolium pratense*). Also found are Bloody Cranesbill (*Geranium sanguineum*), Columbine (*Aquilegia vulgaris*), Juniper (*Juniperus communis*), Madder (*Rubia peregrina*), the scarce Dense-flowered Orchid (*Neotinea maculata*), Spring Gentian (*Gentiana verna*) and the rare and legally protected (Flora (Protection) Order, 1999) species, Wood Bitter-vetch (*Vicia orobus*).

The site also includes some species-poor fen vegetation, dominated by Black Bog-rush (*Schoenus nigricans*), with Common Reed (*Phragmites australis*) and Great Fen-sedge (*Cladium mariscus*) occurring occasionally. Other species found in this fen vegetation include Wild Angelica (*Angelica sylvestris*), Cuckooflower (*Cardamine pratensis*), Devil's-bit Scabious (*Succisa pratensis*), Marsh Pennywort (*Hydrocotyle vulgaris*), Bogbean (*Menyanthes trifoliata*), Long-stalked Yellow-sedge (*Carex lepidocarpa*), Common Cottongrass (*Eriophorum angustifolium*), Common Butterwort (*Pinguicula vulgaris*) and the bryophytes *Scorpidium scorpioides* and *Campylium stellatum*.

The site also includes some 40 ha of good quality limestone pavement of the 'shattered' form. Limestone pavement is an important habitat that is listed, with priority status, on Annex I of the E.U. Habitats Directive. At this site the limestone pavement supports a typical flora and is associated with areas of species-rich calcareous grassland and heath. Of particular note is the presence of the very rare and legally protected (Flora (Protection) Order, 1999) species Limestone Fern (*Gymnocarpium robertianum*).

The Common Frog, a species listed in the Red Data Book, breeds within the site. Agricultural activities, in particular reclamation of limestone pavement and fertilization, within and adjacent to the site pose the main threats to the survival of the site and its rare species. Cloughmoyne is of considerable conservation significance for its good quality limestone pavement, a rare and threatened habitat, and for the presence of two rare plant species.

## Site Name: Mocorha Lough SAC

## Site Code: 001536

Mocorha Lough comprises a shallow wetland complex situated 8 km east of Cong, in Co. Mayo. It lies in a linear depression in the Carboniferous limestone running north-eastwards from Lough Corrib. The predominant habitat on the site is fen, but areas of dry calcareous grassland, wet grassland and Juniper (*Juniperus communis*) scrub also occur. Very little open water remains at the site.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[7210] *Cladium* Fens*

Mocorha Lough includes a large area of fen vegetation that is dominated by Great Fen-sedge (*Cladium mariscus*), accompanied by some Common Reed (*Phragmites australis*) and Common Club-rush (*Scirpus lacustris*). Areas of fen dominated by Black Bog-rush (*Schoenus nigricans*) are scattered through the site, but are particularly well-developed near the southern and northern margins of the site. The scarce moss *Drepanocladus cossonii* has been recorded from *Schoenus* fen in the north of the site.

Calcareous heath/grassland vegetation occurs on high ground surrounding the centre of the site. This vegetation is notable for the presence of Juniper, which occurs here in abundance, along with such species as Black Bog-rush, Bell Heather (*Erica cinerea*), Heather (*Calluna vulgaris*), Crested Dog's-tail (*Cynosurus cristatus*), Common Knapweed (*Centaurea nigra*), Blue Moor-grass (*Sesleria albicans*), Wild

Thyme (*Thymus praecox*), Devil's-bit Scabious (*Succisa pratensis*), Oxeye Daisy (*Leucanthemum vulgare*) and Bracken (*Pteridium aquilinum*), amongst others. Areas of heathy calcareous grassland with Juniper are also found on the western margin of the site.
The site supports locally important numbers of wetland birds, especially Snipe and Mallard.
Mocorha Lough is of considerable conservation significance as it supports one of the largest stands of Great Fen-sedge in the west of Ireland. This habitat is listed on Annex I of the E.U. Habitats Directive with priority status. The presence of areas of heathy calcareous grassland, Juniper scrub and *Schoenus* fen adds considerably to the importance of the site.

## Site Name: Shrule Turlough SAC

## Site Code: 000525

Shrule Turlough is orientated east-west in an extensive natural basin surrounded by gently undulating farmland, with slightly higher scrub-covered land to the north. Around the edges of the turlough there are scattered boulders and some limestone outcrops. It is found just north-west of the village of Shrule in Co. Mayo.
The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[3180] Turloughs*
This is a large, highly oligotrophic turlough, with thick marl and peat deposits. There is no above-ground outflow from the turlough. Drainage attempts have been made by enlarging the swallow holes, but the turlough still floods regularly and it seems to show little modification due to the drainage efforts. Peat cutting no longer occurs but cattle graze on reclaimed peat margins and around the swallow holes.
Shrule Turlough has a high level of physical and vegetation diversity, and supports the second largest number of plant communities of any turlough surveyed (18 in all). Fen vegetation is especially well-developed, with the largest extent of both Great Fen-sedge (*Cladium mariscus*) fen and Black Bog-rush (*Schoenus nigricans*) fen found in any turlough. The site also supports important stands of tall sedge and yellow sedge communities. The site supports a range of plants that are quite rare in turloughs, among them Whorled Water-milfoil (*Myriophyllum verticillatum*), Least Bur-reed (*Sparganium minimum*), Greater Bladderwort (*Utricularia vulgaris*) and Creeping Yellow-Cress (*Rorippa sylvestris*).
Lough Lee, located at the southern end of the site, is surrounded by wet grassland and, at its northern side, by a mosaic of species-rich wet and dry grassland with outcropping limestone. The lough itself supports beds of Common Reed (*Phragmites australis*).
Shrule turlough has a small catchment area and seems to be little modified by human activities. The oligotrophic and peaty nature of the site makes it unusual in the general range of turloughs and gives it a very significant ecological value. In addition, the site is large and seemingly largely uninfluenced by the surrounding land uses. Its high vegetation diversity and the presence of a number of species generally rare in turloughs is of further interest.

## Site Name: Clyard Kettle-holes SAC

## Site Code: 000480

This site comprises a number of small lakes and turloughs developed between stony hillocks in the jumbled topography of the moraines west of Kilmaine, Co. Mayo. Some of these lakes are connected with each other but others appear to fill and empty by subterranean means. As is often the case with such features, apparently small physical differences have led to wide divergences in the development of vegetation in each basin.
The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[3180] Turloughs*
[7210] *Cladium* Fens*
The main plant community in the kettle-holes at Clyard townland is *Cladium* fen, dominated by Great Fen-sedge (*Cladium mariscus*), with Black Bog-rush (*Schoenus nigricans*) and Slender Sedge (*Carex lasiocarpa*). Clear shallow-water areas are filled by stoneworts (Characeae). Dense reedbeds are found in deeper waters, formed by Common Club-rush (*Scirpus lacustris*) and Common Reed (*Phragmites*

*australis*), with conspicuous tussocks of Greater Tussock-sedge (*Carex paniculata*) and Tufted-sedge (*Carex elata*). A more species-rich community, formed largely of Tubular Water-dropwort (*Oenanthe fistulosa*) and Bogbean (*Menyanthes trifoliata*), occurs in quaking marsh areas. More eutrophic plants such as Nodding Bur-marigold (*Bidens cernua*), Branched Bur-reed (*Sparganium erectum*), Fool's Water-cress (*Apium nodiflorum*) and Blue Water-speedwell (*Veronica anagallis-aquatica*) occur in these communities. Common marsh plants such as Square-stalked St. John's-wort (*Hypericum tetrapterum*), Marsh Pennywort (*Hydrocotyle vulgaris*), sedges (*Carex nigra* and *C. rostrata*) and Grass-of-parnassus (*Parnassia palustris*) are widely distributed, while Knotted Pearlwort (*Sagina nodosa*), Meadow Thistle (*Cirsium dissectum*) and Marsh Lousewort (*Pedicularis palustris*) are especially associated with the fen.

To the north of Clyard, in Coolisduff townland, lies a turlough that floods in winter to an area of 12 ha. The basin is fringed by Gorse (*Ulex europaeus*) and the inundated vegetation receives a heavy coating of calcium carbonate. This turlough drains to a swallow hole in the north-west corner, with summer pools supporting stands of Great Fen-sedge. Another turlough lies just to the north, in Thomastown townland. The southern end of this turlough contains damp grassland vegetation, with Creeping Bent (*Agrostis stolonifera*), Creeping Buttercup (*Ranunculus repens*) and mosses such as *Calliergonella cuspidata*. The northern part is wetter, with Silverweed (*Potentilla anserina*), and contains two pools. Two further turlough areas occur to the west, at Cahernagry East, which floods to an area of 12 ha, and at Caherhemush – Ballywalter, which floods to over 25 ha.

This series of turloughs are of interest for conservation as they support good examples of a habitat listed with priority status under the E.U. Habitats Directive. The occurrence of more permanent water bodies in the kettleholes adds considerable diversity to the site. The presence of *Cladium* fen, a habitat also listed with priority status under the E.U. Habitats Directive, is of particular conservation importance.

## Site Name: Ardkill Turlough SAC

## Site Code: 000461

Ardkill turlough is situated about 7 km east of Ballinrobe in Co. Mayo, and is one of a group of five turloughs that occupy hollows in rolling countryside. It is set amongst low limestone knolls with drift around the south and east. Exposed limestone extends out across the northern part forming a central island with low cliffs. The basin has steep western sides but slopes more evenly to the east. There is much loose rock in the north-eastern part.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[3180] Turloughs*

At Ardkill turlough there is a deep pond at the western end of the basin which is of the order of 6 m below flood level. A shallower pond occurs in the south-eastern sector. In the south-west corner there is a swallow hole at the base of the slope just above floor level. Water also rises at the edge of the northern rock outcrop as a spring. There is no above-ground inflow to the basin. Peat has accumulated in the lower-lying parts of the site, with some accumulation of marl (calcium carbonate) on the rocks and other surfaces where the water is more permanent.

The vegetation is highly diverse for such a small area because of the great range of water level fluctuations and occurrence of bare rock. Characteristic turlough plant communities occur in distinct bands at various levels in the basin. At the topmost level there is a narrow fringe of limestone grassland. The sloping ground below this supports sedge-heath with Mat-grass (*Nardus stricta*). Midslopes are dominated by Creeping Cinquefoil (*Potentilla reptans*) communities. The turlough floor is occupied by wet Common Sedge (*Carex nigra*) vegetation. The main lake supports abundant Amphibious Bistort (*Polygonum amphibium*) and Great Yellow-cress (*Rorippa amphibia*).

The shallower pond also has much Amphibious Bistort along with Common Club-rush (*Scirpus lacustris*) and Water Horsetail (*Equisetum fluviatile*). This pond has a soft marly bed with abundant Spiked Water-milfoil (*Myriophyllum spicatum*), Unbranched Bur-reed (*Sparganium emersum*) and Ivy-leaved Duckweed (*Lemna trisulca*). The stone walls in this area are draped with a spectacular abundance of the moss *Fontinalis antipyretica* and Great Yellow-cress (*Rorippa amphibia*). The central parts of the island are not flooded and contain scrub with Burnet Rose (*Rosa pimpinellifolia*), Ground Ivy (*Glechoma hederacea*) and other species. At the flood line there is Bramble *caesius*), Downy Rose (*Rosa tomentosa*), Buckthorn (*Rhamnus catharticus*) and Common Meadow-rue (*Thalictrum flavum*).

Several pairs of Lapwing breed at the site, and Snipe and Common Sandpiper probably breed. The site is likely to attract wintering waterfowl.
The basin floods regularly to a considerable depth and has some water for many months of the year. No drainage attempts are apparent at present. Much of the area is closely grazed by cattle but the vegetation has not suffered unduly from this.
Ardkill is unusual in Mayo for having such a large fluctuation in water depth (8-10 m), a long-lasting pond and exposed limestone on its shore. The variation in topography creates a good diversity of vegetation types within a small area. The site contains Common Meadow-rue (*Thalictrum flavum*), a species known only from this site in Co. Mayo, as well as a number of other uncommon species. A species of parasitic wasp (*Mesoleptus hibernica*) has been described as new to science from Ardkill Turlough. Taken together, all these features combine to make it a site of high conservation value.

## Site Name: Skealoghan Turlough SAC

## Site Code: 000541

Skealoghan turlough is situated about 5 km from Ballinrobe in Co. Mayo and is one of a group of five turloughs that occupy hollows in rolling countryside. It lies close to the catchment divide between the River Robe (which is 3.2 km away and has been arterially drained) and the Cross River which flows to Lough Corrib.
The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[3180] Turloughs*
Most of Skealoghan Turlough has a peaty soil which varies from 0-85 cm thick and rests on calcareous sand. There is some semi-permanent standing water at the eastern end where peat cutting has exposed the underlying marl (calcium carbonate), and this is fed from natural ponds and ditches to the west. The southern part dries out completely in summer and is bordered by a woodland fringe, which includes Buckthorn (*Rhamnus catharticus*).
The vegetation of the turlough is quite diverse. The waterbody at the eastern end consists of winding channels filled with Common Club-rush (*Scirpus lacustris*). The pond edges are colonised by the pondweeds *Potamogeton natans, P. crispus* and *P. coloratus*, along with Water Horsetail (*Equisetum fluviatile*) and Bulbous Rush (*Juncus bulbosus*). Outside this area, the nutrient-poor conditions support a sedge-heath type vegetation, dominated by sedges (*Carex hostiana* and *C. panicea*), Meadow Thistle (*Cirsium dissectum*) and Purple Moor-grass (*Molinia caerulea*). Marsh Stitchwort (*Stellaria palustris*), an uncommon fen plant, occurs amongst this vegetation type. At higher levels, the vegetation includes Mat-grass (*Nardus stricta*), Tufted Hair-grass (*Deschampsia cespitosa*) and Heath-grass (*Danthonia decumbens*). The deeper soil in the southern section carries an expanse of Common Sedge (*Carex nigra*).
Several pairs of Lapwing breed at the site and some wintering waterfowl are likely to visit the turlough. The turlough floods frequently and no drainage attempts are apparent. Much of the area is closely grazed by cattle, as is common in many turloughs, but the vegetation has not suffered unduly from this, especially in the wetter areas. Peat cutting was terminated many years ago after a small amount was removed. Despite some intensive agriculture to the west of the site, the area remains quite oligotrophic. Skealoghan Turlough is of conservation interest for its diversity of vegetation types, particularly the oligotrophic (nutrient-poor) sedge communities.

## Site Name: Greaghans Turlough SAC

## Site Code: 000503

Greaghans Turlough is the most easterly of a group of five turloughs located near to Ballinrobe in Co. Mayo. It has a flattish, oval basin, which is deepest along the northern edge. For the most part it is surrounded by grazing land and is itself moderately grazed, least intensively at the eastern end. Two small clumps of trees occur on spurs on the northern edge. Two streams enter the turlough, one from the north-east which appears to be permanent, and one from the south which is ephemeral. A channel in the north-western corner may represent attempted drainage but it would appear to have had little overall effect on the hydrology of the site.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[3180] Turloughs*

The vegetation in the turlough basin is clearly related to the contours, with Amphibious Bistort (*Polygonum amphibium*) occurring in most of the deepest parts, and Common Sedge (*Carex nigra*), Jointed Rush (*Juncus articulatus*) and Lesser Spearwort (*Ranunculus flammula*) above this. At the edges, this grades into grassland, which is nutrient-enriched and species-poor at the western end but more species-rich to the east. In places, the floor of the turlough is trampled where cattle gather. These areas support a vegetation community which is particularly rich in annual or short-lived perennial species such as Water-pepper (*Polygonum hydropiper*), Redshank (*Polygonum persicaria*), Common Chickweed (*Stellaria media*), Thread-leaved Water-crowfoot (*Ranunculus trichophyllus*), Marsh Foxtail (*Alopecurus geniculatus*) and the rare, Red Data Book species, Northern Yellow-cress (*Rorippa islandica*).

Low, tree-covered spurs are found on the northern side of the turlough. Here Ash (*Fraxinus excelsior*), Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaeus*) occur, above a fringe of Reed Canary-grass (*Phalaris arundinacea*) and Meadowsweet (*Filipendula ulmaria*), through which grow Creeping Cinquefoil (*Potentilla reptans*) and Creeping-Jenny (*Lysimachia nummularia*). Greaghans Turlough is notable for its use in winter by swans - 40 Whooper Swan, a species listed on Annex I of the E.U. Birds Directive, were recorded in 1986 on the site.

Greaghans Turlough is somewhat uniform because of its topography, but is valuable as an undrained turlough with a variety of well-developed vegetation communities. The site is notable for the occurrence of a large area of vegetation dominated by annual plant species. Turloughs are rare and threatened habitats that are listed on Annex I of the E.U. Habitats Directive and, as such, are of conservation significance. The presence of the rare Northern Yellow-cress and of a large flock of wintering Whooper Swan add significantly to the importance of the site.

## Site Name: Gortnandarragh Limestone Pavement SAC

## Site Code: 001271

Gortnandarragh Limestone Pavement is located on the southern side of Lough Corrib, about 7 km south-east of Oughterard in Co. Galway. The site consists of an exposed limestone plateau which slopes down on its eastern side to cut-over fen and bog. Parts of the pavement exhibit a well-developed system of clints and grykes, while other parts are shattered, with much loose rock. The pavement forms a mosaic with heath, grassland and scrub. Much of the central part is open but the eastern side contains enclosures and is grazed by cattle.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[8240] Limestone Pavement*

The limestone pavement at the site supports a typical flora, including Blue Moor-grass (*Sesleria albicans*), Burnet Rose (*Rosa pimpinellifolia*), Wood Sage (*Teucrium scorodonia*), Wild Thyme (*Thymus praecox*), Spring Gentian (*Gentiana verna*), Carline Thistle (*Carlina vulgaris*), Mouse-ear Hawkweed (*Hieracium pilosella*) and ferns (*Asplenium ruta-muraria, A. trichomanes* and *Ceterach officinarum*). Scattered Juniper (*Juniperus communis*), Yew (*Taxus baccata*), Blackthorn (*Prunus spinosa*), Hazel (*Corylus avellana*), Ash (*Fraxinus* excelsior) and Rowan (*Sorbus aucuparia*) occur but most are browsed, and the Yew in particular exhibits the effects of severe browsing pressure.

The heath at the site is species-rich and is dominated by a mixture of Heather (*Calluna vulgaris*), Bell Heather (*Erica cinerea*) and Bracken (*Pteridium aquilinum*). Other species present include Blue Moor-grass, Sweet Vernal-grass (*Anthoxanthum odoratum*), Common Bent (*Agrostis capillaris*), Quaking-grass (*Briza media*), Purple Moor-grass (*Molinia caerulea*), fescue (*Festuca* sp.), Devil's-bit Scabious (*Succisa pratensis*), Juniper, Tormentil (*Potentilla erecta*), Wood Sage *Teucrium scorodonia*), Cat's-ear (*Hypochoeris radicata*), St. John's-wort (*Hypericum* sp.), eyebrights (*Euphrasia* spp.), Common Knapweed (*Centaurea nigra*), Meadow Vetchling (*Lathyrus pratensis*), Lady's Bedstraw (*Galium verum*), Goldenrod (*Solidago virgaurea*), Wild Strawberry (*Fragaria vesca*), Harebell (*Campanula rotundifolia*) and Wild Madder (*Rubia peregrina*). There are numerous ant hills which are characterised by the presence of Wild Thyme and Fairy Flax (*Linum catharticum*). The heath appears to be under-grazed and scrub is invading. However, there are signs of goats present (droppings and skull noted).

The grassland is dominated by Blue Moor-grass, with many of the same species present as in the heath, but with additional species such as Mountain Everlasting(*Antennaria dioica*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Primrose (*Primula vulgaris*), Ribwort Plantain (*Plantago lanceolata*), violet (*Viola* sp). On the eastern side the land is grazed by cattle and here there are additional species such as Oxeye Daisy (*Leucanthemum vulgare*), Red Clover (*Trifolium pratense*), Yarrow (*Achillea millefolium*) and Wild Carrot (*Daucus carota*). Juniper is particularly abundant here, especially on the area sloping to the bog and this is likely to correspond to the E.U. Habitats Directive category 'Juniper formations'. Small wet patches also occur here with fen species, e.g. Lesser Spearwort (*Ranunculus flammula*), Water Mint (*Mentha aquatica*), and Silverweed (*Potentilla anserina*). Where the habitats grade into peatland, Purple Moor-grass, Grass-of-parnassus (*Parnassia palustris*), Meadow Thistle (*Cirsium dissectum*), Black Bog-rush (*Schoenus nigricans*) and Bog Asphodel (*Narthecium ossifragum*) occur, and this community grades into cut-away blanket-bog type vegetation.

There is a large area of oak-Ash-Hazel woodland and scrub on rocky limestone on the south side of the site. Small stature Hazel dominates the woodland canopy, overtopped frequently by Ash. Mature Hawthorn (*Crataegus monogyna*) is abundant. The field layer is particularly species-rich, composed chiefly of Wild Strawberry*,* Wood Anemone (*Anemone nemorosa*)*,* Lords-and-ladies (*Arum maculatum*)*,* Pignut (*Conopodium majus*)*,* Wood-sorrel (*Oxalis acetosella*)*,* Lesser Celandine (*Ranunculus ficaria*)*,* Glaucous Sedge (*Carex flacca*) and False Brome (*Brachypodium sylvaticum*). The rocks are covered mainly by the mosses *Hylocomium brevirostre* and *Thuidium tamariscinum*. *Rhytidiadelphus triquetrus* is abundant on the soil whilst *Neckera crispa* clothes many of the tree boles.

An area of cut-away bog to the east contrasts with the limestone habitats dominating the rest of the site. This is the only known locality for the endemic fungus *Entoloma jennyi*.

The main land use on the site is extensive grazing by cattle and goats. Threats to the site include over-grazing, land reclamation and quarrying, the latter two already occurring to a small extent within the site.

Gortnandarragh is valuable as an example of limestone pavement, an internationally important habitat which is listed with priority status, on Annex I of the E.U. Habitats Directive. It is also notable because the bog on the site is the type locality and only known station for *Entoloma jennyi*. Furthermore, there are interesting and diverse areas of heath, grassland, scrub and woodland, all contributing to a valuable site of considerable conservation interest. (*Antennaria dioica*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Primrose (*Primula vulgaris*), Ribwort Plantain (*Plantago lanceolata*), violet (*Viola* sp). On the eastern side the land is grazed by cattle and here there are additional species such as Oxeye Daisy (*Leucanthemum vulgare*), Red Clover (*Trifolium pratense*), Yarrow (*Achillea millefolium*) and Wild Carrot (*Daucus carota*). Juniper is particularly abundant here, especially on the area sloping to the bog and this is likely to correspond to the E.U. Habitats Directive category 'Juniper formations'. Small wet patches also occur here with fen species, e.g. Lesser Spearwort (*Ranunculus flammula*), Water Mint (*Mentha aquatica*), and Silverweed (*Potentilla anserina*). Where the habitats grade into peatland, Purple Moor-grass, Grass-of-parnassus (*Parnassia palustris*), Meadow Thistle (*Cirsium dissectum*), Black Bog-rush (*Schoenus nigricans*) and Bog Asphodel (*Narthecium ossifragum*) occur, and this community grades into cut-away blanket-bog type vegetation.

There is a large area of oak-Ash-Hazel woodland and scrub on rocky limestone on the south side of the site. Small stature Hazel dominates the woodland canopy, overtopped frequently by Ash. Mature Hawthorn (*Crataegus monogyna*) is abundant. The field layer is particularly species-rich, composed chiefly of Wild Strawberry*,* Wood Anemone (*Anemone nemorosa*)*,* Lords-and-ladies (*Arum maculatum*)*,* Pignut (*Conopodium majus*)*,* Wood-sorrel (*Oxalis acetosella*)*,* Lesser Celandine (*Ranunculus ficaria*)*,* Glaucous Sedge (*Carex flacca*) and False Brome (*Brachypodium sylvaticum*). The rocks are covered mainly by the mosses *Hylocomium brevirostre* and *Thuidium tamariscinum*. *Rhytidiadelphus triquetrus* is abundant on the soil whilst *Neckera crispa* clothes many of the tree boles.

An area of cut-away bog to the east contrasts with the limestone habitats dominating the rest of the site. This is the only known locality for the endemic fungus *Entoloma jennyi*.

The main land use on the site is extensive grazing by cattle and goats. Threats to the site include over-grazing, land reclamation and quarrying, the latter two already occurring to a small extent within the site.

Gortnandarragh is valuable as an example of limestone pavement, an internationally important habitat which is listed with priority status, on Annex I of the E.U. Habitats Directive. It is also notable because the bog on the site is the type locality and only known station for *Entoloma jennyi*. Furthermore, there are interesting and diverse areas of heath, grassland, scrub and woodland, all contributing to a valuable site of considerable conservation interest.

## Site Name: Ross Lake and Woods SAC

## Site Code: 001312

Ross Lake and Woods is located approximately 4 km north-west of Moycullen on the west side of Lough Corrib in Co. Galway. The area is underlain by limestone.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[3140] Hard Water Lakes

[1303] Lesser Horseshoe Bat (*Rhinolophus hipposideros*)

The main habitat on the site is a medium-sized lake, Ross Lake, which has a limestone bed covered by deposits of precipitated marl and a shoreline of marl-encrusted limestone boulders. It is a good example of a hard water lake, and supports beds of stoneworts, including *Chara globularis* var. *virgata, C. pedunculata* and *C. curta*. The last two species in particular are characteristic of marl lakes. The open water also supports Yellow Water-lily (*Nuphar lutea*) and Broad-leaved Pondweed (*Potamogeton natans*). Most of the shoreline is fringed by wetland vegetation of reedswamp, freshwater marsh, fen, wet woodland and wet grassland. Reedswamp vegetation is dominated by Common Reed (*Phragmites australis*) and Common Club-rush (*Scirpus lacustris*), with Great Fen-sedge (*Cladium mariscus*) also occurring. The rocky limestone shore mostly supports fen-type vegetation characterised by Black Bog-rush (*Schoenus nigricans*). This grades into areas of wet grassland dominated by Purple Moor-grass (*Molinia caerulea*) and species-rich marsh, characterised by species such as Slender Sedge (*Carex lasiocarpa*), Marsh Pennywort (*Hydrocotyle vulgaris*) and Water Mint (*Mentha aquatica*). Also found around the lake edge is well-developed wet woodland, with Alder (*Alnus glutinosa*) and willows (*Salix* spp.) occurring commonly, accompanied by Spindle (*Euonymus europaeus*), Buckthorn (*Rhamnus catharticus*), Guelder-rose (*Viburnum opulus*) and Bog-myrtle (*Myrica gale*).

A small lake, Lough Parkyflaherty, is separated from the main lake by an overgrown railway embankment. The site contains a large block of coniferous plantation, consisting largely of spruce (*Picea* sp.) and larch (*Larix* sp.) species, on the site of a former mixed-deciduous woodland, Annagh Wood. There are also areas of broadleaved woodland and scrub, dominated variously by Beech (*Fagus sylvatica*), Ash (*Fraxinus excelsior*) or Hazel (*Corylus avellana*).A breeding colony (not less than 155 individuals counted in 1994) of Lesser Horseshoe Bat occurs in an out-building beside Ross House. This species is threatened within the EU and the population at this site is rated of international importance. The woodlands and lakeside vegetation on the site provide foraging habitat within a small radius of the roost site. The woodlands in particular are very important to this species in providing shelter to reach foraging habitats and seasonal roosts as it does not fly across open areas. The presence on the site of Otter, a species also listed on Annex II of the E.U. Habitats Directive, and of a small colony of Common Gull (10 individuals breeding in 1992) is notable.

The main land uses within the site are angling, commercial forestry, and grazing of the woodland and wetland areas. The site is of importance because it contains a good example of a hard water lake, a habitat listed on Annex I of the E.U. Habitats Directive, and for the internationally important population of Lesser Horseshoe Bat, a species listed on Annex II of this Directive, which occurs. The presence of Otter and breeding Common Gull is also of note.

## Site Name: Rostaff Turlough

## Site Code: 000385

Rostaff Turlough is located approximately 2km. north-west of Headford, beside Ross Abbey. The Black River flows through the site, which is situated in a limestone area. The main habitats within the site are improved grassland and turlough.

The interest of the site is zoological, mainly wintering waterfowl. Two species with nationally important numbers occur: Greenland White-fronted Geese (average peak 83, absolute maximum 88, 1982/83 - 1991/92) and Shoveler (average peak 70, 1984/85 - 1986/87). Species with regionally/locally important numbers are Wigeon (300), Teal (20), Mallard (89), Golden Plover (350), Lapwing (453), Dunlin (37) and Curlew (173) (numbers are average peaks over 3 seasons 1984/85 - 1986/87). Whooper Swans occasionally use the site, with up to 37 in November 1984. Species breeding at the site are Ringed

Plover, Snipe, Tufted Duck, Pochard, Grey Heron and Redshank. One Peregrine Falcon has used the site as a winter residence over a number of years.
The importance of Rostaff Turlough is primarily ornithological with nationally important numbers of Greenland White-fronted Geese and Shoveler. The site also has a number of notable populations of breeding birds. The site is a bird sanctuary.

## Site Name: Lough Corrib
## Site Code: 000297

Same as Lough Corrib SPA

## Site Name: Lough Hacket
## Site Code: 001294

Lough Hacket is located 4.5km. east north-east of Headford. This small lake is situated in an area where the underlying geology is carboniferous limestone.
The main habitat of this site is the lake itself, which is surrounded to the west by reedswamp, areas of fresh water marsh as well as lowland wet grassland. The eastern side of the lake has improved grassland. A small island occurs in the lake.
The site was noted in 1971 (AFF County Report) as an area of ornithological importance for wintering wildfowl. Sheppard (1993) lists the site as being of regional/local importance. Wigeon (40), Pochard (110), Tufted Duck (10), Golden Plover (20), Lapwing (150) and Curlew (150) (1 Count, Sheppard 1993) occur. The lake island has a few pairs of breeding grey herons and cormorants (Ranger report). This site holds a wintering population of Golden Plover, a species listed in Annex 1 of the E.U. Birds Directive and in the Red Data Book as being threatened in Ireland. This site is of interest as an important site for wintering wildfowl.

## Site Name: Turloughcor
## Site Code: 001788

Turloughcor is located approximately 5km south-east of Headford, Co. Galway in a lowland karstic limestone area. A small lake, Doolough is the centre of the site, surrounded by a large area which was liable to flooding in the past. Due to extensive drainage, most of the area no longer floods. There are still some small areas to the north-east of the lake which flood, along natural springs. The dominant habitat in the area is improved grassland, with no plant species of importance being noted.
The main secondary habitats at this site are water bodies, rivers, streams and drainage channels. Some inland wet and dry grassland occur, along with small amounts of scrub and limestone pavement.
The main interest of this site is ornithological. In excess of 500 Wigeon graze the grassland around the turlough, with lesser numbers of Teal and Mallard. Greenland White-Fronted Geese do not use the site anymore. Mute Swans (2), Mallard and Lapwing breed at the site.
Drainage is the main damaging operation affecting this site. It has already considerably lowered the scientific value of the turlough. Fertilization of the surrounding grassland is also a problem. Black River and District Gun Club manage the shooting on the turlough and have had a Mallard-release programme over the last few years.
Turloughcor is a locally important site, which would be of more importance if drainage and fertilization were controlled.

## Site Name: Turlough Monaghan

## Site Code: 001322

Turlough Monaghan is situated just to the north of Fearagha.
It has a flat floor in most places apart from a rocky rise that projects from the south-west side. The north-east edge is marked by level beds of outcropping limestone which rise about 8 km above the basin. The turlough seems to flood regularly but is relatively shallow.
The two ponds in the lower parts of the floor resemble each other in having a central area of Broad-leaved Pondweed (Potamogeton natans) and Small Pondweed (Potamogeton berchtoldii) surrounded by weedy species. Creeping Cinquefoil (Potentilla reptans) is widespread but the vegetation structure is modified by grazing pressure.
A depression at the northern end carries Common Sedge (Carex nigra), which changes to marginal communities as the land rises. A similar rise in the south is colonised by a heathy vegetation with a considerable amount of Purple Moor-grass (Molinia caerulea). The soils are thin there and rock breaks through in places.
More definite outcrop on the eastern side bears some Blackthorn (Prunus spinosa) scrub centrally, while at the edge the pavement is sometimes flooded - Yellow-rattle
(Rhinanthus minor), Buckthorn (Rhamnus catharticus),
Quaking-grass (Briza media) and Tawny Sedge (Carex hostiana) are frequent, with both Rough Hawkbit (Leontodon hispidus) and Lesser Hawkbit (Leontodon taraxacoides).
Flocks of Lapwing have been recorded at the turlough.
The turlough is basically a dry one with little physical variation except for the outcrops of bedrock. The vegetation, however, is quite diverse, with ten community types in a relatively small area. The site is of local scientific and conservation value.

## Site Name: Turlough O'Gall

## Site Code: 000331

Turlough O'Gall lies between Shrule and Tuam, approximately 3 km west of Belclare. The surrounding countryside is very flat, but the turlough can be viewed from the Knockmaa ridge to the south. The floor of the basin, particularly in the east, is uneven because of bedrock. To the west there is a large expanse of level ground on limestone, which ocassionally outcrops. The turlough is a dry one, and the arterial drainage of the Clare river is believed to curtail flooding.
Apart from the vicinity of the ponds, the southern half of the turlough has a simple vegetation structure made up mainly of limestone grassland, with prominent Mat-grass (Nardus stricta). There is a little scrub invasion with Hawthorn (Crataegus monogyna) bushes present.
Towards the north of the site the vegetation is more complex as this area is prone to fluctuations in water level. Creeping Cinquefoil (Potentilla reptans) is widely spread, but there are also sedges and grasses. Above this is an area of unmanaged grassland with Tufted Hair-grass (Deschampsia cespitosa), Purple Moor-grass (Molinia caerulea) and Sea Plantain (Plantago maritima) amongst Willow (Salix repens) and Buckthorn (Rhamnus catharticus).
The three depressions on the floor of the turlough are ringed by Common Sedge (Carex nigra). The pools themselves contain Pondweeds (Potamogeton spp.) and Bogbean (Mentanthes trifoliata). Typical fen vegetation surrounds these pools.
The area is used for grazing by some cattle, but predominantly sheep.
Turlough O'Gall is distinct in vegetational terms in having large areas of both sedge heath and limestone grassland - the rock outcrops and pools add habitat diversity. Its unmodified drainage adds to its conservation value.

## Site Name: Knockmaa Hill

## Site Code: 001288

Knockmaa hill is a prominent limestone Knoll located 10 km west of Tuam. The surrounding countryside consists of good quality, pastoral farmland on limestone. The hill itself is 180m high and is covered with deciduous woodland. Towards the summit of the hill there is an area of limestone pavement and heath.

The main tree species in the woodland are Ash (Fraxinus excelsior) and Oak (Quercus sp.) and the associated ground flora is species-rich. There is some Alder (Alnus glutinosa) in wetter seepage areas and close to the summit, thee is an area of dwarf Oak (Quercus sp.) woodland on thin soils. The wood contains numerous exotic tree species including Beech (Fagus sylvatica), Sycamore (Acer pseudoplatanus), Cherry Laurel (Prunus laurocerasus), Larch (Larix spp.) and Pine (Pinus spp.). Of these, only Beech and Sycamore are regenerating.
At the top of the hill there is an area of limestone pavement which supports a species-rich, Burren-type, flora with some small areas of heath.
Despite the incidence of tree felling in the past, the site is still of interest because it is a good example of deciduous woodland on thin limestone soil. Similar sites are rare in this part of the country. The occurrence of species-rich limestone pavement vegetation at the top of the hill adds significantly to the interest of the site.

## Site Name: Killower Turlough

## Site Code: 000282

Killower Turlough is located approximately 5km west of Tuam, Co. Galway. It is part of the River Clare group of turloughs, which also includes Belclare Turlough just to the south of the site. It is situated in an area of carboniferous limestone, with large amounts of Marl underlying thin soils. The main habitats are the turlough itself, as well as lowland grassland, wet, dry and improved, heath and reedswamp.
Due to the Corrib Drainage schemes of the 1960's, the total flooding area has decreased, and a large part of the original site is now improved grassland.
The main interest of this site is ornithological. It is part of the North East Galway identified by Sheppard (1993) and is of local or regional importance for 14 species of waterfowl, including Whooper Swan and Greenland White-fronted Goose. These two species are listed in Annex 1 of the Habitats Directive.
The damage of this site to date has been caused by drainage and the subsequent improvement of land. This continues to be the only apparent threat to the site, since the soil is of such poor quality that a forestry application was turned down. The designation of this site as an NHA rests purely on its regional importance for waterfowl.

## Site Name: Rathbaun Turlough

## Site Code: 000215

Rathbaun turlough occupies a well defined, rectangularly-shaped basin in low-lying countryside halfway between Tuam, Co. Galway and Ballinrobe, Co. Mayo.
A river flows into the turlough from the north and the turlough is drained by a swallow hole to the west, near a temporary lake. The drainage into the bedrock has been altered by human interference, which results in abandoned channels and piles of debris.
The turlough seems drier than it would naturally be, and as a result there is little likelihood of peat formation at the present time.
Rathbaun turlough has a simple topography and the associated vegetation follows its contours in a fairly regular way. The uppermost zone is predominantly sedge/ heath grassland with dry grassland associated with the limestone rock outcrops at the northern end. As the slope lessens, wet grassland predominates, and rushes are common in the hollows that retain dampness the longest.
Grazing and trampling by cattle and sheep is common, and leads to a breakdown of the vegetation structure. Despite this, and although the hydrology of the basin has been altered from its natural state, the size and character of the turlough is noteworthy.
At present, the turlough is too dry and heavily grazed for a full development of its potential vegetation, or for the breeding of birds. But the nature of its drainage would make it possible for its water levels to be managed. However, because of its physical uniformity, the site contains large areas of three plant communities: the largest stand of the Dry Carex nigra community, the third largest of species poor Potentilla repens community and a stand of Wet Annuals which contains both Red Goosefoot (Chenopodium rubrum) and Northern Yellow-cress (Rorippa islandica), two rare plant species. The site is therefore worthy of NH status.

## Site Name: Gortnandarragh Limestone Pavement

## Site Code: 001271

Gortnandarragh Limestone Pavement is located on the southern side of Lough Corrib, about 7 km south-east of Oughterard. The site consists of an exposed limestone plateau flanked with scrub. Parts of the pavement exhibit a well-developed system of clints and grykes, while other parts are shattered, with much loose rock. The limestone pavement supports a typical flora, including Blue Moor-grass (Sesleria albicans), Burnet Rose (Rosa pimpinellifolia), Wood Sage (Teucrium scorodonia), Wild Thyme (Thymus praecox), Spring Gentian (Gentiana verna) and ferns (Asplenium ruta-muraria, A. trichomanes and Ceterach officinarum). Hazel (Corylus avellana) is the dominant species of the scrub, although Ash (Fraxinus excelsior) and Goat Willow (Salix caprea) are also common. The well-developed ground flora includes Enchanter's-nightshade (Circaea lutetiana), Wood Sorrel (Oxalis acetosella), False Brome (Brachypodium sylvaticum) and Broad-leaved Helleborine (Epipactis helleborine). An area of cutaway bog to the east contrasts with the limestone habitats dominating the rest of the site. This is the only known station for the endemic fungus Entoloma jennyi. The main landuse is extensive grazing by cattle and goats. Threats to the site include overgrazing, land reclamation and quarrying, the latter two already occurring to a small extent within the site. Gortnandarragh is valuable as an example of limestone pavement, an internationally important habitat which is listed, with priority status, on Annex I of the EU Habitats Directive, and because the bog on the site is the type locality and only known station for Entoloma jennyi

## Site Name: Ross Lake and Woods

## Site Code: 001312

Ross Lake and Woods is located approximately 4 km north-west of Moycullen on the west side of Lough Corrib in Co. Galway. The area is underlain by limestone. The main habitat on the site is a medium-sized lake, Ross Lake, which has a limestone bed covered by deposits of precipitated marl and a shoreline of marl-encrusted limestone boulders. It is a good example of a hard water lake, a habitat listed on Annex I of the EU Habitats Directive, and supports beds of stoneworts, including Chara globularis var. virgata, C. pedunculata and C. curta. The last two species in particular are characteristic of marl lakes. The open water also supports Yellow Water-lily (Nuphar lutea) and Broad-leaved Pondweed (Potamogeton natans). Most of the shoreline is fringed by wetland vegetation of reedswamp, freshwater marsh, fen, wet woodland and wet grassland. Reedswamp vegetation is dominated by Common Reed (Phragmites australis) and Common Club-rush (Scirpus lacustris), with Great Fen-sedge (Cladium mariscus) also occurring. The rocky limestone shore mostly supports fen-type vegetation characterised by Black Bog-rush (Schoenus nigricans). This grades into areas of wet grassland dominated by Purple Moor-grass (Molinia caerulea) and species-rich marsh, characterised by species such as Slender Sedge (Carex lasiocarpa), Marsh Pennywort (Hydrocotyle vulgaris) and Water Mint (Mentha aquatica). Also found around the lake edge is well-developed wet woodland, with Alder (Alnus glutinosa) and Willows (Salix spp.) occurring commonly, accompanied by Spindle (Euonymus europaeus), Buckthorn (Rhamnus catharticus), Guelder-rose (Viburnum opulus) and Bog-myrtle (Myrica gale). A small lake, Lough Parkyflaherty, is separated from the main lake by an overgrown railway embankment. The site contains a large block of coniferous plantation, consisting largely of Spruce (Picea) and Larch (Larix) species, on the site of a former mixed-deciduous woodland, Annagh Wood. There are also areas of broadleaved woodland and scrub, dominated variously by Beech (Fagus sylvatica), Ash (Fraxinus excelsior) or Hazel (Corylus avellana). A breeding colony (not less than 155 individuals counted in 1994) of Lesser Horseshoe Bat (Rhinolophus hipposideros) occurs in an outbuilding beside Ross House. This species is threatened within the EU and consequently listed on Annex II of the EU Habitats Directive; the population at the site is rated as of international importance. The woodlands and lakeside vegetation on the site provide foraging habitat within a small radius of the roost site; the woodlands are very important to this species, which does not fly across open areas, by providing shelter to reach foraging habitats and seasonal roosts. The presence on the site of Otter, a species also listed on Annex II of the EU Habitats Directive, and of a small colony of Common Gull (10 individuals breeding in 1992) is notable. The main landuses within the site are angling, commercial forestry, and grazing of the woodlands and wetland areas. The site is of importance because it contains a good example of a hard water lake, a habitat listed on Annex I of the EU Habitats Directive, and for an internationally important population of Lesser Horseshoe Bat, a species listed on Annex II of this directive. The occurrence of Otter and breeding Common Gull is also of note.

## Site Name: Drimcong Wood

## Site Code: 001260

Drimcong Wood is situated approximately l.5km. north-east of Moycullen, Co. Galway, in a limestone region. It is a mixture of deciduous and coniferous woodland.

The main habitat is deciduous woodland, with Ash (Fraxinus excelsior) and Birch (Betula pubescens) common, at least on the fringes. Coniferous woodland, with sitka spruce (Picea sitchensis) is also frequent. Two lakes are included in part in the site, Lough Aroraun and Lough Pollalehy, leading to the inclusion of an area of reedswamp (Phragmites australis - dominated) in the site.

The 1971 AFF County Report notes that part of the site is used as a deer forest.

The main damaging operations and threats within the site are afforestation and mineral extraction. A new road has been built to access a recently purchased area in the south-east of the site. The intention is to resume quarrying. An application has also been made to the Local Planning Authority to develop the area as an amenity park and motor sport facilities complex.

The scarcity of woodland in the west of Ireland in particular, as well as the good range of habitats, justifies the designation of thee site as a N.H.A.

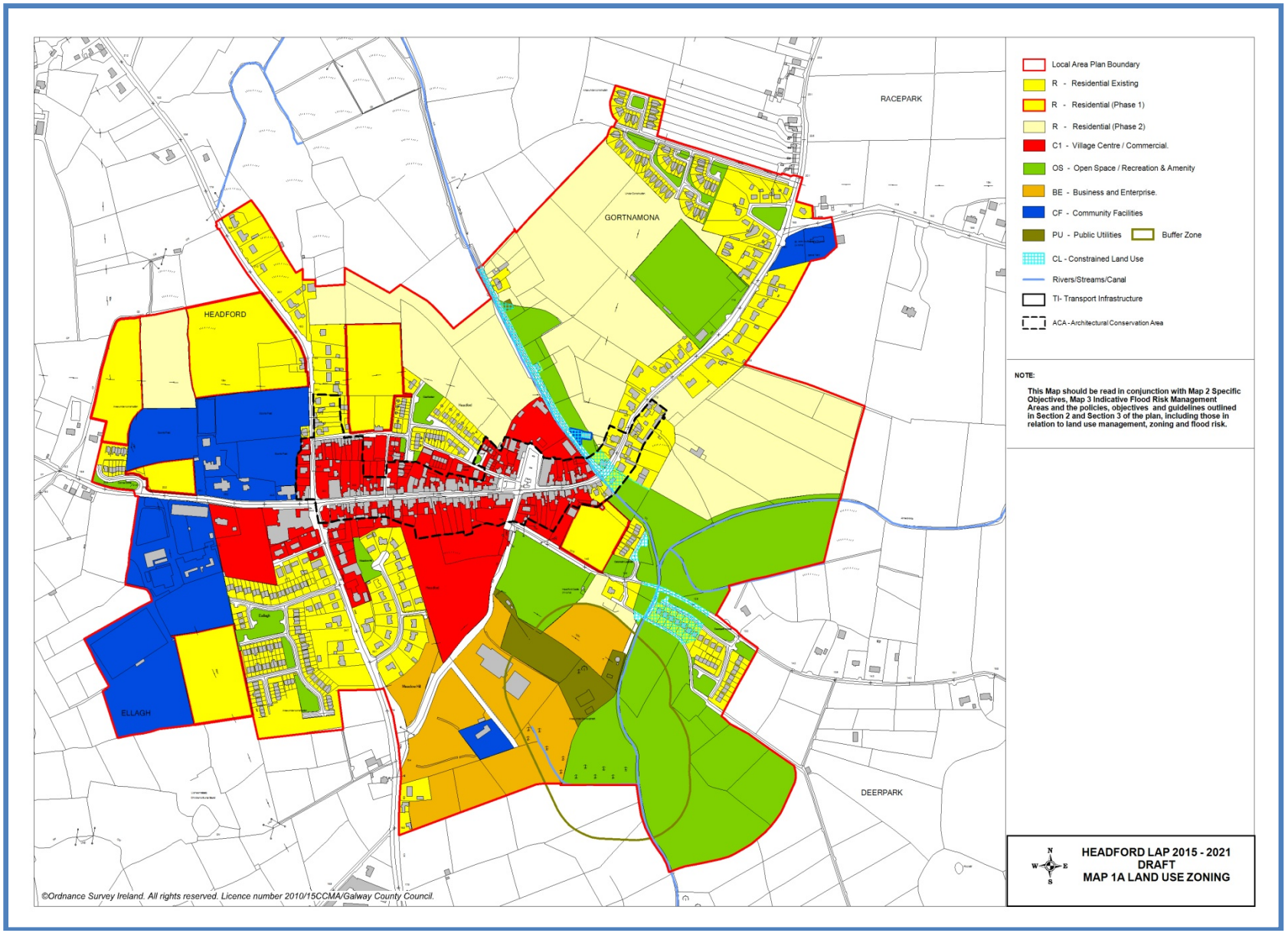
## Site Name: Ballycuirke Lough

## Site Code: 000228

The Ballycuirke Lough site includes Lough Kip, the Loughkip River and Ballycuirke Lough itself and is situated 2-5 km south of Moycullen. Lough Kip and Loughkip River lie on acidic granite rocks and receive water from surrounding blanket bog peat. The eastern shore of Ballycuirke Lough is on limestone. The freshwater algae and invertebrates along the river and in Ballycuirke Lough are reported to be of interest (An Foras Forbartha 1971). Herring Gulls and Common Gulls (20 pairs) are reported to nest on rocky islets in Ballycuirke Lough (Lloyd, 1982).

# Appendix B

# Land Use Zoning Map


RACEPARK
GORTNAMONA
HEADFORD
ELLAGH
DEERPARK
Local Area Plan Boundary
R - Residential Existing
R - Residential (Phase 1)
R - Residential (Phase 2)
C1 - Village Centre / Commercial.
OS - Open Space / Recreation & Amenity
BE - Business and Enterprise.
CF - Community Facilities
PU - Public Utilities
Buffer Zone
CL - Constrained Land Use
Rivers/Streams/Canal
TI- Transport Infrastructure
ACA - Architectural Conservation Area
NOTE:
This Map should be read in conjunction with Map 2 Specific Objectives, Map 3 Indicative Flood Risk Management Areas and the policies, objectives and guidelines outlined in Section 2 and Section 3 of the plan, including those in relation to land use management, zoning and flood risk.
HEADFORD LAP 2015 - 2021
DRAFT
MAP 1A LAND USE ZONING
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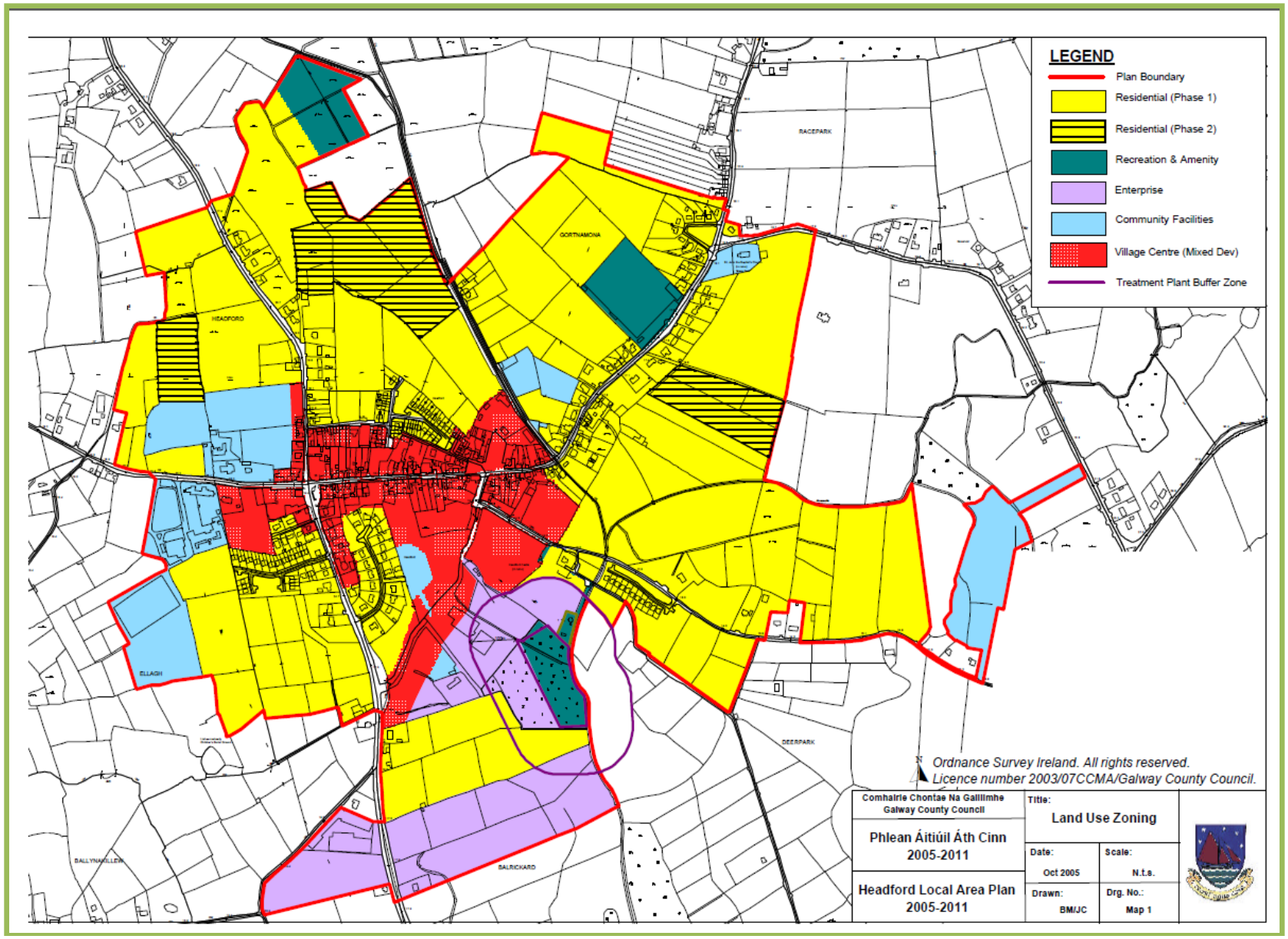
# Appendix C

# Land Use Zoning Map 2005-2011


LEGEND
Plan Boundary
Residential (Phase 1)
Residential (Phase 2)
Recreation & Amenity
Enterprise
Community Facilities
Village Centre (Mixed Dev)
Treatment Plant Buffer Zone
HEADFORD
GORTNAMONA
RACEPARK
ELLAGH
DEERPARK
BALLYNAKILLEW
BALRICKARD
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Comhairle Chontae Na Gaillimhe
Galway County Council
Phlean Áitiúil Áth Cinn
2005-2011
Headford Local Area Plan
2005-2011
Title:
Land Use Zoning
Date:
Oct 2005
Scale:
N.t.s.
Drawn:
BM/JC
Drg. No.:
Map 1