

# HISTORIC LANDFILL AT CASTLEISLAND, CO. KERRY

---

## STAGE 1 APPROPRIATE ASSESSMENT SCREENING REPORT FOR THE REMEDiation OF HISTORIC LANDFILL SITE, CASTLEISLAND, COUNTY KERRY

---

Prepared for: Kerry County Council



**Date:** August 2021

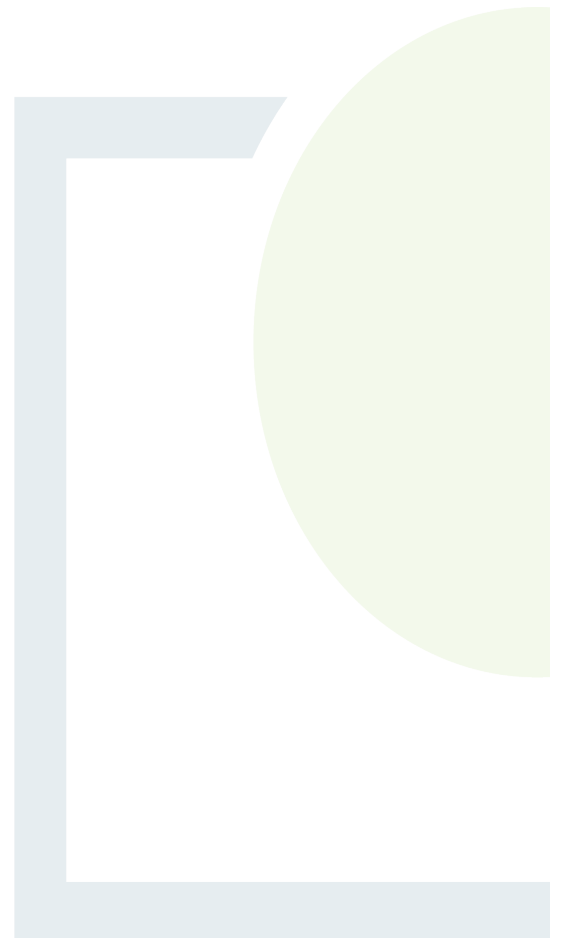
J5 Plaza, North Park Business Park,  
North Road, Dublin 11, D11 PXT0, Ireland

T: +353 1 658 3500 E: [info@ftco.ie](mailto:info@ftco.ie)

**CORK | DUBLIN | CARLOW**

[www.fehilytimoney.ie](http://www.fehilytimoney.ie)

For inspection purposes only.  
Consent of copyright owner required for any other use.



# STAGE 1 APPROPRIATE ASSESSMENT SCREENING REPORT FOR HISTORIC LANDFILL SITE, CASTLEISLAND, COUNTY KERRY

## HISTORIC LANDFILL AT CASTLEISLAND, CO. KERRY

User is responsible for Checking the Revision Status of This Document

Rev. No.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	Issue to Client	DOH/MG	JK	BG	01.09.2020
01	Final Submission	DOH/EOC/AM	JK	BG	19.08.2021

**Client:** Kerry County Council

**Keywords:** Stage One Appropriate Assessment Screening Report, AA Screening, Article 6 of the Habitats Directive, European (Natura 2000) sites, Historic Landfill at Castleisland, Co. Kerry, Remediation.

**Abstract:** This document comprises the Stage One: Appropriate Assessment Screening Report for the Historic Landfill at Castleisland, Co. Kerry. Appropriate Assessment is required under Article 6 (3) of the Habitats Directive for any project or plan that may give rise to significant effects on a European (Natura 2000) site.

## TABLE OF CONTENTS

1. INTRODUCTION .....	1
1.1 Legislative Requirements .....	2
1.1.1 Regulatory Context.....	2
2. METHODOLOGY .....	5
2.1 Stages of Appropriate Assessment.....	5
2.1.1 Impact Assessment.....	6
2.2 Desktop Study.....	6
2.3 Field Study .....	7
3. BRIEF DESCRIPTION OF THE EXISTING SITE .....	8
4. TIER 2 AND 3 RISK ASSESSMENT FINDINGS.....	9
5. PROPOSED REMEDIATION WORKS.....	11
5.1 Overview.....	11
5.2 Construction Phase.....	11
5.2.1 Operational Phase / Post Construction .....	12
6. STAGE ONE – SCREENING REPORT .....	13
6.1 Brief Description of the European Sites within 15km of the Development .....	13
6.2 Conservation Objectives.....	26
6.3 Potential Cumulative Effects.....	27
6.4 Screening Assessment Criteria .....	29
6.5 Screening Matrix.....	30
6.6 Stage One Screening Conclusion .....	35
7. REFERENCES.....	36

## LIST OF APPENDICES

- Appendix 1: Finding of No Significant Effects Report
- Appendix 2: Tier 2 and 3 Risk Assessment report
- Appendix 3: Parameters and Results for Groundwater, Surface Water and Landfill Gas Monitoring
- Appendix 4: European Site Synopses

---

## LIST OF FIGURES

	<u>Page</u>
Figure 1-1: Site Location .....	4
Figure 6-1: European Sites within 15km.....	25

## LIST OF TABLES

Table 6-1: European Sites within the zone of influence .....	14
Table 6-2: European sites located within 15km of Castleisland Historic Landfill and Six Other Historic Landfills (Requiring Remediation) .....	29

*For inspection purposes only.  
Consent of copyright owner required for any other use.*



## 1. INTRODUCTION

Fehily Timoney and Company (FT) were commissioned by Kerry County Council to prepare a Stage 1 Appropriate Assessment Screening Report, as required by Article 6 of Council Directive 92/43/EEC (Habitats Directive). The preparation of the Appropriate Assessment Screening Report (AA Screening) follows a Tier 3 Risk Assessment (see Appendix 2) recommendation for remediation works to the Historic Landfill at Castleisland, Co. Kerry (see Figure 1-1 for location).

In compliance with the provisions of Article 6 of the Habitats Directive, as implemented by Part XAB of the Planning and Development Act 2000, as amended, in circumstances where a proposed plan or project is likely to have a significant effect on a European (Natura 2000) site, either individually or in combination with other plans or projects, an Appropriate Assessment (AA) must be undertaken by the competent authority, of the implications for the site in view of the site's conservation objectives.

European sites comprise both Special Protection Areas (SPAs) for birds and Special Areas of Conservation (SACs) for habitats and species. The Habitats Directive formed a basis for the designation of SACs. Similarly, SPAs are legislated for under the Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds). In general terms, European sites are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community.

Article 6 of the Habitats Directive envisages a two-stage process, which is implemented in some detail by the provisions of sections 177U and 177V of the Planning and Development Act. Screening for appropriate assessment in accordance with section 177U is the first stage of the AA process (Stage One), in which the possibility of there being a significant effect on a European site is considered. Plans or projects that have no appreciable effect on a European site are thereby excluded, or screened out, at this stage of the process. Where screening concludes that there is the potential for significant effects, then it is necessary to carry out an AA (Stage Two) for the purposes of Article 6(3), and a Natura Impact Statement (NIS) is produced. The NIS, which forms the basis of the AA, considers the effects of a project or plan on the integrity of a European site and on its conservation objectives, and where necessary, draws up mitigation measures to avoid/minimise negative effects.

The competent authority, in carrying out an AA, is required to make an examination, analysis, evaluation, findings, conclusions and a final determination as to whether or not the proposed works would be likely to have significant effects on the relevant European site(s) in view of their conservation objectives. To evaluate the potential effect(s) of the proposed development on the European sites, all sites located within a 15 km radius of the development or those which are ecologically linked were considered. Please note that while a 15 km buffer is recommended for plans, there is no hard and fast rule for buffer size (EPA, 2009). A 15 km buffer was used as it encompasses a distance in which the qualifying features and special conservation interests of European sites may potentially be impacted with regards to the proposed development separately and in combination with other developments. However, European sites located outside of the 15 km buffer with potential links to the proposed development were also considered (e.g., hydrological connections), no additional sites required consideration.

The historic landfill is not located within any European site. Seven European sites are located within 15 km of the proposed development:

- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)
- Lower River Shannon cSAC (002165)
- Ballyseedy Wood SAC (002112)



- Castlemaine Harbour SAC (000343)
- Slieve Mish Mountains cSAC (002185)
- Blackwater River (Cork/Waterford) cSAC (002170)
- Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365)

## 1.1 Legislative Requirements

The requirements for an AA are set out in the Habitats Directive 92/43/EEC. Articles 6(3) and 6(4) of this Directive states:

*6(3) Any plan or project not directly connected with or necessary to the management of the site (Natura 2000 sites) but likely to have significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives.*

*In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

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

The statutory agency responsible for European sites is the National Parks and Wildlife Service (NPWS) of the Department of Culture, Heritage and the Gaeltacht (DCHG). In December 2009 'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government' was published with a minor amendment in 2010 (DoEHLG, 2010). This guidance document was prepared jointly by the NPWS and Planning Divisions of DoEHLG (now DCHG), with input from local authorities. Previously, in 2001, the European Commission issued a guidance document. This guidance document has been updated in the published European Commission (2018) "*Managing Natura 2000 sites the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*". This Appropriate Assessment Screening Report has been prepared in accordance with the relevant Irish and European Commission Guidance.

### 1.1.1 Regulatory Context

In 1997, the Habitats Directive was transposed into Irish National Law by the European Communities (Natural Habitats) Regulations, SI 94/1997 (as amended by S.I. 233/1998 & S.I. 378/2005).



The European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477/2011) revoked the 1997 Regulations (and amendments) as well as the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010. The purpose of the 2011 Regulations was to address transposition failures identified in the Court of Justice of the European Union (CJEU) judgements.

Following additional amendments in 2013 (S.I. 499/2013) and 2015 (S.I. 355/2015) the regulations are now cited as the European Communities (Birds and Natural Habitats) Regulations 2011 to 2015.

The Regulations have been prepared to address several judgments of the CJEU against Ireland, notably cases C-418/04 (*Commission v Ireland*) and C-183/05 (*Commission v Ireland*), in respect of failure to transpose elements of the Birds Directive and the Habitats Directive into Irish law.

For inspection purposes only.  
Consent of copyright owner required for any other use.

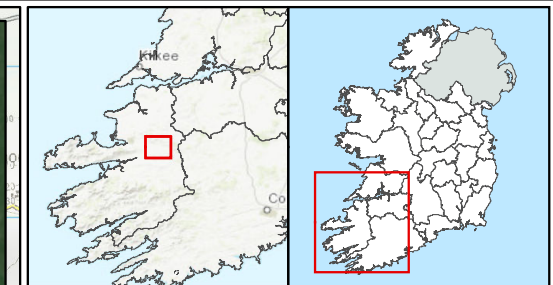
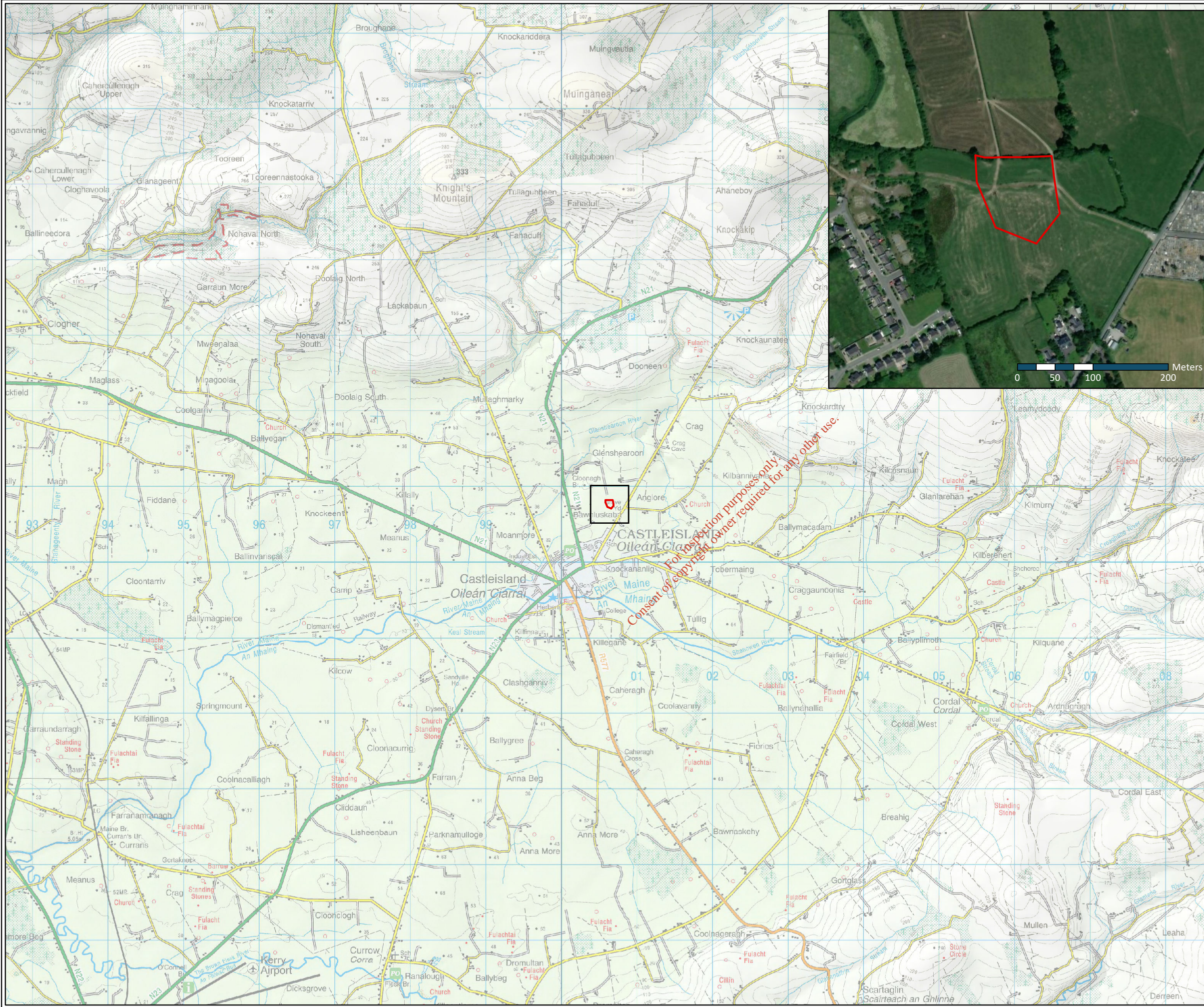


**Figure 1-1: Site Location**

[https://uss.ftco.ie/DMS/view\\_document.aspx?ID=559237&Latest=true](https://uss.ftco.ie/DMS/view_document.aspx?ID=559237&Latest=true)

*For inspection purposes only.  
Consent of copyright owner required for any other use.*





 Site Boundary



Consent of copyright owner required for any other use.

<b>TITLE:</b>	Site Location
<b>PROJECT:</b>	AA Screening for Castleisland Historic Landfill, Co. Kerry
<b>FIGURE NO:</b>	1.1
<b>CLIENT:</b>	Kerry County Council
<b>SCALE:</b>	1:50000
<b>REVISION:</b>	0
<b>DATE:</b>	27/04/2020
<b>PAGE SIZE:</b>	A3





## 2. METHODOLOGY

### 2.1 Stages of Appropriate Assessment

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures to be addressed in the AA process. Firstly, a project should aim to avoid any negative effects on European sites by identifying possible effects early in the project and should design the project in order to avoid such effects.

There are four stages in an AA, as outlined in the European Commission Guidance document (2001). The following is a brief summary of these steps:

- Stage One - Screening: This stage examines the likely effects of a project either alone or in combination with other projects upon a European Site and considers whether it can be objectively concluded that these effects will not be significant.
- Stage Two - Appropriate Assessment: In this stage, the effect of the project on the integrity of the European site is considered with respect to the conservation objectives of the site and to its structure and function. Mitigation measures should be applied to the point where no adverse effects on the site(s) remain.
- Stage Three - Assessment of Alternative Solutions: Should the Appropriate Assessment determine that adverse effects are likely upon a European site, this stage examines alternative ways of implementing the project that, where possible, avoid these adverse effects.
- Stage Four - Assessment where no alternative solutions exist and where adverse effects remain: Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the Natura site will be necessary. European case law highlights that consideration must be given to alternatives outside the project area in carrying out the IROPI test. It is a rigorous test which projects are generally considered unlikely to pass.

In the preparation of this assessment therefore regard has been given to the Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations 2011, and with reference to the relevant guidance, in particular:

- Assessment of Plans and Projects significantly affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission 2001.
- *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin 2010.
- European Commission (2018). *Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC*. Brussels, 21.11.2018 C (2018) 7621 final.



### 2.1.1 Impact Assessment

The first step in the screening process is to develop a list of European sites potentially affected by the proposed development. Each European site is reviewed to establish whether or not the proposed development is likely to have a significant effect on the integrity of the site, as defined by its structure and function, and its conservation objectives.

The qualifying interests of each European site are identified, and the potential threats are summarised into the following categories for the screening process, and described within the screening matrix as follows:

- Direct effects refer to habitat loss or fragmentation arising from land-take requirements for development or agricultural purposes. Direct effects can be as a result of a change in land use or management, such as the removal of agricultural practices that prevent scrub encroachment.
- Indirect and secondary effects do not have a straight-line route between cause and effect, and it is potentially more challenging to ensure that all the possible indirect effects of the plan (or project) – in combination with other plans and projects - have been established. These can arise when a development alters the hydrology of a catchment area, which in turn affects the movement of groundwater to a site, and the qualifying interests that rely on the maintenance of water levels. Deterioration in water quality can occur as both an indirect or direct consequence of development, which in turn changes the aquatic environment and reduces its capacity to support certain plants and animals. The introduction of invasive species can also be defined as an indirect effect, which results in increased movement of vectors (humans, fauna, surface water), and consequently the transfer of alien species from one area to another.
- Disturbance to fauna can arise directly through the loss of habitat (e.g., bat roosts) or indirectly through noise, vibration and increased activity associated with construction and operation.

## 2.2 Desktop Study

In order to complete the Screening for Appropriate Assessment certain information on the existing environment is required. A desk study was carried out to collate available information on the site's natural environment. This comprised a review of the following publications, data and datasets:

- Kerry County Development Plan 2015-2021
- Killarney Municipal District Local Area Plan 2018-2024
- Kerry County Council Planning Enquiry System ([www.kerrycoco.ie/planning/online-planning-enquiry/](http://www.kerrycoco.ie/planning/online-planning-enquiry/))
- National Parks and Wildlife Service (NPWS) website and metadata available ([www.npws.ie](http://www.npws.ie))
- OSI Aerial photography and 1:50,000 mapping
- National Biodiversity Data Centre (NBDC) (on-line map-viewer)
- BirdWatch Ireland website
- Teagasc soil area maps (NBDC website)
- Geological Survey Ireland (GSI) area maps
- Environmental Protection Agency (EPA) (on-line map-viewer)
- River Catchment & Sub-catchment WFD datasets
- Tier 2 Risk Assessment Report for Castleisland Historic Landfill
- Tier 3 Risk Assessment Report for Castleisland Historic Landfill



## 2.3 Field Study

A site walkover was undertaken of the site on 8<sup>th</sup> February 2019. Habitats were identified and classified according to 'A Guide to Habitats in Ireland' (Fossitt, 2000). The site walkover included a search for invasive species. Birds, mammals and other taxa observations or signs were also recorded during the site walkover.

For inspection purposes only.  
Consent of copyright owner required for any other use.



### 3. BRIEF DESCRIPTION OF THE EXISTING SITE

The historic landfill is approximately 0.57ha in size and comprised of open farmland located to the north-east of Castleisland town and centre. The current land use for the site is agricultural grassland and an agricultural access track traverses the site. Hedgerows runs along the site's northern boundary. The lands immediately surrounding the site are agricultural with residential land located approximately 100m west of the site and a cemetery is located approximately 140m east/south-east of the site.

During the site walkover the majority of the site was categorised under Fossitt (2000) as 'improved grassland' (GA1) with 'hedgerow' (WL1) and 'building and artificial surfaces' (BL2). During the walkover, several trees located within the sites hedgerow (northern boundary) were identified as having potential bat roosting habitat. A Peregrine Falcon was observed flying over the site. No invasive species were observed. No drainage ditches or other waterbodies were identified within or adjacent to the site. No qualifying species of any European sites within 15 km of the proposed development were recorded during the site visit.

Site walkovers indicate that the site is a slight dome shape with elevations initially increasing from the southern edge of the field access track to a rounded peak c. 60m south of the access track and decreasing again in all directions. Lands immediately north of the access track are gently sloping upwards to an earth bank. Evidence suggests that remediation works have been limited to capping the site with soil and no other management measures are in place.

The GSI mapviewer indicates that the quaternary sediments at the site are classified as 'Quaternary Sediments: Bedrock outcrop or subcrop'. Tier 2 site investigation indicate the presence of firm light brown sandy gravelly silty clay till. Bedrock beneath the site is found on two different formations. The immediate infilled area is underlain by Cloonagh Limestone Formation. The south portion of the wider site is underlain by the Rockfield Limestone Formation. The GSI mapviewer indicates that the underlying bedrock aquifer as 'Regionally Important Aquifer – Karstified (diffuse)' below the site and 'Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones' to the south of the site. Groundwater vulnerability to contamination is classified as X (Rock near surface) and is surrounded by E (Extreme) Vulnerability.

The EPA mapviewer indicates that the:

- Site is located within the Laune-Main-Dingle Bay catchment (Hydrometric Area 22), Sub catchment Maine\_SC\_010 and river sub-basin Maine\_020. The nearest surface water feature to the site is the Glanshearoon River (EPA code: 22G05), located ca. 617m north-west of the site and flows in a southerly direction.
- The Glanshearoon River has a Water Framework Directive (WFD) status (2013-2018) of 'Moderate' or Q3-4. and is a tributary of the River Maine which feeds into Castlemaine Harbour. The Glanshearoon River travels 1.6km (direct distance from closest point downstream of site) before entering the River Maine just outside the town of Castleisland. The River Maine travels ca. 19km before entering Castlemaine Harbour SAC.
- The site is located within the Castlemaine ground waterbody and has a WFD status (2013-2018) of 'Good' or Q4. The WFD risk projection of the ground waterbody is currently under 'Review' by the EPA.



## 4. TIER 2 AND 3 RISK ASSESSMENT FINDINGS

The Tier 3 Risk Assessment reviewed the findings of the Tier 1 Risk Assessment undertaken by Kerry County Council, the Tier 2 site investigation and Risk Assessment (undertaken by FT) and assessed and determined the overall risk the site may pose to the receiving environment. Based on the potential overall risk of the site on the environment, the Tier 3 Risk Assessment determined appropriate remediation measures for the site.

A site investigation was undertaken in 2019 as part of Tier 2 Risk Assessment and included the following elements:

- 1 No. Geophysical survey (2D resistivity and seismic refraction profiling undertaken by Minerex Geophysics Ltd (MGX))
- 5 No. Trial pit excavations
- Installation and monitoring of 2 No. groundwater boreholes
- Topographical Survey
- Factual reporting

The geophysical survey was undertaken on the 7<sup>th</sup> and 28<sup>th</sup> of March 2019. Trial pits were undertaken on the 31<sup>st</sup> May 2019. Two rounds of groundwater quality monitoring were carried out at the site in July and September 2019. The two boreholes were dry on both occasions. Landfill gas monitoring was undertaken in October 2019. No surface water monitoring was undertaken as part of the Tier 2 assessment due to the distance of the nearest surface water body to the historic landfill area (640m) and no direct connection existing between the two.

The Tier 2 site investigations confirmed that the historic landfill primarily contained mixed, inert waste deposited within a single infill area of 2,192m<sup>2</sup>. The depth of waste from the seismic refraction and 2D-Resistivity surveys estimated an average thickness of 6m. The estimate includes capping or natural fill material on top of the main waste body. An initial volume calculation estimated an interred waste volume of approximately 13,152m<sup>3</sup> at the site.

Groundwater sampling was not undertaken during Tier 2 monitoring due to wells being dry. Although it was not possible to directly determine the chemical characteristics of the underlying groundwater, the presence of waste deposited directly on limestone bedrock does present an inherent risk to groundwater quality.

Tier 2 landfill gas monitoring at the site showed only trace quantities of methane (0.1% v/v) below the trigger value of 1% v/v at both boreholes installed outside the waste footprint.

A Tier 2 risk score of 17% was calculated for surface water linkage which refers to leachate migration through surface water pathway to a surface water receptor.

Based on the findings of the modelling exercises and quantitative risk assessment, the Tier 3 assessment determined that:

- on a regional scale the site does not pose a risk to the groundwater quality of the underlying groundwater body with the site only occupying 0.0015% of the groundwater body area. However, the presence of waste which is potentially in direct contact with underlying groundwater does mean that there is an inherent risk.



The identification of the underlying aquifer as being a regionally important, karstified aquifer also signifies that there is a direct pathway for groundwater and leachate migration downstream from the site. Additionally, the presence of waste may still pose a risk to groundwater quality at a local level.

- there are no potential exceedances on the groundwater quality threshold for ammoniacal nitrogen. The model does not calculate concentrations based on a depleting source; hence the results are conservative.
- the site has a shallow soil cap (maximum 400 mm), therefore it is recommended that a more suitable cap be installed to reduce the infiltration of rainfall to the underlying waste subsequently reduce or eliminate any leachate generation.
- assimilative capacity assessment and mass balance calculations indicate that potential breakout of leachate and discharge to the River Maine is not likely to have an adverse impact on water quality.
- landfill gas will continue to be generated for several years although in minimal quantities.

*For inspection purposes only.  
Consent of copyright owner required for any other use.*



## 5. PROPOSED REMEDIATION WORKS

Engineered capping works are proposed to replace/upgrade the existing shallow cap which has the potential to allow rainfall to reach the interred waste and potentially produce leachate that may subsequently contaminate receiving groundwaters.

The proposed engineered capping and monitoring will:

- Increase the cap thickness to 1.0 m,
- Isolate the waste body from rainfall inputs, and groundwater flows, and
- facilitate passive venting of landfill gas through the proposed cap via a controlled outlet.

### 5.1 Overview

Proposed works for the historic landfill are outlined in Section 5 Remedial Action Plan of the Tier 3 Risk Assessment report. The proposed works comprise of the following elements:

- Engineered cap,
- Subsurface drainage system (on cap),
- Surface drainage system with outfall,
- Barrier system,
- Landfill gas collection system,
- Site access road reinstatement,
- Fencing,
- Groundwater and landfill gas monitoring regime.

For inspection purposes only.  
Consent of copyright owner required for any other use.

The site is currently grazed by cattle, following the completion of proposed remediation works the site will continue to be grazed. The remediation plan is presented in drawing P1767-0201-0001, appended to the Tier 3 Risk Assessment located in Appendix 2 of this report.

### 5.2 Construction Phase

The total extent of the cap is 5725m<sup>2</sup>. The landfill cap shall be designed in accordance with the 'EPA Landfill design manual for non-inert, non-hazardous landfills'. The engineered cap shall comprise:

- 200 mm (1145 m<sup>3</sup>) topsoil, located on (from the surface of the engineered cap down),
- 800 mm (4580m) subsoil located on,
- Surface drainage system will outfalls located on,
- Subsurface drainage system located on,
- 1mm LLDPE located on,
- Gas collection geocomposite and collection pipework located on,
- Waste.





It is intended to clear the site of vegetation (an area of 5725m<sup>2</sup>) and to regrade the site's existing surface (approximately 2863m<sup>3</sup>) in preparation of the installation of the engineered cap. Any additional excavated soil from regrading works will be reused as part of the topsoil and subsoil layer of the proposed engineered cap. The existing farm access track will be left in place with installation of the cap located on top of the track.

The landfill gas collection system will be placed on top of the regraded site surface and shall be comprised of an under-liner gas collection geocomposite or similar approved stone drainage layer. The gas collection layer will accommodate passive venting of landfill gas above the liner as well as the management of below liner leachate breakouts following secondary consolidation or condensate using gravel soakaways. Gas vent stacks if required shall link the gas collection system to the surface of the engineered cap and terminate at least 3.0 m above the surface which will prevent rainfall ingress and the insertion of ignition sources. Biological methane oxidation filters if used shall be excavated into the cap and fenced off. Existing wells on site shall be capped and retained for future monitoring.

The barrier system will be placed on top of the gas collection system. This barrier will also require vertical cut-offs on all boundaries outside the interred waste body (where possible) which will provide a backup measure in the event of lateral landfill gas migration.

The subsurface drainage layer will be placed on top of the cap barrier and below the subsoil layer. This layer will collect any surface runoff which percolates below the surface of the cap. This water will be directed to the surface drainage system. The subsoil layer will be located between the subsurface drainage layer and topsoil layer. The topsoil will form the surface of the engineered cap and will be graded to ensure no localised surface depressions and will be seeded with a robust grassland mix. The surface drainage will be located on the surface of the engineered cap and will be comprised of grassed drains. The surface drainage will collect and direct surface water runoff and subsurface drainage outfall flows onto the adjacent grassed surface where it will percolate through the soil.

The access track (left in place and covered by the engineered cap) will be reinstated on the surface of the engineered cap; placed over a separation membrane and geogrid.

#### 5.2.1 Operational Phase / Post Construction

There will no operational activities associated with this site other than conducting environmental monitoring. This includes no further ground excavations.

Groundwater monitoring shall be carried out at the two existing perimeter wells. In the event that surface water is located, monitoring will be carried out at drainage outfall locations. Monitoring will be undertaken annually in accordance with parameters listed in Table C.2 of the EPA's *Landfill Manuals - Landfill Monitoring, 2<sup>nd</sup> Edition (2003)*. Groundwater and surface water monitoring will be undertaken to monitor the performance of the engineered cap and will include the monitoring of suspended solid levels at perimeter outfalls.

Gas monitoring shall be carried out at the two existing boreholes wells. Gas monitoring will be carried out annually, whilst vertical gas monitoring wells will be allowed to vent passively throughout the year. Gas sampling will be carried out for Methane, Carbon Dioxide, Oxygen, Carbon Monoxide and temperature.

**For the purposes of this AA Screening the unmitigated effects of the proposed works are only being considered. This AA Screening report does not consider measures included to reduce and / or avoid potential significant effects to a European site.**



## 6. STAGE ONE – SCREENING REPORT

### 6.1 Brief Description of the European Sites within 15km of the Development

There are seven European sites within the zone of influence (15 km) of the project (see Figure 6-1). Of these seven European sites, six are SACs and one is an SPAs. Table 6-1 lists these European sites, including their qualifying interests, conservation objectives and known threats to these sites (according to information provided by the NPWS ([www.npws.ie](http://www.npws.ie))). The seven sites are as follows:

- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161) – 2.3km from the historic landfill site
- Lower River Shannon cSAC (002165) - 6.1km from the historic landfill site
- Ballyseedy Wood SAC (002112) - 12.9km from the historic landfill site
- Castlemaine Harbour SAC (000343) - 13.2km from the historic landfill site
- Slieve Mish Mountains cSAC (002185) - 13.3km from the historic landfill site
- Blackwater River (Cork/Waterford) cSAC (002170) - 14.2km from the historic landfill site
- Killarney National Park Macgillicuddy's Reeks and Caragh River Catchment cSAC (000365) - 14.2km from the historic landfill site

#### *Hydrological Link*

The closest waterbody to the site is located ca. 617m away from the historic landfill site. None of the seven European sites are hydrologically connected to the site.

#### *Ground Water link*

None of the seven European sites are located within the same ground waterbody as the historic landfill site.

For inspection purposes only.  
Consent of copyright owner required for any other use.



**Table 6-1: European Sites within the zone of influence**

Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)	To maintain or restore the favourable conservation condition of the Annex I species for which the SPA has been selected (further details available in Appendix 4).  Generic Conservation Objectives available: 21/02/2018 [Version 6]	<ul style="list-style-type: none"> <li>Hen Harrier (<i>Circus cyaneus</i>) [A082]</li> </ul>	<p><i>For inspection purposes only. Consent of copyright owner required for any other use.</i></p> <p><u>High Level (inside site)</u> B Sylviculture, forestry</p> <p><u>High Level (outside site)</u> not applicable</p> <p><u>Medium Level (inside site)</u> C01.03 Peat extraction</p> <p><u>Medium Level (outside site)</u> not applicable</p> <p><u>Low Level (inside site)</u> not applicable</p> <p><u>Low Level (outside site)</u> A09 Irrigation E01.03 Dispersed habitation D01.02 Roads, motorways D01.01 Paths, tracks, cycling tracks</p>	2.9



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
Lower Shannon (002165) River cSAC	<p>To maintain <b>(M)</b> and restore <b>(R)</b> the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected (further details available in Appendix 4).</p> <p>Conservation Objectives available for site: 07 August 2012 [Version 1]</p>	<ul style="list-style-type: none"> <li>• Sandbanks which are slightly covered by sea water all the time [1110] <b>(M)</b></li> <li>• Estuaries [1130] <b>(M)</b></li> <li>• Mudflats and sandflats not covered by seawater at low tide [1140] <b>(M)</b></li> <li>• *Coastal lagoons [1150] <b>(R)</b></li> <li>• Large shallow inlets and bays [1160] <b>(M)</b></li> <li>• Reefs [1170] <b>(M)</b></li> <li>• Perennial vegetation of stony banks [1220] <b>(M)</b></li> <li>• Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] <b>(M)</b></li> <li>• Salicornia and other annuals colonising mud and sand [1310] <b>(M)</b></li> <li>• Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] <b>(R)</b></li> <li>• Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] <b>(R)</b></li> <li>• Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260] <b>(M)</b></li> <li>• Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>) [6410] <b>(M)</b></li> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] * <b>(R)</b></li> </ul>	<p><u>High Level (inside site)</u> not applicable</p> <p><u>High Level (outside site)</u> not applicable</p> <p><u>Medium Level (inside site)</u> A08 Fertilisation E03 Discharges A04 Grazing J02.01.01 Polderisation</p> <p><u>Medium Level (outside site)</u> A08 Fertilisation E01 Urbanised areas, human habitation H04 Air pollution, air-borne pollutants E03 Discharges K02.03 Eutrophication (natural) J02.01.02 Reclamation of land from sea, estuary or marsh</p> <p><u>Low Level (inside site)</u> I01 Invasive non-native species D01.01 Paths, tracks, cycling tracks G01.01 Nautical sports B Sylviculture, forestry F01 Marine and Freshwater Aquaculture</p>	6.1



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
		<ul style="list-style-type: none"> <li>• <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] <b>(R)</b></li> <li>• <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <b>(R)</b></li> <li>• <i>Lampetra planeri</i> (Brook Lamprey) [1096] <b>(M)</b></li> <li>• <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <b>(M)</b></li> <li>• <i>Salmo salar</i> (Salmon) [1106] <b>(R)</b></li> <li>• <i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349] <b>(R)</b></li> <li>• <i>Lutra lutra</i> (Otter) [1355] <b>(R)</b></li> </ul>	<p>E03.01 Disposal of household / recreational facility waste            C01.01.02 Removal of beach materials            C01.03.01 Hand cutting of peat            J02.12.01 Sea defence or coast protection works, tidal barrages            J02.10 Management of aquatic and bank vegetation for drainage purposes</p> <p><u>Low Level (outside site)</u>            not applicable</p>	

For inspection purposes only. Consent of copyright owner required for any other use.



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
Ballyseedy Wood SAC (002112)	<p>To maintain or restore the favourable conservation condition of the Annex I habitat for which the SAC has been selected (further details available in Appendix 4).</p> <p>Generic Conservation Objectives available: 21/02/2018 [Version 6]</p>	<ul style="list-style-type: none"> <li>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) * [91E0]</li> </ul>	<p><u>High Level (inside site)</u> Not applicable</p> <p><u>High Level (outside site)</u> Not applicable</p> <p><u>Medium Level (inside site)</u> I01 Invasive non-native species</p> <p><u>Medium Level (outside site)</u> A04 Grazing</p> <p><u>Low Level (inside site)</u> A04 Grazing</p> <p><u>Low Level (outside site)</u> E01.03 Dispersed habitation</p>	12.9

For inspection purposes only. Consent of copyright owner required for any other use.



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
Castlemaine Harbour (000343) SAC	<p>To maintain <b>(M)</b> and restore <b>(R)</b> the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected (further details available in Appendix 4).</p> <p>Conservation Objectives available for site: 19 July 2011 [Version 2.0]</p>	<ul style="list-style-type: none"> <li>• Estuaries [1130] <b>(M)</b></li> <li>• Mudflats and sandflats not covered by seawater at low tide [1140] <b>(M)</b></li> <li>• Annual vegetation of drift lines [1210] <b>(M)</b></li> <li>• Perennial vegetation of stony banks [1220] <b>(M)</b></li> <li>• Salicornia and other annuals colonising mud and sand [1310] <b>(M)</b></li> <li>• Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] <b>(M)*</b></li> <li>• Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] <b>(M)</b></li> <li>• Embryonic shifting dunes [2110] <b>(M)</b></li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] <b>(M)</b></li> <li>• Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] * <b>(R)</b></li> <li>• Dunes with <i>Salix repens ssp. argentea</i> (<i>Salicion arenariae</i>) [2170] <b>(M)</b></li> <li>• Humid dune slacks [2190] <b>(M)</b></li> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] * <b>(R)</b></li> <li>• <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <b>(M)</b></li> </ul>	<p><u>High Level (inside site)</u>            G01.02 Walking, horseriding and non-motorised vehicles            F01 Marine and Freshwater Aquaculture            J02.01.03 Infilling of ditches, dykes, ponds, pools, marshes or pits</p> <p><u>High Level (outside site)</u>            E01 Urbanised areas, human habitation</p> <p><u>Medium Level (inside site)</u>            G02.08 Camping and caravans            A04 Grazing            I01 Invasive non-native species            F02.03 Leisure fishing</p> <p><u>Medium Level (outside site)</u>            E01.03 Dispersed habitation            A04 Grazing</p> <p><u>Low Level (inside site)</u>            C01.01.02 Removal of beach materials</p> <p><u>Low Level (outside site)</u>            not applicable</p>	13.2



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
		<ul style="list-style-type: none"> <li>• <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <b>(M)</b></li> <li>• <i>Salmo salar</i> (Salmon) [1106] <b>(M)</b></li> <li>• <i>Lutra lutra</i> (Otter) [1355] <b>(R)</b></li> <li>• <i>Petalophyllum ralfsii</i> (Petalwort) [1395] <b>(M)</b></li> </ul> <p style="color: red; text-align: center; font-style: italic;">For inspection purposes only. Consent of copyright owner required for any other use.</p>		





Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
Slieve Mountains (002185)	Mish cSAC To maintain or restore the favourable conservation condition of the Annex I species for which the SAC has been selected (further details available in Appendix 4). Generic Conservation Objectives available: 21/02/2018 [Version 6]	<ul style="list-style-type: none"> <li>Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]</li> <li>European dry heaths [4030]</li> <li>Alpine and Boreal heaths [4060]</li> <li>Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110]</li> <li>Calcareous rocky slopes with chasmophytic vegetation [8210]</li> <li>Siliceous rocky slopes with chasmophytic vegetation [8220]</li> <li><i>Trichomanes speciosum</i> (Killarney Fern) [1421]</li> </ul>	<p><u>High Level (inside site)</u> A04 Grazing</p> <p><u>High Level (outside site)</u> A04 Grazing</p> <p><u>Medium Level (inside site)</u> J01 Fire and fire suppression C01.03 Peat extraction</p> <p><u>Medium Level (outside site)</u> A10 Restructuring agricultural land holding</p> <p><u>Low Level (inside site)</u> G04.01 Military manouvres</p> <p><u>Low Level (outside site)</u> C01.01.01 A08 Fertilisation E01.03 Dispersed habitation C01.03 Peat extraction</p>	13.3

For inspection purposes only. Consent of copyright owner required for any other use.



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
Blackwater River (Cork/Waterford) cSAC (002170)	<p>To maintain <b>(M)</b> and restore <b>(R)</b> the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected (further details available in Appendix 4).</p> <p>Conservation Objectives available for site: 31 July 2012 [Version 1]</p>	<ul style="list-style-type: none"> <li>• Estuaries [1130] <b>(M)</b></li> <li>• Mudflats and sandflats not covered by seawater at low tide [1140] <b>(M)</b></li> <li>• Perennial vegetation of stony banks [1220] <b>(M)</b></li> <li>• Salicornia and other annuals colonising mud and sand [1310] <b>(M)</b></li> <li>• Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] <b>(R)</b></li> <li>• Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] <b>(M)</b></li> <li>• Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260] <b>(M)</b></li> <li>• Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] <b>(R)</b></li> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] * <b>(R)</b></li> <li>• <i>Taxus baccata</i> woods of the British Isles (91J0) <b>(M/R)</b> *</li> <li>• <i>Margaritifera</i> (Freshwater Pearl Mussel) [1029] <b>(R)</b></li> <li>• <i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1092] <b>(M)</b></li> <li>• <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <b>(R)</b></li> </ul>	<p><u>High Level (inside site)</u>            A03 Mowing / cutting of grassland            A04 Grazing            A08 Fertilisation</p> <p><u>High Level (outside site)</u>            A08 Fertilisation            A04 Grazing</p> <p><u>Medium Level (inside site)</u>            I01 Invasive non-native species            F02.02.03 Demersal seining</p> <p><u>Medium Level (outside site)</u>            E02 Industrial or commercial areas            J02.01 Landfill, land reclamation and drying out, general            E01 Urbanised areas, human habitation            I01 Invasive non-native species            B Sylviculture, forestry</p> <p><u>Low Level (inside site)</u>            B Sylviculture, forestry            D01.04 Railway lines, TGV            E03.01 Disposal of household / recreational facility waste            J02.01 Landfill, land reclamation and drying out, general            K01.01 Erosion</p>	14.2



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
		<ul style="list-style-type: none"> <li>• <i>Lampetra planeri</i> (Brook Lamprey) [1096] <b>(M)</b></li> <li>• <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <b>(M)</b></li> <li>• <i>Alosa fallax fallax</i> (Twaite Shad) [1103] <b>(R)</b></li> <li>• <i>Salmo salar</i> (Salmon) [1106] <b>(M)</b></li> <li>• <i>Lutra lutra</i> (Otter) [1355] <b>(R)</b></li> <li>• <i>Trichomanes speciosum</i> (Killarney Fern) [1421] <b>(M)</b></li> </ul> <p style="color: red; transform: rotate(-45deg); opacity: 0.5; font-size: small;">Consent of copyright owner required for any other use.</p>	<p>G01.01 Nautical sports D01.02 Roads, motorways</p> <p><u>Low Level (outside site)</u> C01.01 Sand and gravel extraction G02 Sport and leisure structures</p>	

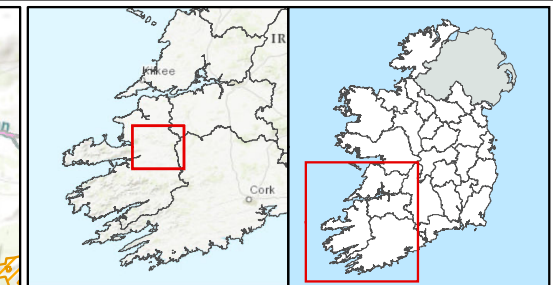
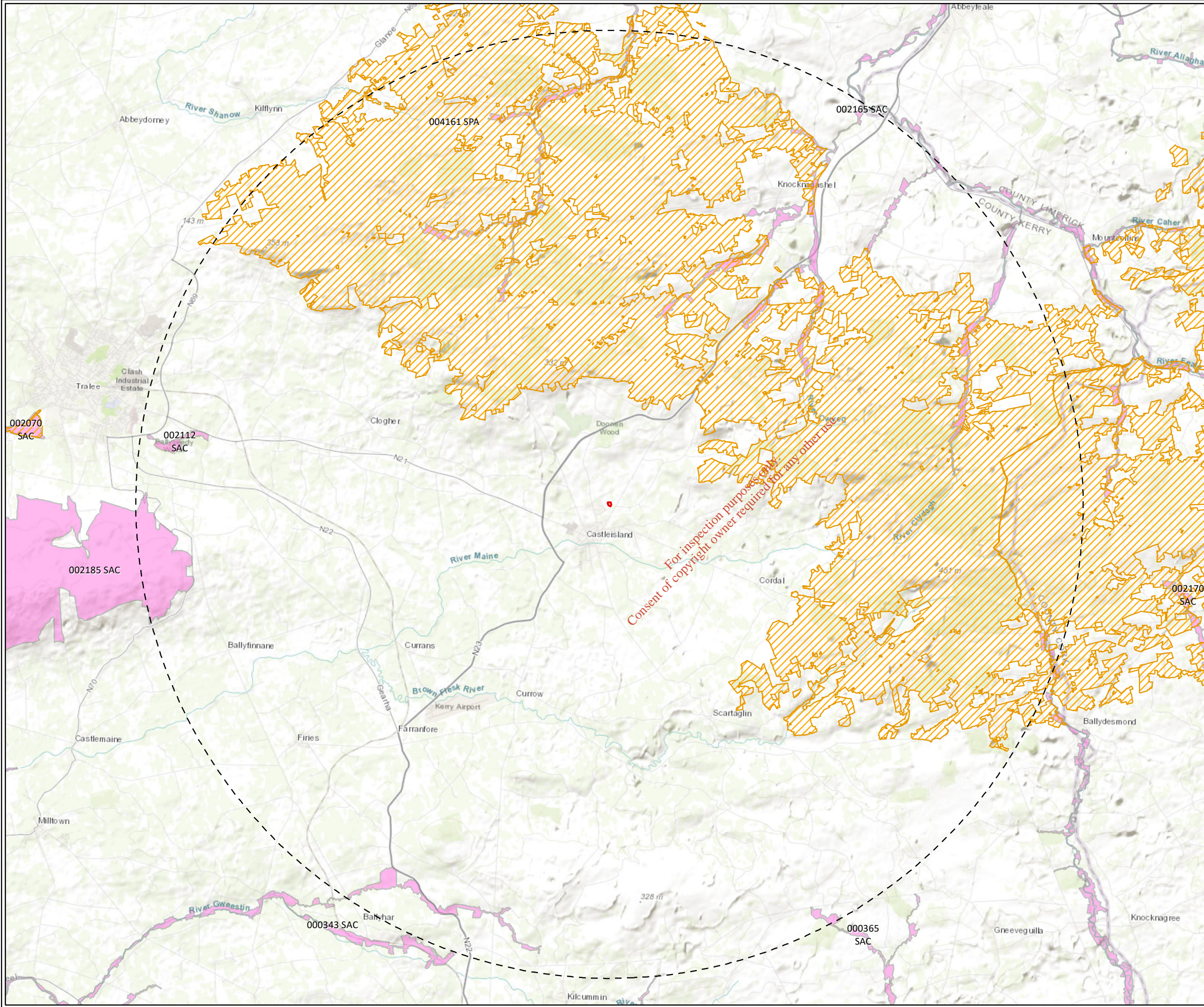


Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
Killarney National Park Macgillicuddy's Reeks and Caragh River Catchment cSAC (000365)	<p>To maintain <b>(M)</b> and restore <b>(R)</b> the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected (further details available in Appendix 4).</p> <p>Conservation Objectives available for site: 23 Oct 2017 [Version 1]</p>	<ul style="list-style-type: none"> <li>• Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110] <b>(R)</b></li> <li>• Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i> [3130] <b>(R)</b></li> <li>• Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260] <b>(M)</b></li> <li>• Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010] <b>(R)</b></li> <li>• European dry heaths [4030] <b>(R)</b></li> <li>• Alpine and Boreal heaths [4060] <b>(R)</b></li> <li>• <i>Juniperus communis</i> formations on heaths or calcareous grasslands [5130] <b>(M)</b></li> <li>• <i>Calaminarian</i> grasslands of the <i>Violetalia calaminariae</i> [6130] <b>(M)</b></li> <li>• Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] <b>(R)</b></li> <li>• Blanket bogs (* if active bog) [7130] <b>(R)</b></li> <li>• Depressions on peat substrates of the <i>Rhynchosporion</i> [7150] <b>(R)</b></li> <li>• Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] <b>(R)</b></li> </ul>	<p><u>High Level (inside site)</u>            A04 Grazing            I01 Invasive non-native species</p> <p><u>High Level (outside site)</u>            not applicable</p> <p><u>Medium Level (inside site)</u>            E01.03 Dispersed habitation            G02.06 Attraction park            E03.01 Disposal of household / recreational facility waste            K01.01 Erosion            C01.03 Peat extraction            B Sylviculture, forestry            J01 Fire and fire suppression</p> <p><u>Medium Level (outside site)</u>            A08 Fertilisation            E01 Urbanised areas, human habitation            B Sylviculture, forestry            A04 Grazing</p> <p><u>Low Level (inside site)</u>            G01.02 Walking, horseriding and non-motorised vehicles            F02.03 Leisure fishing            A03 Mowing / cutting of grassland            A08 Fertilisation</p>	14.2



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
		<ul style="list-style-type: none"> <li>• *Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] <b>(R)</b></li> <li>• <i>Taxus baccata</i> woods of the British Isles [91J0] * <b>(R)</b></li> <li>• <i>Geomalacus maculosus</i> (Kerry Slug) [1024] <b>(M)</b></li> <li>• <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] <b>(R)</b></li> <li>• <i>Euphydryas aurinia</i> (Marsh Fritillary) [1065] <b>(R)</b></li> <li>• <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <b>(M)</b></li> <li>• <i>Lampetra planeri</i> (Brook Lamprey) [1096] <b>(M)</b></li> <li>• <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <b>(M)</b></li> <li>• <i>Salmo salar</i> (Salmon) [1106] <b>(M)</b></li> <li>• <i>Rhinolophus hipposideros</i> (Lesser Horseshoe Bat) [1303] <b>(M)</b></li> <li>• <i>Lutra lutra</i> (Otter) [1355] <b>(M)</b></li> <li>• <i>Trichomanes speciosum</i> (Killarney Fern) [1421] <b>(M)</b></li> <li>• <i>Najas flexilis</i> (Slender Naiad) [1833] <b>(M)</b></li> <li>• <i>Alosa fallax killarnensis</i> (Killarney Shad) [5046] <b>(R)</b></li> </ul>	<p><u>Low Level (outside site)</u>            E01.03 Dispersed habitation            G02.01 Golf course</p>	

\* indicates a priority Annex I habitat.



- Site Boundary
  - 15km Distance from Site Boundary
  - Special Protection Area (SPA)
- Site Code, Site Name, Distance (km)
- 004161, Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA, 2.9
- Special Area of Conservation (SAC)
- Site Code, Site Name, Distance (km)
- 002165, Lower River Shannon SAC, 6.1
  - 002112, Ballyseedy Wood SAC, 12.9
  - 000343, Castlemaine Harbour SAC, 13.2
  - 002185, Slieve Mish Mountains SAC, 13.3
  - 000365, Killarney National Park Macgillycuddy's Reeks And Caragh River Catchment SAC, 14.2
  - 002170, Blackwater River (Cork/Waterford) SAC, 14.2

<b>TITLE:</b>	
Designated European Sites	
<b>PROJECT:</b>	
AA Screening for Castleisland Historic Landfill, Co. Kerry	
<b>FIGURE NO:</b>	
6.1	
<b>CLIENT:</b>	
Kerry County Council	
<b>SCALE:</b>	<b>REVISION:</b>
1:120000	0
<b>DATE:</b>	<b>PAGE SIZE:</b>
27/04/2020	A3

**FEHILY TIMONEY** Cork | Dublin | Carlow  
www.fehilytimoney.ie





## 6.2 Conservation Objectives

According to the Habitat's Directive, the *conservation status of a natural habitat* will be taken as 'favourable' within its biogeographic range when:

- Its natural range and areas it covers within that range are stable or increasing; and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- The conservation status of its typical species is favourable as defined below.

According to the Habitat's Directive, the conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' within its biogeographic range when:

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

The specific conservation objectives for each site are available on [www.npws.ie](http://www.npws.ie). These have been accessed for the sites listed in Table 6-1 above on the 20<sup>th</sup> August 2020.

Generic conservation objectives only were available for:

- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161); published 21/02/2018 [Version 6]
- Ballyseedy Wood SAC (002112); published 21/02/2018 [Version 6]
- Slieve Mish Mountains cSAC (002185); published 21/02/2018 [Version 6]

Detailed site-specific conservation objectives were available for the following sites:

- Lower River Shannon cSAC (002165); published 07 August 2012 [Version 1]
- Castlemaine Harbour SAC (000343); published 19 July 2011 [Version 2.0]
- Blackwater River (Cork/Waterford) cSAC (002170); published 31 July 2012 [Version 1]
- Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365); published 23 Oct 2017 [Version 1]

Conservation objectives and supporting documents for these sites are available from the NPWS through the protected sites search portal at <https://www.npws.ie/protected-sites>.



Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365) is the only European site with a Management Plan (NPWS, 2005).

### 6.3 Potential Cumulative Effects

In considering whether the proposed development, by itself or in combination with other plans and projects, has the potential to affect the conservation objectives of the designated sites within 15km of the proposed development, the following were considered:

- Kerry County Council Planning Enquiry System
- Permitted projects in the vicinity of the development
- Proposed projects in the vicinity of the development

A planning search limited to applications submitted within the townlands overlapping and immediately adjacent to the historic landfill site (Bawnluskaha, Glanshearoon) during the previous 5 years was conducted on 20<sup>th</sup> August 2020.

The vast majority of the proposed and permitted developments are mainly made up of one off residential related developments with a lesser amount of residential/retail change in use and development and farming related developments. Due to the scale and/or type of these developments they will not act cumulatively with the proposed remediation works at the historic landfill site.

The planning search also indicated that a large development has been permitted within a land parcel that is located 100m west of the historic landfill site. The permitted development (ID: 16739 and 181207) is for the retention and completion of 61 residential buildings and a creche. Aerial photography indicates that the majority of buildings have been built. Cumulative effects could occur if construction of the development and remediation works were to overlap. However, the historic landfill is immediately surrounded by agricultural fields and the closest hydrological link to the historic landfill site is ca. 617m, therefore any soil emissions created by the historic landfill and the nearby development will not be able to leave the site as suspended solids in watercourses and will not enter any European sites.

The closest European site to the historic landfill is Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161), which is located ca. 2.3km away. At this distance emissions will not be able to enter the European site and any potential combined noise will not impact the European site. Of the 7 European sites, 5 contain transitory qualifying interests/special conservation interests. Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161) is the only SPA and is solely designated for Hen Harrier. Lower River Shannon cSAC (002165), Castlemaine Harbour SAC (000343) and Blackwater River (Cork/Waterford) cSAC (002170) are designated for aquatic species including Salmon and Otter whilst Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365) is designated for Salmon, Otter and the Lesser Horseshoe Bat. The historic landfill site is comprised and surrounded by low ecological value agricultural land and will not provide breeding or foraging habitat for Hen Harrier. As the site is not hydrologically linked to any waterbody and the closest waterbody is located ca. 617m from the site the historic landfill does not provide habitat for aquatic species. Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365) is located ca. 14.2km from the site. The historical landfill site does not provide roosting habitat for Lesser Horseshoe Bat and is well outside the 2.5km foraging range for the species (NPWS, 2018). There will therefore be no effect to the transitory qualifying interests/special conservation interests of European sites.





Due to the location of the historic landfill site, no hydrological links, distance (2.3km to closest European site) and the site being comprised and surrounded by low ecological value habitat there will be no effect on European sites. There will therefore be no cumulative in combination effects with the permitted development on any European site.

### *Other Historic Landfills*

Within Castleisland historic landfill's 15km buffer there are four European sites. Of these four European sites, one or more is located within the 15km buffer of 6 other historical landfills which require remediation works (see Table 6-2 below for more information). Of these 6 historic landfills, four are located in north County Kerry (Ahascra, Ardfert, Lenamore, Listowel), two are located in mid County Kerry (Rockfield, Tralee) and one is located in south County Kerry (Sneem). The closest historic landfill to Castleisland historic landfill is Tralee historic landfill, located ca. 18km west of Castleisland historic Landfill.

During the proposed remediation works at the Castleisland historic landfill, the soil cap will be left in place, the interred waste body will not be disturbed and any potential leachate entering groundwater will not be added to by works; the site is not linked to any European site by ground waterbody. Also, whilst soil sediment will be produced during the remediation works the site is immediately surrounded by agricultural fields and sediment dispersal will be limited to the historic landfill site and adjacent land parcels (farmed fields); the closest waterbody, Glanshearoon River is located ca. 617m from the site and there are no local links to the waterbody. The closest European site is Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161), which is located ca. 2.3km away and the historic landfill is of low ecological value to wildlife, therefore there will be no effect on the transitory qualifying interests/special conservation interests of European sites. Remediation works at Castleisland historic landfill will not have an effect on any European site so there can therefore be no cumulative in combination effects with any of the historic landfills on any European site.

For inspection purposes only.  
Consent of copyright owner required for any other use.



**Table 6-2: European sites located within 15km of Castleisland Historic Landfill and Six Other Historic Landfills (Requiring Remediation)**

European sites within Castleisland historic landfill's 15km buffer	North Kerry Historical Landfills				Mid Kerry Historic Landfills		South Kerry Historic Landfill
	Ahascra	Ardfert	Lenamore	Listowel	Rockfield	Tralee	Sneem
	Distance between Historic Landfill Sites and European Sites (km)						
Ballyseedy Wood SAC (002112)		11				3.2	
Castlemaine Harbour SAC (000343)					0.4	10.1	
Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365)					2.9		3.1
Killarney National Park SPA (004038)					4		
Lower River Shannon cSAC (002165)	1.5	11.9	6.2	0.008		13.2	
Slieve Mish Mountains cSAC (002185)		9.7			14.6	2.3	
Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)	9.9	9.2		5	12	7.2	

#### 6.4 Screening Assessment Criteria

Throughout this section the line items in *italics* refer to suggested instructions for information to be contained in a screening assessment, and in an appropriate assessment from the guidance document 'Assessment of Plans and Projects significantly affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC', (European Commission, 2001). The standard 'Screening Matrix' and 'Finding of No Significant Effects Report Matrix' in Annex 2 of this guidance document are also followed.

As set out in NPWS guidance (DoEHLG, 2010), the task of establishing whether a plan or project is likely to have an effect on a European site(s) is based on an evaluation using available information and data (e.g., water quality data), supplemented as necessary by local site information and ecological surveys. This results in a determination by the competent authority as to whether there may be a significant effect on the designated site. A precautionary approach is required.

Some examples given in the NPWS guidance (DoEHLG, 2010) of effects that are likely to be significant are:

1. Any effect on an Annex I habitat,
2. A reduction in the area of a habitat of conservation interest in a European site or a reduction in the area of a European site,
3. Direct or indirect damage to the physical quality of the environment (e.g., water quality and supply, soil compaction) in the European site,



4. Serious or ongoing disturbance to species or habitats for which the European site is selected (e.g., increased noise, illumination and human activity),
5. Direct or indirect damage to the size, characteristics or reproductive ability of populations in the European site,
6. Interference with mitigation measures put in place for other plans or projects.

## 6.5 Screening Matrix

Assessment Criteria	Discussion of Potential Effects
<p><i>Describe any likely direct, indirect or secondary impacts [effects] of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Size and scale;</i></li> <li>▪ <i>Land-take;</i></li> <li>▪ <i>Distance from Natura 2000 site or key features of the site;</i></li> <li>▪ <i>Resource requirements;</i></li> <li>▪ <i>Emissions;</i></li> <li>▪ <i>Excavation requirements;</i></li> <li>▪ <i>Transportation requirements;</i></li> <li>▪ <i>Duration of construction, operation etc.;</i></li> <li>▪ <i>Other.</i></li> </ul>	<p><b>Size and scale</b></p> <p><b>Potential effects: None</b></p> <p>Remediation works will be undertaken within a 0.57ha single parcel of land and remediation works will cover the full area of 0.57ha. Prior to remediation works the entire site will be cleared and an existing access track left in place. It is estimated that 2,863m<sup>3</sup> of the existing soil cap will be used for topsoil reprofiling. Remediation works will involve the use of 1,145m<sup>3</sup> topsoil and 4,580m<sup>3</sup> of subsoil spread over a 0.57ha area, a barrier system which will require vertical cut-offs on all boundaries (outside the interred waste) and limited excavation (will not disturb interred waste body) will be required for the installation of landfill gas management elements located on the surface of the cap.</p> <p>The subsurface drainage system will be placed on top of the landfill gas management system and the surface drainage system will be located in the surface of the cap (grassed surface). The existing access track will be reinstated on top of the engineered cap.</p> <p>No effects will occur on any European site due to size and scale.</p> <p><b>Land-take</b></p> <p><b>Potential Effects: None.</b></p> <p>The historic site is not located within any European site and there will therefore be no land-take of any European site.</p> <p><b>Distance from Natura 2000 (European) sites</b></p> <p><b>Potential Effects: None.</b></p> <p>Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161) is the closest European site and is located 2.3km from the historic landfill. There will be no impact on any European site due to distance of proposed remediation works.</p>



Assessment Criteria	Discussion of Potential Effects
	<p><b>Resource requirements</b></p> <p><b>Potential Effects: None</b></p> <p>There will be no resource requirements from any European site as a result of the proposed remediation works.</p> <p><b>Emissions</b></p> <p><b>Potential Effects: None</b></p> <p><i>During Remediation Works</i></p> <p>During remediation works emissions created by the works will be comprised of soil sediment. Soil sediment will be produced during:</p> <ul style="list-style-type: none"> <li>• Clearance of vegetation prior to remediation works (5,725m<sup>2</sup>)</li> <li>• The use of 4,580m<sup>3</sup> of subsoil used to reprofile the site as well 1,145m<sup>3</sup> topsoil which will provide a growing medium for grass.</li> <li>• The installation of the barrier system which will require vertical cut-offs on all boundaries (outside the area of the interred waste body).</li> <li>• During the installation of landfill gas management elements located on the surface of the cap (will not disturb the interred waste body).</li> </ul> <p>The historic landfill site is immediately surrounded by other agricultural fields and there are no hydrological connections between the historic landfill site and any waterbody (drainage channels, drainage ditches, stream/rivers); the closest waterbody is Glanshearoon River located ca. 617m north-west of the site. The soil sediment produced during remediation works will therefore be limited to the historic landfill site and adjacent land parcels (farmed fields).</p> <p>At present leachate is likely to escape from the site and enter groundwater. During remediation works leachate will continue to be produced. The existing capped area will not be removed and there will be no excavation of the interred waste body. Remediation works will therefore not result in the production of additional leachate. The site is not connected to any European site via ground waterbody.</p> <p>Due to the there being no surface water or groundwater links and distance between the historic landfill site and any European site there will be no effect on Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161), Lower River Shannon cSAC (002165), Ballyseedy Wood SAC (002112), Castlemaine Harbour SAC (000343), Slieve Mish Mountains cSAC (002185), Blackwater River (Cork/Waterford) cSAC (002170), Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365).</p>



Assessment Criteria	Discussion of Potential Effects
	<p><i>After Remediation Works</i></p> <p>Following remediation works leachate will continue to be produced and enter groundwater for a time. However, remediation works will prevent rainwater from infiltrating the interred waste body therefore reducing the potential for leachate to be produced.</p> <p>During the establishment of the grass layer (will take several weeks) on the newly engineered cap, surface water runoff containing suspended solids will be produced, however they will be localised and limited to the historic landfill and adjacent land parcels.</p> <p>As there are no surface water or groundwater links between the historic landfill site and any European site there will be no effect on Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161), Lower River Shannon cSAC (002165), Ballyseedy Wood SAC (002112), Castlemaine Harbour SAC (000343), Slieve Mish Mountains cSAC (002185), Blackwater River (Cork/Waterford) cSAC (002170), Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365).</p> <p><b>Excavation requirements</b></p> <p><b>Potential Effects: None</b></p> <p>There will be no excavation requirements from any European site as a result of the proposed development. Excavation works will be limited to the installation of the barrier system (outside the body of interred waste), clearance of site vegetation and installation of above ground elements of the gas collection system. There will also be the placement of 1,145 m<sup>3</sup> of topsoil and 4,580m<sup>3</sup> subsoil, which will be used to reprofile the historic landfill site; filling in any localised depressions. Soil sediment emissions will be limited to the historic landfill site and adjacent land parcels. See above section on 'Emissions' for more information.</p> <p><b>Transportation requirements</b></p> <p><b>Potential Effects: None.</b></p> <p>Site access will not traverse any European Site.</p> <p><b>Duration of Construction and Operation</b></p> <p><b>Potential Effects: None.</b></p> <p>It is anticipated that remediation works will occur over approximately six months. Following remediation works, environmental monitoring will be undertaken annually and will be ongoing for several years.</p>



Assessment Criteria	Discussion of Potential Effects
	<p>Once remediation works are complete and the grass layer has become established, the site will continue to be grazed by livestock. Following remediation works, rain water will no longer be able to reach interred waste and eventually leachate will no longer be created.</p> <p><b>Cumulative Effects</b>  <b>Potential Effects:</b> <i>None.</i></p> <p>The planning search indicated that permission has been granted for the retention and completion of 61 residential buildings and a creche; ca.100m to the west of the historic landfill site. Aerial photography indicates that the majority of buildings have been built. Cumulative effects could occur if construction of the development and remediation works were to overlap.</p> <p>However, the historic landfill is immediately surrounded by agricultural fields and the closest hydrological link to the historic landfill site is ca. 617m, therefore any soil emissions created by the historic landfill and the nearby development will not be able to leave the site as suspended solids in watercourses and will not enter any European sites. Also, the historic landfill site and its surrounds are of low ecological value and will therefore not provide breeding or foraging habitat for the transitory qualifying interests/special conservation interests of any European site. See Section 6.3 for more information.</p> <p>Due to the location of the historic landfill site, no hydrological links, distance (2.3km to closest European site) and the site being comprised and surrounded by low ecological value habitat there will be no effect on European sites. There will therefore be no cumulative in combination effects with the permitted development on any European site.</p> <p><b>Other Historic Landfills</b></p> <p>Within Castleisland historic landfill's 15km buffer there are four European sites. Of these four European sites, one or more is located within the 15km buffer of 6 other historical landfills which require remediation works (see Table 6-2 below for more information). The closest historic landfill to Castleisland historic landfill is Tralee historic landfill, located ca. 18km west of Castleisland historic Landfill.</p> <p>During proposed remediation works at the Castleisland historic landfill, the soil cap will be left in place, the interred waste body will not be disturbed and any potential leachate entering groundwater will not be added to by works; there are no ground waterbody links between Castleisland historic landfill and any European site. Whilst soil sediment will be produced during the remediation works the site is immediately surrounded by agricultural fields and sediment dispersal will be limited to the historic landfill site and adjacent land parcels (farmed fields); the closest waterbody is located ca. 617m from the site and there are no local links to the waterbody.</p>



Assessment Criteria	Discussion of Potential Effects
	<p>The closest European site is Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161), which is located ca. 2.3km away and the historic landfill is of low ecological value to wildlife and will therefore not support any foraging or breeding transitory qualifying interests/special conservation interests of European sites. Remediation works at Castleisland historic landfill will not have an effect on any European site so there can therefore be no cumulative in combination effects with any of the historic landfills on any European site.</p> <p>For more information see Section 6.3.</p>
<p><i>Describe any likely changes to the site arising as a result of:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Reduction of habitat area;</i></li> <li>▪ <i>Disturbance of key species;</i></li> <li>▪ <i>Habitat or species fragmentation;</i></li> <li>▪ <i>Reduction in species density;</i></li> <li>▪ <i>Changes in key indicators of conservation value;</i></li> <li>▪ <i>Climate change.</i></li> </ul>	<p>There will be no direct or indirect reduction in habitat area or habitat fragmentation within any European site as a result of the project due to there being no hydrological links between the historic landfill and distance (2.3km from the closest European site).</p> <p>There will be no predicted effect via disturbance of key species or reduction of key species as a result of the proposed development due to distance (closest European site is 2.3km away), no hydrological links and low ecological value of the historic landfill site and its immediate surroundings.</p> <p>There will be no predicted changes in key indicators of conservation value due to the proposed project due to distance (closest European site is 2.3km away) no hydrological links and low ecological value of the historic landfill site and its immediate surroundings.</p>
<p><i>Describe any likely impacts [effects] on the Natura 2000 site as a whole in terms of:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Interference with the key relationships that define the structure of the site;</i></li> <li>▪ <i>Interference with key relationships that define the function of the site.</i></li> </ul>	<p>There are no potential effects on the key relationships that define the structure or function of any European site considered in this Appropriate Assessment Screening due to distance (closest European site is 2.3km away) no hydrological links and low ecological value of the historic landfill site and its immediate surroundings.</p>
<p><i>Provide indicators of significance as a result of the identification of effects set out above in terms of:</i></p> <ul style="list-style-type: none"> <li>▪ <i>loss,</i></li> <li>▪ <i>fragmentation,</i></li> <li>▪ <i>disruption,</i></li> <li>▪ <i>disturbance,</i></li> </ul>	<p>No effects will occur; therefore, an indicator of significance is not required.</p>



Assessment Criteria	Discussion of Potential Effects
<ul style="list-style-type: none"> <li>change to key elements of the site (e.g., water quality etc.).</li> </ul>	
<p><i>Describe from the above those elements of the project or plan, or combination of elements, where the above impacts [effects] are likely to be significant or where the scale of magnitude of impacts [effects] is not known.</i></p>	<p>No significant effects or effects of unknown scale or magnitude, either alone or in-combination with other projects or plans will occur.</p>

## 6.6 Stage One Screening Conclusion

It is concluded beyond reasonable scientific doubt that there are not likely to be significant effects from the proposed development on the seven European sites identified for consideration (or any other European site), either alone or in combination with other plans or projects.

No significant effects on any of the European Sites within the zone of potential influence are predicted.

Therefore, the following seven European sites have been 'screened out' within the Stage 1: Appropriate Assessment Screening Report:

- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)
- Lower River Shannon cSAC (002165)
- Ballyseedy Wood SAC (002112)
- Castlemaine Harbour SAC (000343)
- Slieve Mish Mountains cSAC (002185)
- Blackwater River (Cork/Waterford) cSAC (002170)
- Killarney National Park Macgillycuddy's Reeks and Caragh River Catchment cSAC (000365)

See Appendix 1 for Findings of No Significant Effects Report.





## 7. REFERENCES

- DoEHLG, 2010. Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin 2009.
- EC (2018). Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission Brussels, 21.11.2018 C (2018) 7621 final.
- EC (2001). Assessment of Plans and Projects significantly affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission 2001.
- EPA (2003). Landfill Manuals - Landfill Monitoring, 2<sup>nd</sup> Edition. Environmental Protection Agency, Ireland.
- Fossitt (2000). A Guide to Habitats in Ireland. The Heritage Council, Ireland.
- Kerry County Council (2018). Killarney Municipal District Local Area Plan 2018-2024. Kerry County Council, Ireland.
- Kerry County Council (2015). Kerry County Council Development Plan 2015-2021. Kerry County Council, Ireland.
- NPWS (2018) Conservation objectives supporting document – lesser horseshoe bat (*Rhinolophus hipposideros*) Version 1. Conservation Objectives Supporting Document Series. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland.
- NPWS (2018). Conservation objectives for Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA [004161]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018). Conservation objectives for Ballyseedy Wood SAC [002112]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018). Conservation objectives for Slieve Mish Mountains SAC [002185]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2017). Conservation Objectives: Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC 000365. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2012). Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2012). Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2011). Conservation Objectives: Castlemaine Harbour SAC 000343 Castlemaine Harbour SPA 004029) Version 2.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2005). Management Plan for Killarney National Park 2005-2009. The National Parks & Wildlife Service Department of the Environment, Heritage & Local Government.