

Environmental Impact Assessment Screening For Barnagh Station House

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1. Executive Summary

Having considered the proposal in line with the guidance referenced in the bibliography, there is no requirement for EIA. Having regard to the characteristics of the proposal, the location of the proposed works, and the scale of the proposed development, significant impacts on the environment are not anticipated. In general, all potential impacts relate to the construction stage (during which a CEMP will be employed) and potential impacts relating to the operational stage are positive.

It is recommended that clearing of vegetation be carried out outside of the bird nesting season (1st March - 31st August) and that a bat survey be carried out pre-works.

An Appropriate Assessment Screening report prepared in line with Article 6 of the Habitats Directive concluded there would be no significant impacts on any Natura 2000 sites.

2. Introduction

Rory Dalton was appointed by Limerick County Council to undertake an Environment Impact Assessment Report Screening for the proposed works to be carried out at the Barnagh Station House. Barnagh is a townland in the South West of County Limerick, situated approx 6km from Newcastle West. The Station House is located at R 22402 30345, at the intersection between the railway line and the main road. The works proposed aim to refurbish the building and immediate surrounding area of the site to create a space that can be utilised users of the Great Southern Greenway.

3. Legislative Context

EIA is a procedure required under the terms of European Union Directives 85/337/EEC and 97/11/EC on assessment of the effects of certain public and private projects on the environment. Article 2 of the Directives requires that *“Member States shall adopt all measures necessary to ensure that, before consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects.”* Article 8 then requires that *“The results of consultations and information gathered pursuant to [the EIA procedure] must be taken into consideration in the development consent procedure”*

The requirements for screening are contained in Article 4 of Directive 97/11/EC. Article 4(1) requires that *“...projects listed in Annex I shall be made subject to an assessment...”*. EIA is therefore mandatory for the categories of projects listed in Annex I and Member States’ legislation must provide for this. The Annex I list defines about 21 categories of projects for which EIA is mandatory. Screening of these projects must lead to a “yes” decision that EIA is required. Article 4(2) requires that for *“...projects listed in Annex II, the Member States shall determine through (a) a case-by-case examination, or (b) thresholds and criteria set by the Member State”*

In this case, the project type is listed in Annex II and is being dealt with it in a case-by-case examination.

4. Brief Description of the Sites and Proposed works

3.1 Site Description and Location

Barnagh is a townland in the South West of County Limerick, situated approx 6km from Newcastle West. The Station House is located at R 22402 30345, at the intersection between the railway line and the main road.

The building was once a stop along the Great Southern Railway's Limerick to Tralee line, which is also known as the 'North Kerry Line'. In 1880 the line from Limerick to Barnagh and onto Tralee opened providing a link for the transport of both passengers and goods. The North Kerry Line ceased to carry passengers in 1963, however the line continued to carry goods traffic until 1977. The tracks of the Limerick to Tralee line were finally removed in 1988. After this the building fell in to disrepair.

The Great Southern Greenway is a 39 km walking and cycle way that runs along the old railway line connecting the towns of Rathkeale, Newcastle West and Abbeyfeale. It was a welcomed recreational development in the area and an important amenity for locals and visitors alike.

3.2 Proposed Works

. The proposed works aim to renovate the building to a structurally sound state and sealed against the wind and rain. It is proposed that an architect prepare a measured survey and strategy for repair of the structure. Initial works will involve clearing the site of debris and foliage, reducing the ground and floor levels and installing a new roof structure on the two story section of the building and a canopy to the platform. Additional works would also gather and dispose of rainwater. A significant allocation will be made to repoint and repair the limestone and brick masonry walls arches, openings and chimneys. The foregoing works would have the objectives of stabilizing the building and improving weather tightness. The external joinery, windows and doors, will be upgraded to secure the building from the elements as well as intruders. The area of the platform directly to the south of the station will be upgraded/ repaired to permit its use as an informal bench on the greenway. Additional, optional works have been noted that would render the station fully renovated and in a "turn-key" condition ready for occupation/use either as a studio/apartment/retail unit or a combination of same.

5. EIA Screening Checklist

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
1. Will construction, operation or decommissioning of the Project involve actions which will cause physical changes in the locality (topography, land use, changes in water-bodies, etc)?	Essentially no; there are areas that will be changed, for example the removal of low value habitat for the playground to be built, however these changes are minor and will not cause negative physical changes to the environment. The rest of the re-surfacing and paving is to be carried out on concrete and gravel surfaces.	No, the majority of surfaces to be paved are pre-existing hardstand surfaces. No changes in waterbodies, topography or land use are foreseen. The minor change in land use from a derelict building to a functional building is a positive change
2. Will construction or operation of the Project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply?	Yes Construction phase: Materials (cement, tarmac, gravel stone) and energy (diesel) for construction. Operational Phase: The usual use of resources such as electricity and water	No These resources are not in short supply.
3. Will the Project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?	Construction phase - Yes: Cement, fuels and lubricants Operational phase - No	No A well planned and implemented CEMP utilizing best practices and standard operating procedure will be put in place.

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
4. Will the Project produce solid wastes during construction or operation?	Construction phase - Yes: Rubble will be produced as well as waste typical of a house-sized building site Operational phase - No	No Rubble may be used to fill areas as needed, the rest of the waste will be managed by a licensed waste disposal company
5. Will the Project release pollutants or any hazardous, toxic or noxious substances to air?	Construction phase - Yes: Exhaust fumes from the machinery will be slightly elevated from normal levels Operational phase - No: As normal	No Exhaust fumes from the machinery will only be slightly elevated from normal levels. Most of the work will be carried out by tradesmen rather than heavy machinery
6. Will the Project cause noise and vibration or release of light, heat energy or electromagnetic radiation?	Construction phase - Yes: Machinery will cause noise and vibration. Operational phase - No	No Noise and vibration will not be far above existing levels, and the machinery being used will be relatively small consisting of regular sized gravel trucks and delivery trucks, 3 or 5 tonne dumper, small to medium excavator etc. Machinery will mostly be used for the preparatory site clearance and earthworks; most of the work will be carried out by tradesmen rather than heavy machinery

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
<p>7. Will the Project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?</p>	<p>Construction phase - Yes: There is the risk of suspended solids (dust from rubble, mud, cement) or fuel/lubricant spills entering the drainage ditches during times of heavy rain</p> <p>Operational phase - No</p>	<p>No</p> <p>A well planned and implemented CEMP utilizing best practices and standard operating procedures will negate any issues. During the field visit, there was no standing or flowing water on or adjacent to the site. According to EPA river network, the nearest stream within the catchment is almost 1km away (there is a stream 300m to the west but it is over the brow of a hill and hence in another catchment</p>
<p>8. Will there be any risk of accidents during construction or operation of the Project which could affect human health or the environment?</p>	<p>Construction phase - Yes: As with any construction site there are risks involved for the workers and for the environment by way of accidents</p> <p>Operational phase - No The building is currently in a dilapidated state and improvements to it's state would make it less likely to cause injury</p>	<p>No</p> <p>All workers are aware of the dangers of working on a building site, they are used of working on sites and have completed their SafePass. Potential for accidents are further reduced by the CEMP; this applies to the safety of both the workers and the environment. Additionally the sections of the site which are being worked on will be fenced off to the public currently. Additionally, The building is currently in a dilapidated state and improvements to it's state would make it less likely to cause injury</p>

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
9. Will the Project result in social changes, for example, in demography, traditional lifestyles, employment?	Yes: There will be minor social changes - all of them positive. The works will improve the operation of the Greenway by providing facilities for users along the route while also providing amenities for locals in the area. Positive developments along the greenway could also potentially be a boost for business owners in the area as the developed site would bring a greater volume of visitors to the area.	No Only positive changes as previously explained
10. Are there any other factors which should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?	No There are no consequential developments anticipated from this project. There are no anticipated cumulative impacts with planned activities in the locality. There are no cumulative impacts with existing activities in the locality	No No significant impact in this regard

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
11. Are there any areas on or around the location which are protected under international or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the project?	Yes There are three Natura 2000 sites within 15km to the works area. The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161), is 80m from the site. The Lower River Shannon SAC (002165) is over 6km from the site at its closest, however it is not hydrologically connected as the site is within another catchment.	No An Appropriate Assessment Screening has been carried out which addresses this issue. In summary, the small and localized scale of the works coupled with the distance from the protected sites promises no protected sites being affected.
12. Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other waterbodies, the coastal zone, mountains, forests or woodlands, which could be affected by the project?	No The surrounding area is mainly upland agricultural grassland, with some farm yards and houses, and sitka spruce plantation. The closest watercourse is a small first order stream which is one of the headwaters of the Arra, itself a tributary of the Deel; this watercourse is over 1km away	No Surrounding habitats are of low value ecologically. Small first order stream is over 1km away across land
13. Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the project?	The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161) is designated for hen harrier	No An Appropriate assessment screening concluded that it would not

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
14. Are there any inland, coastal, marine or underground waters on or around the location which could be affected by the project?	No	No
15. Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?	No, except for the building itself which will be improved by the project. Other than that the area is sucked away in a topographical dip.	No, only a positive one
16. Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the project?	Yes The proposed works will be completed on the Newcastle West to Abbeyfeale portion of the Great Southern Greenway. The works will improve this section of the route	No The proposal is designed to enhance the area for cyclists and walkers alike.
17. Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	No	No
18. Is the project in a location where it is likely to be highly visible to many people?	Yes The proposed works will be visible, but not highly visible. Works are tucked away in a dip in the topography and are well screened from the general public. Users of the greenway will see the project.	No The proposed development is not expected to have a significant visual impact other than a positive one as a result of the derelict buildings being repaired to a high standard.

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
19. Are there any areas or features of historic or cultural importance on or around the location which could be affected by the project?	Yes The Baragh Station House itself is a building of special interest. It is registered under the category of Architectural . Limerick City and County Council engaged Architectural Conservation Professionals to carry out a Building Conservation Inspection and Order of Magnitude Cost Report on the station house	No Other than the Station House there are no previously identified monuments located within, or in the immediate area of the subject development lands.
20. Is the project located in a previously undeveloped area where there will be loss of greenfield land?	No The building and works footprint have been developed in the past, therefore there would be no loss of greenfield land. Additionally sections of the land involved in the proposal has been previously sealed with concrete and gravel.	No significant impact

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
21. Are there existing land uses on or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying which could be affected by the project?	Yes There are a number of land uses around the location. These include rural residential premises, however these are largely screened off from the project due to the land topography in combination with the embankment of the N21. Agriculture and forestry exist nearby	No The proposal will provide local residents additional improved recreational activities. Agricultural land and forestry will not be affected due to the contained nature of the works.
22. Are there any plans for future land uses on or around the location which could be affected by the project?	Not at the time of this proposal	No The project aims to have a minimum effect on surrounding areas. Furthermore all development will be compatible with future development objectives e.g. sustainable transport.
23. Are there any areas on or around the location which are densely populated or built-up, which could be affected by the project?	Yes there are houses but the area is not densely populated	No The proposal is designed and intended to enhance the local land use and to positively impact the lives of locals
24. Are there any areas on or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, which could be affected by the project?	No It is a rural setting and is relatively isolated	No The proposal is designed and intended to enhance the local land use and to positively impact the lives of locals

Questions to be considered	Yes/No Brief explanation	Is this likely to result in a significant effect? Yes/No/? – Why?
25. Are there any areas on or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?	No	No The project is not of the scale that nearby resources could be affected
26. Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the project?	No	No The project is not of the scale that nearby resources could be affected
27. Is the project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the project to present environmental problems?	There have been landslides near Rooska in the past which blocked the road, however that area was of a much steeper gradient and so a similar outcome here is unlikely	No

6. Annex III Screening Selection Criteria

Article 4(3) of Directive 97/11/EC requires that Competent Authorities must take into account the selection criteria set out in Annex III of the Directive when making screening decisions on a case-by-case basis and when setting thresholds and criteria for projects requiring EIA. The criteria are set out under three headings as follows:

1. Characteristics of Projects

The characteristics of projects must be considered having regard, in particular, to:

- the size of the project,
- the cumulation with other projects,
- the use of natural resources,
- the production of waste,
- pollution and nuisances,
- the risk of accidents, having regard in particular to substances or technologies used.

2. Location of Projects

The environmental sensitivity of geographical areas likely to be affected by projects must be considered, having regard, in particular, to:

- the existing land use,
- the relative abundance, quality and regenerative capacity of natural resources in the area,
- the absorption capacity of the natural environment, paying particular attention to the following areas:
 - wetlands;
 - coastal zones;
 - mountain and forest areas;
 - nature reserves and parks;
 - areas classified or protected under Member States' legislation;
 - special protection areas designated by Member States pursuant to Directive 79/409/EEC and 92/43/EEC;
 - areas in which the environmental quality standards laid down in Community legislation have already been exceeded;
 - densely populated areas;
 - landscapes of historical, cultural or archaeological significance.

3. Characteristics of the Potential Impact

The potential significant effects of projects must be considered in relation to criteria set out under 1 and 2 above, and having regard in particular to:

- the extent of the impact (geographical area and size of the affected population),
- the transfrontier nature of the impact,
- the magnitude and complexity of the impact,
- the probability of the impact,
- the duration, frequency and reversibility of the impact.

5.1 Characteristics of Project

5.1.1 The size of the project

The proposed development is over a small area and is centred at approximately R 22402 30345, at the intersection between the railway line and the main road. There is a yard and platform which has become partially overgrown with a light covering of grasses and typical bare ground colonisers. Regarding the Station House itself, it is to be refurbished for commercial and/or community use.

5.1.2 The cumulation with other projects

It is not envisaged that this project will, in cumulation with any other project typical of the area, have effects on the environment.

5.1.3 The use of natural resources

The major use of natural resources associated with the proposal is in the form of construction material. Stone/brick, gravel, tar, cement, timber and water will constitute the main components of what will be used for the build. Fuel and lubricants will be used in the machinery. During the operational phase, the project will only be using resources such as electricity and water. None of these natural resources are in short supply and the amounts to be used are expected to be small.

5.1.4 The production of waste

Waste production from the proposal will be most mainly during the construction phase. It will consist of rubble and spoil from excavation, off-cuts of wood, slate bricks etc. Also likely to be produced onsite are protective wrapping and packaging from elements such as lighting, signage, other deliveries, workers lunches etc. The production of waste is not likely to cause significant impacts. Waste will be disposed of in licenced facilities. Rubble may be used as fill onsite. As of the time of writing (October 2020) there are no plans for toilet facilities. Bins and bin disposal will be taken care of by Limerick County Council

5.1.5 Pollution and nuisances

In a project such as this there is the capacity for pollution, mainly through fuel or other on-site chemical being spilled either in-situ or becoming incident on a water body. There is also the capacity for suspended solids to become incident on a water body. There are stipulations within the CEMP that negate such issues. There is a certain nuisance to business and daily life while works are going on, however the location of the proposed works is rural and will not affect the operations locally. Although the Newcastle West to Abbeyfeale portion of the Greenway may be affected during the development, this disruption should be short lived with numerous benefits resulting from the upgraded works.

This is a well intended proposal, it is well supported and the nuisance will be short lived, therefore nuisance is not a significant issue. There will be no additional pollution or nuisance generated during the operational phase.

In all, the potential for significant impacts arising from pollution and nuisance is low.

5.1.6 The risk of accidents

Risks of accidents from the operational phase of the works will be the same as any other groundwork/landscaping site. All workers are aware of the dangers of working on a building site, they are used of working on sites and have completed their SafePass. Potential for accidents are further reduced by the CEMP; this applies to the safety of both the workers and the environment. Additionally the sections of the site which are being worked on will be fenced off to the public. The building is currently in a dilapidated state and improvements to it's state would make it less likely to cause injury

5.2 Location of Project

5.2.1 The existing land use

The existing land use of the proposal serves as a derelict site not utilised by the public. The Greenway runs in front of the Station House but other than this the land of the proposed site is not currently in use.

The current proposal will not cause negative impacts to the existing land use but rather will increase the attractiveness of the area, while also improving the Great Southern Greenway route.

5.2.2 The relative abundance, quality and regenerative capacity of natural resources in the area

The footprint and proposed works are typical of an old building and grounds. The majority of surfaces to be paved are pre-existing hardstand surfaces (Fossitt Code BL3) which is abundant in the wider area and is of “lower quality local importance” according to Nairn and Fossitt 2004 classification.

5.2.3 The absorption capacity of the natural environment

The amount of material what will require absorption will be very small, typical of the building of a house or refurbishment of an old house, and as such, the absorption capacity of the local environment will be plenty for the proposed project.

5.3 Characteristics of the Potential Impact

In general, all potential impacts relate to the construction stage (during which a CEMP will be employed), potential impacts relating to the operational stage are generally positive.

5.3.1 Human Beings	
The extent of the impact (geographical area and size of the affected population)	<p>The site location is in a rural setting and therefore should not have any major impact on the area or immediate population. The building is located on the Great Southern Greenway, where it intersects the N21 main road from Newcastle West to Abbeyfeale. The site is nestled between the embankment of the N21 to the north and a steep natural incline to the south and as such is sheltered from view.</p> <p>In terms of the operational stage of the proposal, the geographical area of the affected population will be large in that locals and visitors will gain a positive experience from the project.</p>
The magnitude and complexity of the impact	<p>The impact will be minimal. There will be no traffic issue. There may potentially be some minor airborne dust and noise from the building site. However in magnitude the impact is small with the outcome of the works providing improved amenities for the area.</p>
The probability of the impact	Almost certain
The duration, frequency and reversibility of the impact	As long as the works will go on estimated 2-4 months
Requirement for EIA	No

5.3.2 Biodiversity and Water

The extent of the impact (geographical area and size of the affected population)	Approximately 1 hectare. The footprint and proposed works are typical of an old building and grounds. The majority of surfaces to be paved are pre-existing hardstand surfaces (Fossitt code BL3) which is abundant in the wider area and is of “lower quality local importance” according to Nairn and Fossitt 2004 classification. Some small bushes may need to be removed, and in line with best practice guidelines, this should be outside of the bird nesting season (1 st March - 31 st August) and that a bat survey be carried out pre-works.
The magnitude and complexity of the impact	Small magnitude and straight-forward
The probability of the impact	Definite
The duration, frequency and reversibility of the impact	The impact will happen once, and will likely be of a duration of approx 100-500 years. It is not reversible
Requirement for EIA	No. The habitats impacted are of lower quality local importance and are plentiful in the area. Vegetation will be cut outside of the birds nesting season as is standard practice. The footprint and proposed works are small and mainly on existing hardstand, and all on ground that has been modified by humans

5.3.3 Land, Soil, Air and Climate

The extent of the impact (geographical area and size of the affected population)	Land use is essentially remaining as is within the footprint of the proposal. There may be a minor impact on air during the construction phase Climate - no
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The magnitude and complexity of the impact	In terms of air quality, there may be some masonry-type dust generated during the course of the construction phase, along with potential minor increases in exhaust fumes from the building machinery and the traffic management plan. The magnitude of these impacts is very small. The proposed development will improve facilities in the area while also possibly encouraging more environmentally friendly modes of transport through the regeneration of this portion of Greenway. Measures to mitigate possible short term impact during the construction stage will be incorporated into the Environmental Operating Plan for the construction stage.
The probability of the impact	Dependant on parameters such as traffic levels and precipitation (dust)
The duration, frequency and reversibility of the impact	As long as the works will go on (estimated 2-3 months)
Requirement for EIA	No

5.3.4 Material Assets, Heritage and the Landscape

The extent of the impact (geographical area and size of the affected population)	There are no significant negative impacts to material assets or heritage. The Barnagh Station House is a building of historical interest and has been properly inspected by Architectural Conservation Professionals to ensure proper cognisance of best conservation practices is implemented during the refurbishment of the building. Furthermore works on the building will be supervised throughout the project. There may be a slight impact to
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	landscape during the construction phase. All impacts relative to these parameters are positive during the operational phase.
The magnitude and complexity of the impact	The area may, to some, look unsightly during the construction phase
The probability of the impact	Subjective
The duration, frequency and reversibility of the impact	As long as the works will go on (estimated 2-4 months)
Requirement for EIA	No

7. Conclusion

Having considered the proposal in line with the guidance referenced in the bibliography, there is no requirement for EIA. Having regard to the characteristics of the proposal, the location of the proposed works, and the scale of the proposed development, significant impacts on the environment are not anticipated. In general, all potential impacts relate to the construction stage (during which a CEMP will be employed) and potential impacts relating to the operational stage are positive.

It is recommended that clearing of vegetation be carried out outside of the bird nesting season (1st March - 31st August) and that a bat survey be carried out pre-works.

An Appropriate Assessment Screening report prepared in line with Article 6 of the Habitats Directive concluded there would be no significant impacts on any Natura 2000 sites.

8. Bibliography

Environmental Protection Agency (2017) draft "Guidelines on the information to be contained in Environmental Impact Assessment Reports".

Environmental Protection Agency (EPA). 2013. *Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA Processes: Practitioner’s Manual*. EPA STRIVE Programme 2007–2013; Report Series No. 106. EPA, Wexford.

European Commission "Guidance on EIA Screening" June 2001

Fossitt Julie A. "A Guide To Habitats In Ireland" 2000

Nairn, R. and J. Fossitt (2004) The Ecological Impacts of Roads, and an Approach to their Assessment for National Road Schemes. In: J. Davenport and J.L Davenport (eds) *The Effects of Human Transport on Ecosystems: Cars and Planes, Boats and Trains*, 98-114. Dublin. Royal Irish Academy

NPWS Conservation Objectives: Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161) National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014) Site Synopsis: Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161) National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS Conservation Objectives: Askeaton Fen Complex SAC (0002279) National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014) Site Synopsis: Askeaton Fen Complex SAC (0002279) National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS Conservation Objectives: Barrigone SAC (000432) National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014) Site Synopsis: Barrigone SAC (000432) National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Websites

National Parks and Wildlife Services Protected Sites

<https://www.npws.ie/protected-sites>

Buildings of Ireland

<https://www.buildingsofireland.ie/buildings-search/building/21825001/ardagh-railway-station-kilreash-ardagh-co-limerick>