

# **Kerry Slug Derogation Licence Application Supporting Information**

Maughanaclea Renewable  
Energy Development, Co,  
Cork





## DOCUMENT DETAILS

Client: **Maughanaclea Ltd**

Project Title: **Maughanaclea Renewable Energy Development, Co, Cork**

Project Number: **240225**

Document Title: **Kerry Slug Derogation Licence Supporting Information**

Document File Name: **DER license report -F - 2025.12.09 - 240225**

Prepared By: **MKO  
Tuam Road  
Galway  
Ireland  
H91 VW84**



Rev	Status	Date	Author(s)	Approved By
01	Final	09.12.2025	RW	AJ

# Table of Contents

1.	<b>INTRODUCTION.....</b>	<b>2</b>
1.1	Objective of the Proposed Works.....	2
1.2	Statement of Authority.....	2
1.3	Background.....	3
2.	<b>ACTIVITIES TO BE COVERED UNDER DEROGATION .....</b>	<b>6</b>
2.1	Kerry Slug Specific Mitigation Measures.....	6
2.2	Hand Search and Metric Trapping.....	7
2.3	Translocation.....	8
3.	<b>ECOLOGICAL SURVEY AND SITE ASSESSMENT .....</b>	<b>9</b>
3.1	Background.....	9
3.2	Desk Study.....	9
3.3	Methodology.....	9
3.4	Results and Discussion.....	10
3.5	Population Size Class Assessment.....	10
4.	<b>EVIDENCE TO SUPPORT THE DEROGATION TESTS.....</b>	<b>12</b>
4.1	Test 1 – Reasons for Seeking Derogation.....	12
4.2	Test 2 – There is no Satisfactory Alternative.....	13
4.3	Test 3 - Impact of a derogation on Conservation Status.....	13
5.	<b>MONITORING THE IMPACTS OF DEROGATION.....</b>	<b>15</b>
6.	<b>CONCLUSION .....</b>	<b>16</b>
	<b>BIBLIOGRAPHY .....</b>	<b>17</b>

# 1. INTRODUCTION

## 1.1 Objective of the Proposed Works

This report has been provided in support of an application for a derogation licence for disturbance to Kerry Slug (*Geomalacus maculosus*) as required under Regulation 54(2) (A-E) of the European Communities (Birds and Natural Habitats) Regulations. Kerry Slug is protected under Annex II and Annex IV of the European Habitats Directive. Annex IV in particular protects the species from disturbance and habitat destruction. The derogation licence is required to fulfil mitigation measures to translocate the Kerry slug during the construction phase of the Proposed Project which comprises a Proposed Wind Farm. The objective of the proposed works is to facilitate a planning permission application to construct a renewable energy development which will comprise of 14 no. wind turbines with an overall tip height of 169 metres (m), rotor diameter of 133m, and associated infrastructure across two clusters of turbines and will have an estimated installed capacity of 67.2MW.

## 1.2 Statement of Authority

### Supervisors

This derogation licence application is submitted by Pádraig Desmond (B.Sc. Ecology and Environmental Biology), MKO Project Ecologist with over four years' ecological consultancy experience. Pádraig is trained in Kerry Slug surveying under the guidance of mollusc specialist Neansaí O'Donovan (2023) and has worked under licence DER/KERRY SLUG-2025-03. Training included site visits to Knocknamork, Co. Kerry, where slug traps were deployed and Kerry Slug records collected under licence DER/KERRY SLUG-2022-137 (Extension).

Neansaí O'Donovan (B.Sc. Wildlife Biology), MKO Senior Ecologist, has over five years' ecological consultancy experience and extensive Kerry Slug expertise. Neansaí was trained by Dr. Inga Reich (2022), a specialist in the species, and has held multiple Kerry Slug licences (DER/KERRY SLUG-2022-137 (Extension); C106/2024; C012/2025; DER/KERRY SLUG-2025-03). Training included site visits to Oughterard, Co. Galway, where slug traps were deployed and records collected under licence C71/2022.

Viorel Anitei (B.Sc. Environmental Science), MKO Project Ecologist, has over 5 years ecological consultancy experience and has previously undertaken work under Kerry slug licence C182/2024. Viorel has been trained in surveying Kerry Slug by PhD graduate Dr. Inga Reich who specialised in the species. Site visits were carried out in Oughterard, Co. Galway where slug traps were set, and records of Kerry slug collected. All these training works were carried out under licence C71/2022.

### Trainees

- Andrew McCarthy - Andrew is a Graduate Ecologist and holds a B.Sc. in Ecology and Environmental Biology.
- Sara Fissolo - Sara has over 5 years of experience in ecological consultancy and holds a B.Sc. in Ecology and Environmental Biology.
- Stephanie Corkery - Stephanie is an Ecologist with MKO with over 3 years of experience in professional ecological consultancy. Stephanie holds a BSc. in Ecology and Environmental Biology, an MSc. in Marine Biology, and a HDip in Sustainability in Enterprise
- Nora Szijarto - Nora (B.Sc., M.Sc.) has over 2 years of experience in professional ecological consultancy and a M.Sc. in Behaviour, Conservation and Evolution.

All surveyors are suitably qualified ecological practitioners. The survey scope and methodology were supervised by Padraig Desmond and Neansaí O' Donovan.

## 1.3 Background

This report sets out the results of dedicated Kerry slug surveys undertaken in December 2025 within the Proposed Project site to inform the planning application for the Maughanaclea Wind Farm Development.

The Proposed Project consists of a renewable energy development which will comprise 14 no. wind turbines with an overall tip height of 169 metres (m), rotor diameter of 133m, across two clusters of turbines and will have an estimated installed capacity of 67.2MW.

The proposed development will consist of the provision of the following:

1. 14 no. wind turbines with an overall turbine tip height of 169 metres; a rotor blade diameter of 133 metres; and hub height of 102.5 metres, and associated foundations and hard-standing areas;
2. A permanent 110kV substation compound (control building with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, storage containers, wastewater holding tank, site drainage and all ancillary works);
3. Permanent underground electrical (110kV) and communications cabling to the existing Dunmanway 110kV substation in the townland of Ballyhalwick (including joint bays, communication and earth sheath link chambers and all ancillary works along the route);
4. Underground electrical (33kV) and communications cabling connecting the wind turbines and meteorological mast to the on-site substation;
5. 2 no. temporary construction compounds (including site offices, parking and welfare facilities);
6. 4 No. borrow pits;
7. A permanent meteorological mast with a height of 30 metres, security fencing and associated foundation and hard-standing area;
8. Upgrade of existing and provision of new site tracks/roads;
9. Upgrade to existing site entrance; and provision of new site entrance off the R585
10. Forestry Felling;
11. Peat and Spoil Management;
12. Biodiversity Management and Enhancement Plan measures (including establishment of wet heat habitat and native tree planting);
13. Site Drainage;
14. Operational Stage site signage; and,
15. All associated site development and ancillary works.

This application seeks a ten-year planning permission and a 35-year operational life from the date of commissioning of the entire wind farm. A site layout and the EIAR boundary are depicted in Figure 1-1.

The need for the Proposed Project is driven by the following factors:

1. A legal commitment from Ireland to limit greenhouse gas emissions under the Kyoto protocol to reduce global warming;
2. A requirement to increase Ireland's national energy security as set out in Ireland's Transition to a Low Carbon Energy Future 2015-2030.
3. A requirement to diversify Ireland's energy sources, with a view to achievement of national renewable energy targets and an avoidance of significant fines from the EU (the EU Renewables Directive);

4. *Climate Action Plan 2025 which aims to ensure that Ireland achieves its legally binding target (the Climate Action and Low Carbon Development (Amendment) Act 2021) of net-zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030;*
5. *Increasing energy price stability in Ireland through reducing an over reliance on imported fossil fuels;*
6. *Provision of cost-effective power production for Ireland which would deliver local benefits; and*
7. *To facilitate the Government in meeting its ambitious 80% renewable energy target by 2030.*



- Map Legend**
- █ EIAR Site Boundary
  - Proposed Turbine Locations
  - █ Proposed New Roads
  - █ Proposed Hardstands
  - █ Upgrades to Existing Roads
  - █ Temporary Construction Compounds
  - █ Proposed Borrow Pits
  - █ Proposed Peat and Spoil Management Areas
  - █ Proposed Security Compounds and Cabins
  - █ Proposed Met Mast Location
  - █ Proposed 110kV Onsite Substation
- Biodiversity Management Enhancement Areas**
- ▨ Heatland Enhancmnet
  - ▨ Native Woodland Planting

Spatial Reference  
 Name: IRENET95 Irish Transverse Mercator  
 Datum: IRENET95  
 Projection: Transverse Mercator



SITE LOCATION - NOT TO SCALE

Drawing Title		
<b>Proposed Wind Farm</b>		
Project Title		
<b>Maughanaclea Renewable Energy Development</b>		
Project No.	Drawing No.	Scale
240225	1-1	1:18,000
Drawn By	Checked By	Date
CF	RK	09/12/2025



© Ordnance Survey Ireland. All rights reserved. Licence number CYAL50267517

Microsoft, Vantor

## 2. ACTIVITIES TO BE COVERED UNDER DEROGATION

The derogation licence will cover metric survey trapping and translocation works during the construction stage of the Proposed Project in line with mitigation set out in the EIAR for the Proposed Project. The Proposed Wind Farm site layout is shown in Figure 1-1 above.

### 2.1 Kerry Slug Specific Mitigation Measures

During the construction phase of the Proposed Project, the construction corridor will be kept to a minimum to avoid direct habitat loss for Kerry slug.

Prior to undertaking works in areas of suitable habitat, translocation will be employed to avoid and minimise a direct impact on the species. Translocation to suitable habitat in the surrounding area will be employed to avoid direct loss of individuals.

Monitoring of Kerry Slug in the areas adjacent to the site works will be undertaken to provide a before and after impact assessment. This will ensure that populations remain stable post-construction.

The following measures will be implemented prior to the commencement of construction:

- Known locations of Kerry Slug identified from the pre-commencement survey efforts (methodology set out in Section 2.2 below) will be marked off by an appointed qualified/licenced ecologist. This will help avoid inadvertent encroachment of machinery into known Kerry Slug habitat.
- Pre-commencement surveys in advance of any works will be carried out in areas of suitable Kerry Slug habitat under licence within the Proposed Project footprint by the qualified/licenced ecologist. These will be carried out on a section-by-section basis as the construction works progress within the Site.
- Slugs recorded during surveys will be translocated to similar suitable nearby habitat e.g. if found in conifer plantation then moved to adjacent conifer plantation. These sites will be subject to approval by the NPWS as part of their approval process for the translocation licence.

The following mitigation measures will be implemented during construction:

- The extent of the Proposed Project footprint will be clearly marked to prevent any inadvertent encroachment on Kerry Slug habitat where it is located adjacent to the works areas.
- Where felling is required, tree stumps will be left in place where possible to provide suitable habitat for Kerry slug. Turves and boulders/exposed rock will be stored adjacent to the permitted development footprint where practicable before reinstatement to maintain/create suitable habitat for the species in the vicinity of the works during construction.
- Should Kerry slugs be found in the works areas during the construction phase they will be relocated by the appointed qualified/licenced ecologist to suitable habitat as described above.

There is sufficient evidence that such mitigation measures have been successful elsewhere (O’Hanlon et al. 2017) along with record returns (DER/KERRY SLUG – 2018 – 88).

## 2.2 Hand Search and Metric Trapping

The search will follow the methodology outlined in McDonnell & Gormally (2011), consisting of a hand search and the deployment of metric refuge traps manufactured by De Sangosse (Pont du Casse, France). The surveys will be undertaken in suitable weather conditions, where possible. As per the NRA (2009) guidelines, surveys for Kerry Slug can be completed all year round. It is recommended to conduct surveys at night during damp or humid conditions. Surveys can also be completed during daylight hours on cloudy, damp days. Additionally, searching of nearby trees will be undertaken when collecting the refuge traps.

The search will focus on the following habitats/features within the proposed felling sites, and on grasslands and peatlands within the development footprint:

- Rotting logs/tree stumps in areas of forestry.
- Rocky outcrops and stone walls where present.
- Tree trunks and stumps in areas of forestry.
- Peeling back moss from the tree base to confirm if Kerry slugs are present.

Refuge traps (Plate 2-1) will be deployed in forested areas and rocky outcrops within the permitted areas for felling. The traps will be secured with string and/or rocks and pegs.



Plate 2-1 example of De Sangosse trap

Only trained and licenced personnel will carry out the Kerry slug search, the credentials of whom are listed in Section 1.2 above.

## Translocation

Prior to undertaking works in areas of suitable habitat, translocation of Kerry slugs to suitable habitat in the surrounding area will be employed to avoid any direct negative impact on the species.

Translocation will follow the methodology as set out below:

- In advance of any works, areas of exposed rock, and suitable trees within and adjacent to the Proposed Project footprint will be selected by a qualified and licenced ecologist for the promotion and presence of moss and lichen growth and thus provide suitable feeding habitats for Kerry Slug. The selected rocks (if present) will be painted with a mix of yoghurt (to encourage lichen growth), inoculated with lichens, and some mosses found in the vicinity. These areas will be fenced off using post and rope fencing so that the areas will not be disturbed. These selected replacement habitat areas will be monitored (photos taken yearly for three years) during ongoing/all future surveys as part of post construction monitoring. Results will form part of yearly compliance reporting.
- Search, trapping, and translocation will only occur during suitable weather conditions (wet/humid weather).
- The identification of suitable receiving habitat is critical. Animals found on sandstone will be translocated to sandstone, those found on conifer trees will be located to conifer trees, etc.

### 3. **ECOLOGICAL SURVEY AND SITE ASSESSMENT**

#### 3.1 **Background**

It was the objective of surveys undertaken for the Proposed Project to inform the EIAR assessment.

The survey area is within the Environmental Impact Assessment Report (EIAR) study area for the Proposed Project as shown in Figure 1-1. The habitats selected for survey (study area) are outlined in Figure 3-1. These comprised habitats within or adjacent to the Proposed Wind Farm footprint and deemed suitable to be used by Kerry slug.

All surveys were undertaken in suitable weather conditions and across a range of suitable habitats, including intact heath and peatlands, grasslands, and conifer plantations.

#### 3.2 **Desk Study**

The location of the site is within the range of the Kerry slug distribution in Ireland (Reich et al. 2012) and is situated within a larger landscape which contains suitable habitat for the species.

The closest SAC designated for Kerry Slug is Glengarriff Harbour and Woodland SAC [000090], located approximately 11.4km from the Proposed Project.

The National Biodiversity Data Centre map viewer was reviewed to ascertain whether records for the species are present in the vicinity of the Site. There is one record of Kerry Slug within the eastern portion of the EIAR Site Boundary (Figure 1-1), located >100m east of proposed Turbine T03.

#### 3.3 **Methodology**

Hand search surveys were carried out for Kerry slug on the 5<sup>th</sup> of December 2025 by four ecologists – Andrew McCarthy (BSc.), Nora Szijarto (BSc., MSc.), Sara Fissolo (BSc.) and Stephanie Corkery (BSc., MSc, HDip).

Surveys followed the methodology outlined in McDonnell & Gormally (2011) in relation to hand searching methods. The surveys were undertaken in suitable weather conditions, on an overcast and wet day. As per the NRA (2009) guidelines, surveys for Kerry Slug can be completed all year round.

The survey area is shown in Figure 3-1. The search focused on the following habitats/features within the EIAR Site Boundary:

- Rotting logs/tree stumps in areas of forestry.
- Rocky outcrops in peatland habitats.
- Tree trunks and stumps in areas of forestry and clear-fell.
- Rocks and boulders within areas of recently planted conifer plantation.

There were no uncertainties or limitations associated with the above survey effort.

## 3.4 Results and Discussion

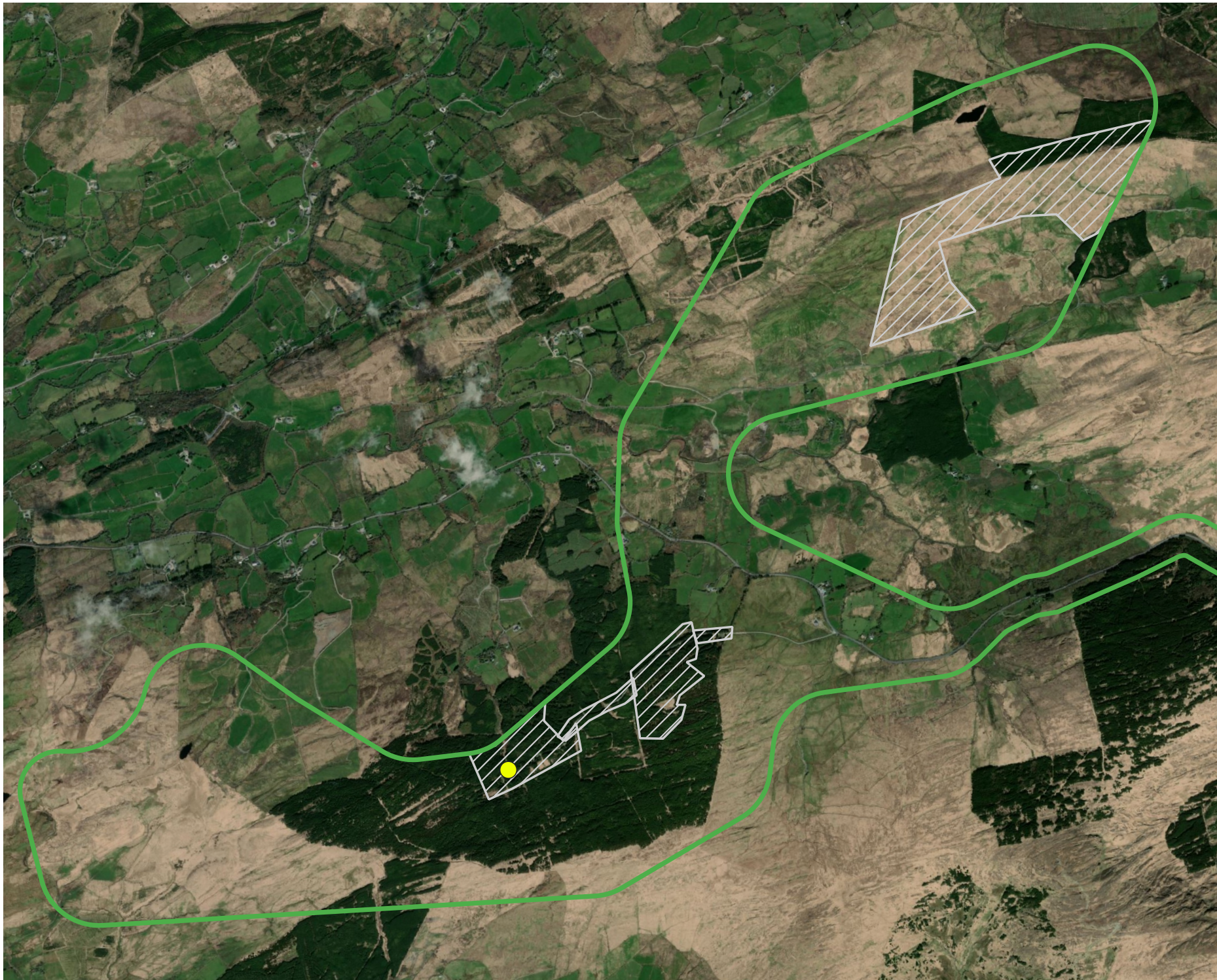
One Kerry slug record was found throughout the survey area and its location is shown on Figure 3-1. The record was found in close proximity to the footprint of the Proposed Project. The species therefore has potential to move throughout suitable habitats within the EIAR Site Boundary.

## 3.5 Population Size Class Assessment

One historic NBDC record is present within the Site. One Kerry slug record was found on the Site during dedicated field surveys.

According to the Article 17 Report (NPWS 2019), the overall conservation status was assessed as Favourable in 2019, with an overall improving trend.

The population at the Site has been assessed as being of County Importance, reflecting the critical role of suitable habitats in southwest Ireland in maintaining genetic connectivity across the species' limited Irish range. This population is not located near any designated sites specifically protected for the species.



Map Legend

- EIA Site Boundary
- Kerry Slug Recording
- Kerry Slug Survey Areas



Drawing Title  
**Kerry Slug Survey Area and Results**

Project Title  
**Maughanaclea Windfarm**

Drawn By	Checked By
<b>AMc</b>	<b>RW</b>
Project No.	Drawing No.
<b>240225</b>	<b>Figure 3-1</b>
Scale	Date
<b>1:25,000</b>	<b>09/12/2025</b>

MKO  
 Planning and  
 Environmental  
 Consultants

4.

## EVIDENCE TO SUPPORT THE DEROGATION TESTS

The NPWS document, *Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland* - National Parks and Wildlife Service Guidance Series 1 (2021), the guidance on *Applications for Regulation 54 Derogations for Annex IV species* by the NPWS (2025), the European Commission Guidance (2011), and the Nature Scot Guidance (2020) were reviewed before undertaking this derogation application.

Article 16 of the Habitats Directive sets out three pre-conditions, all of which must be met before a derogation from the requirements of Article 12 or Article 13 of the Directive can be granted. These pre-conditions are also set out in Regulation 54 of the Regulations.

The preconditions are:

- A reason(s) listed in Regulation 54 (a)-(e) applies
- No satisfactory alternatives exist
- Derogation would not be detrimental to the maintenance of a population(s) at a favourable conservation status.

It is believed that the pre-conditions for granting a derogation licence have been met, as follows:

4.1

### Test 1 – Reasons for Seeking Derogation

Regulation 54(2) (a)–(e) states that a derogation licence may be granted for any of the reasons listed (a) to (e). We are of the opinion that the following reasons apply:

*(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.*

The EC guidance (2011) states (3-32) ‘*Secondly, the ‘overriding’ nature of this public interest must be underlined. This implies that not every form of public interest of a social or economic nature is sufficient, in particular when set against the particular weight of the interests protected by the Directive. Careful balancing of interests is needed here. It is also reasonable to assume that **in most cases, the public interest is likely to be overriding only if it is a long-term interest**: short-term interests that only yield short-term benefits would not be sufficient to outweigh the long-term interest of species conservation.*’

Furthermore, Nature Scot offers advice in determining what might constitute ‘other imperative reasons of overriding public interest’. In the context of this derogation application, the following examples from the Nature Scot guidance would apply:

- “where there is clear and demonstrable direct environmental benefit on a national or international scale;
- where it is shown that there is a vital contribution to strategic economic development or regeneration;
- where failure to proceed would have unacceptable social and/or economic consequences
- where the project is of national importance, or, possibly, regional importance”

The guidance further states that when a development is required to meet or contribute to meeting a specific need, ‘imperative reasons of overriding public interest’ (IROPI) can be applied. The guidance states the following points as activities or developments as suitable:

8. *“Maintaining the health, safety, education or environment (sustainable development, renewable or green energy, green transport);*
9. *complying with national planning policies;*
10. *supporting economic or social development (nationally important infrastructure development projects, employment, regeneration, mineral extraction, housing etc.)”*

The derogation licence is required to comply with mitigation measures as set out in the EIAR for the Proposed Project. The Proposed Project is required to support sustainable development, renewable or green energy (Point 1 above), comply with national planning policies as per Point 2 (set out in Section 2 of this report), and support economic or social developments in the form of a nationally important infrastructure development project. The construction of the wind farm and suitable connection to provide the national grid with renewable energy will have consequences of primary importance for the environment by producing renewable energy and helping Ireland in the reduction of carbon emissions as part of the Climate Action Plan to halve Ireland's emissions by 2030 and reach net zero by no later than 2050.

As per the reasoning provided above, the condition in test 1 has been met.

## 4.2 Test 2 – There is no Satisfactory Alternative

There is no satisfactory alternative to the derogation being applied for.

The ‘do-nothing’ alternative would mean constructing the wind farm without implementing the required Kerry Slug translocation measures, which could result in potential direct negative impacts and loss of individuals from the local population. This is unsatisfactory, as a derogation licence and associated mitigation measures are essential to protect this mobile species, which have the potential to occur within the construction footprint.

The other alternative would be to not construct the planned renewable energy development; however, this would exclude the opportunity to harness renewable energy and remove a vital contribution to the National and European plans to increase the production of renewable energy. Therefore, the only viable and satisfactory alternative is to undertake a search and translocation of Kerry slug to avoid potential impacts on the species and to fulfil the mitigation measures required during construction of the Proposed Project.

On this basis, the condition in test 2 has been met.

## 4.3 Test 3 - Impact of a derogation on Conservation Status

Article 16 of the Habitats Directive states:

*“Annex IV species must be maintained at Favourable Conservation Status or restored to favourable status if this is not the case at present. The net result of granting a derogation licence must be neutral or positive for the species in question.”*

The licence application for surveying and translocation is to ensure that any Kerry slugs within the works area are translocated to a suitable similar nearby habitat to ensure mitigate against negative impacts on the local population during the works and that the species can maintain a favourable conservation status.

The site is located within the core distribution range of the Kerry slug in Ireland (Reich et al. 2012) and is situated within a larger landscape which contains significant suitable habitat for the species. Suitable habitat for the Kerry slug is available within and surrounding the Proposed Project site.

The proposed activities for which the derogation is sought (metric trapping and translocation) will not impact the conservation status of the species, at neither a local scale nor any wider geographic scale. The derogation is sought in order to ensure that there are no impacts on the local population as a result of the Proposed Project.

The population within the study site is not likely to be associated with a SAC designated population. The closest relevant SAC is 11.4km away. This is due to the slow rate of dispersal shown by Kerry slugs (average mobility of 1m per day) and their strong affinity for the microhabitats with which they are associated (McDonnell & Gormally 2011).

As per the reasoning provided above, the condition in test 3 has been met.

5.

## **MONITORING THE IMPACTS OF DEROGATION**

Monitoring of Kerry Slug in the areas adjacent to the site works will be undertaken to provide a before and after impact assessment. This will ensure that populations remain stable post-construction. These surveys will be carried out during optimal weather conditions (mild, damp, overcast and not excessively windy) by suitably qualified professionals. They will follow McDonnell & Gormally (2011) and involve both hand searching and metric refuge trapping and will be carried out within the same locations as the search and translocation areas.

An EU Returns Form and a derogation report will be completed by the applicant and returned to Wildlife Licencing Unit of the NPWS, detailing the results of the monitoring efforts, and search and translocation works, and address any corrective measures that might have been employed in the unlikely event of unforeseen circumstances.

6.

## CONCLUSION

This report details information to support the derogation license application as set out in the guidance on Applications for Regulation 54 Derogations for Annex IV species by the NPWS (2025).

In conclusion, this report supports the application for a derogation license for disturbance to Kerry Slug (*Geomalacus maculosus*) associated with the undertaking of a survey to determine the presence/absence of the species and the translocation program in relation to the Proposed Project. As required as part of the application process, the report addresses the following:

- Explanation as to why the derogation licence sought is the only available option for works and no suitable alternative exists as per Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations.
- Evidence that actions permitted by a derogation licence will not be detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.
- Details of any mitigation measures planned for the species affected by the derogation at the location, along with evidence that such mitigation has been successful elsewhere.
- Evidence to support the derogation tests.
- As much information as possible to allow a decision to be made on this application.

## BIBLIOGRAPHY

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and Directive 2009/147/EC (codified version of Directive 79/409/EEC as amended) (Birds Directive) – transposed into Irish law as European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011).

Johnston, E., Kindermann, G., O’Callaghan, J., Burke, D., McLaughlin, C., Horgan, S., Mc Donnell, R., Williams, C. and Gormally, M., (2017). *Monitoring the EU protected Geomalacus maculosus (Kerry Slug): what are the factors affecting catch returns in open and forested habitats?* (Vol. 32, pp. 95-104). Springer Japan.

McDonnell, R.J. and Gormally, M.J. (2011) *Distribution and population dynamics of the Kerry Slug, Geomalacus maculosus (Arionidae)*. Irish Wildlife Manuals, No. 54. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Biodiversity Data Centre (2025) *Biodiversity Maps*.

NatureScot (2020) *Guidance licensing - Test 1 - Licensable Purpose - Licence in relation to European Protected Species*.

NPWS (2025) Applications for Regulation 54 Derogations for Annex IV species.

NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O’Neill

O’Hanlon, A., Feeney, K., Dockery, P. and Gormally, M.J., 2017. *Quantifying phenotype-environment matching in the protected Kerry spotted slug (Mollusca: Gastropoda) using digital photography: exposure to UV radiation determines cryptic colour morphs*. *Frontiers in zoology*, 14, pp.1-12.

Reich, I, O’Meara, K, Mc Donnell, R.J. and Gormally, M.J. (2012) *An assessment of the use of conifer plantations by the Kerry Slug (Geomalacus maculosus) with reference to the impact of forestry operations*. Irish Wildlife Manuals, No. 64. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.

SEAI (2024) *National Energy Projections 2024*

