NPWS

An tSeirbhís Páirceanna
Náisiúnta agus Fiadhúlra
National Parks and Wildlife
Service

Application for Derogation

Under Regulation 54 & 54A of the

- This form can be used by any individual or Company applying for a derogation under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011 ("the Regulations") **or** any individual applying on behalf of the Minister for Housing, Local Government and Heritage under Regulation 54(A) of the Regulations.

- Note this application form is not for Domestic Dwelling Derogations (bats within private homes) which can be found here > (3D Application Form)

- Please ensure that you answer questions fully in order to avoid delays and/or your application being rejected on the basis that it does not contain sufficient information and detail for the application to be considered further.

- Please read and familiarise yourself with the NPWS Guidance on Applications for Regulation 54 Derogations for Annex IV species: Guidance for Applicants

- Please read and familiarise yourself with the European Commission's Guidance document on the strict protection of animal species of Community interest under the Habitats Directive

- Please also note that the responses to these questions are supplementary to the documentation required for the NPWS to be in a position to consider your application. A complete application should include both the application form and an associated report. Failure to supply either will result in your application being returned and/or refused.

- In circumstances in which a derogation is given on foot of this application, the Applicant is responsible for ensuring compliance with the conditions of any such derogation, even though they may employ another person to act on their behalf. To carry out any activity without, or not in accordance with, a derogation granted under regulation 54 or 54A of the Regulations constitutes a criminal offence, subject to prosecution.

- If you experience any problems filling in this form, please contact the Wildlife Licensing Unit: reg54derogations@npws.gov.ie

- Please note – applications, associated reports and derogations will be published on the NPWS website and/or the Department's Open Data website.

- Where any applicant is applying for a derogation to carry out surveys, please ensure to list all qualified ecologists and trainees under their supervision. See section 1(c) of Part A.

1

Part A: The Applicant - Personal Details

These questions relate to the person responsible for any proposed works and who will be the **Applicant**.

If this application is being submitted on behalf of a third party, please also complete Part B below.

1. (a) Name of Applicant

Title (Mr/Mrs/Miss/Ms/Dr)	Forename(s)	Surname
Dr	Yasmin	Viana Pinto
(b) Company Name, if applicable	Marine and Freshwater Research Centre, Atlantic Technological University	
(c) Address Line 1	ATU Galway City, Old Dublin Road, H91 T8NW, Galway, Ireland	
Address Line 2		
Town		
County		
Eircode		
(d) Contact number		
(e) Email address	[redacted]	
(f) Address where works are to be carried out if different from (b) above.		
Address Line 1		
Address Line 2		
Town		
County		
Eircode		

Details of Person Submitting Application on Behalf of Applicant/Derogation Holder

Information relating to the person (e.g. ecologist) responsible for submitting the application on behalf of the applicant should be entered below:

1. (b) Name of Person/Ecologist

Title (Mr/Mrs/Miss/Ms/Dr)	Forename(s)	Surname
Dr	Yasmin	Viana Pinto
(b) Company Name	Atlantic Technological University	
Address Line 1	ATU Galway City	
Address Line 2	Old Dublin Road,	
Town	Galway	
County	Galway	
Eircode	H91 T8NW	
(c) Contact number	[redacted]	
(d) Email address		
(e) Relationship to Applicant	Post-doctoral Researcher	

For Survey Derogations Only

1. (c) Please Indicate the Names to Appear on the Derogation Along with the Position Held e.g. Supervisor/Trainee

Forename(s)	Surname	Supervisor or Trainee
Sinéad	Murphy	Supervisor, Lecturer
Joanne	O'Brien	Co-Supervisor, Lecturer

2

Part B: Species covered by the Derogation

1. **Species of Animal:** Please indicate which species is/are the subject of the application:

- Bat ☐
- Otter ☐
- Kerry Slug ☐
- Natterjack Toad ☐
- Dolphin ☒
- Whale ☒
- Turtle ☐
- Porpoise ☒

2. Please detail the exact species (scientific name): The species of central interest is the Common Dolphin, *Delphinus delphis*, with other marine mammal species, such as the Bottlenose dolphin (*Tursiops truncatus),* the Harbour Porpoise (*Phocoena phocoena*), the Grey Seal (*Halichoerus grypus*) and Harbour Seal (*Phoca vitulina*), also being covered.
3. Please provide the maximum number of individuals affected.* N/A
4. Please provide the maximum number of breeding or resting sites affected* N/A
5. Please provide the maximum number of eggs to be taken* N/A
6. Please provide the maximum number of eggs to be destroyed* N/A

*If no figures can be provided for the maximum number of individuals, breeding sites, resting places and eggs to be covered by the derogation please provide reasons why.

The Marine Beacon project, funded under the EU Horizon programme, addresses the range and effect of Acoustic Deterrent Devices (ADDs) on Protected, Endangered, and Threatened Species (PETS) and in the soundscape across the North-east Atlantic. This application seeks authorisation to conduct sound propagation trials using high-out Acoustic Deterrent Devices (ADDs), in coastal waters of Galway Bay and Kilrush Marina, with the aim of accurately characterising their spatial extent and estimating their cumulative effects on the soundscape when deployed 'en masse'. Trials will be conducted in the absence of cetaceans

to derive detection ranges for the units and to characterise their impact on the local soundscape.

Justification for Absence of Numerical Estimate: The number of marine mammals that may be exposed cannot be predetermined, as it will depend entirely on the presence and behaviour of animals in the immediate vicinity on the day of operations. Due to the operational characteristics of the devices, a gradual ramp-up of sound output is not feasible. Trials will be conducted during periods when no marine mammals are observed in the vicinity; however, it cannot be ruled out that individuals may approach the area after pre-watch observations have been completed by qualified Marine Mammal Observers (MMOs) and equipment has been deployed. This risk applies to both Annex II and Annex IV marine mammal species.

Trial specific mitigation and MMO operational control measures: To minimise risk to marine mammals, all sound propagation trials will follow a precautionary mitigation protocol consistent with national and international guidance for the management of anthropogenic underwater sound (NPWS, 2014). Prior to the commencement of any trial, a Marine Mammal Observer (MMO) will conduct a systematic visual watch of at least 30 minutes within a 500 m mitigation zone. Trials will not commence until the zone is clear of all marine mammals.

Mitigation measures based on Behaviour and Location: The experimental gear will be deployed in open marine waters where the animals are not confined. Any marine mammal species approaching the acoustic deterrent device (ADD) and exposed to its sound field has an unrestricted escape route and can voluntarily leave the area. Exposure is temporary and non-coercive, mitigating the risk of continuous disturbance or long-term effect on a fixed population. Further, the study does not target a resident population.

Field-trials simulating static gear fishing scenarios: Visual monitoring will continue throughout the trial. The MMO will retain full authority to delay or halt operations immediately if a marine mammal enters the mitigation zone - all equipment can be retrieved immediately.

Operational gear deployments (active commercial fishing/trawling): It is recognised that animals may voluntarily enter the area once the commercial gear has been deployed and the ADDs are active. Because it is not practically feasible to halt commercial towing operations immediately without creating safety risks or damaging fishing gear, mitigation during operational trials depends entirely on confirming that no animals are present prior to ADD deployment (via a 30-minute MMO pre-watch) and maintaining continuous visual monitoring throughout the deployment.

7. **Species of Plant:** Please indicate which species is/are the subject of the application:

- Killarney Fern ☐
- Slender Naiad ☐
- Marsh Saxifrage ☐

8. If you previously received a derogation for any species of animal or plant, please state derogation number and confirm that y

NA

9. ou have made a return to NPWS on the numbers actually affected by that derogation.**Proposed Dates for Activities:** Please indicate the timeframe that you propose to carry out the activities. Dates set by NPWS may differ from dates proposed here. *A derogation will only be issued with a start and end date within a calendar year.*

Start Date:	01/06/2026
End Date:	30/12/2026

Part C: Nature of the Derogation.

1. Please tick which prohibition(s) the application for a derogation relates to:

Regulation 51	
Deliberately capture or kill any specimen of the relevant species in the wild	☐
Deliberately disturb these species particularly during the period of breeding, rearing, hibernation and migration	☒
Deliberately take or destroy eggs of the relevant species in the wild	☐
Damage or destroy a breeding or resting place of such an animal, or	☐

Keep, transport, sell, exchange, offer for sale or offer for exchange any specimen of the relevant species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive.	☐
Regulation 52	
Deliberately pick, collect, cut, uproot or destroy any specimen of these species in the wild, or	☐
Keep, transport, sell, exchange, offer for sale or offer for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 13(1)(b) of the Habitats Directive.	☐

Further information should be provided in the format set out in Part E: Template for Supporting Information

Part D: Derogation Tests

Note: The following <u>summary</u> information must be provided by the applicant in all cases, and will be used to determine if a derogation can be provided. Further information must be provided in the format set out in Part E: Template for Supporting Information

Test 1: Reason for the Derogation

1. Please tick which reason(s) below explains how this application qualifies under Regulation 54(2)(a-e) or Regulation 54A(2)(a-e) of the European Communities (Birds and Natural Habitats) Regulations: Please provide a summary of how the application meets the 3 conditions required to provide a derogation. Note that in all cases additional information must be provided (see Part E).

a.	In the interests of protecting wild flora and fauna and conserving natural habitats **(proceed to 2a)**	☐
b.	To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property **(proceed to 2b)**	☐
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 **(proceed to 2c)**	☐

d.	For the purpose of research and education, of re-populating and re-introducing these species and for the breeding operations necessary for these purposes, including artificial propagation of plants **(proceed to 2d)**	☒
e.	To allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species to the extent specified therein, which are referred to in the First Schedule **(proceed to 2e)**	☐

2a. In the interests of protecting wild flora and fauna and conserving natural habitats:

i) Please state the wild flora, fauna or habitats that require protection and /or conservation.

ii) Please summarise how the interests of protection and conservation of the species/habitat concerned justify affecting another species under strict protection.

2b) To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property:

i) Please summarise the nature of the potential damage, why it is considered “serious” and how this outweighs the conservation interest of the species under strict protection.

2c) 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:

i) Where the reason is for public health and public safety, summarise the evidence provided to support this reason (e.g. documentary evidence of the risk from a chartered structural engineer, tree surgeon, Garda Síochána, qualified health professional etc.)

ii) Where the reason is 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", summarise the nature of the public interest and how this outweighs the conservation interest of the species under strict protection.

2d) For the purpose of research and education, of re-populating and re-introducing these species and for the breeding operations necessary for these purposes, including artificial propagation of plants:

i) Please summarise the objective(s) of the proposed activities making reference to those listed above and how the the purpose of such activities overrides the interests of strict protection of the species. [1]

The primary objective of this research is to generate essential empirical data on the acoustic signatures and propagation characteristics of various Acoustic Deterrent Devices (ADDs)—including conventional, high-output (DDD series), and Targeted Acoustic Startle Technology (TAST). This work falls directly under the purpose of research and education, specifically aimed at filling a critical knowledge gap in marine soundscape management.

While the research is driven by the urgent need to mitigate Common Dolphin (*Delphinus delphis*) bycatch, the trials are designed to characterise how these sound fields interact with the broader marine environment. This includes assessing the "zone of influence" and potential for habitat exclusion for all species protected under Annex II and IV likely to be present in the survey area, such as the Harbour Porpoise (*Phocoena phocoena*), Bottlenose Dolphin (*Tursiops truncatus*), Grey Seal (*Halichoerus grypus*), and Harbour Seal (*Phoca vitulina*). By recording and modelling emissions from non-conventional high-output devices, we will produce the first environmental impact assessment with associated robust soundscape maps that will quantify the cumulative impact of "en masse" deployment, which is currently a major regulatory blind spot.

ADDs are acoustic deterrent devices, employed to mitigate interactions between marine mammals and human activities by emitting controlled acoustic signals designed to discourage animals from approaching defined exclusion zones, such as aquaculture sites or fishing operations. Under Part A of Annex XIII of Regulation (EU) 2019/1241, vessels 12 m or longer are required to deploy acoustic deterrent devices (ADDs) on bottom-set gillnets and entangling nets in designated high-risk areas, including parts of the Baltic Sea and several North-East Atlantic ICES divisions. In ICES sub-area 4 and ICES division 3a, this requirement applies seasonally (1 August–31 October) and is limited to specific static-net configurations, including nets with a total length not exceeding 400 m or large-mesh nets (≥220 mm), reflecting targeted mitigation for cetacean bycatch risk.

The decision to focus on the common dolphin, which is both the target of the conservation measure and afforded strict protection, comes from the need to address bycatch, the most significant ongoing threat to the North-East Atlantic population (National Research Council,

[1] Note that this reason may be appropriate for when research involves surveys that may cause disturbance of species under strict protection. But the sole purpose of the surveys should be for research and education or the other reasons listed above under 1d.

1992; ICES Advice, 2023; ASCOBANS, 2024). Bycatch represents the primary threat to the species at both regional and global scales, and the situation in the Bay of Biscay exemplifies the magnitude of the problem, with numbers of dolphins incidentally captured surpassing all Potential Biological Removal thresholds (ICES Advice, 2023; ASCOBANS, 2024). This level of bycatch has already prompted the implementation of fishery closures and highlights the urgent need for improved and effective mitigation tools. Under the Commission Delegated Regulation (EU) 2025/2593[1], mid-water pelagic trawls and demersal twin trawls operating in the Bay of Biscay are required to use ADDs throughout the year.

Common dolphins are found in high abundance off Ireland and across continental shelf waters of the North-East Atlantic (Murphy et al. 2026), with an estimated 594,293 individuals (CV: 28.2) in the Irish Exclusive Economic Zone during summer 2021 (Paradel et al., 2025). Despite this, incidental capture has been documented both regionally and within Irish fisheries (Murphy et al. 2013), reinforcing the need for targeted mitigation. The magnitude and persistence of bycatch demonstrate a clear mitigation gap, where currently available tools are insufficient to reduce mortality to sustainable levels. High-put devices were initially intended for use with active fishing gear; however, trials have also been conducted using static gear to deal with depredation, for example (Marcalo et al. 2025).

The proposed research aims to address this gap by generating robust empirical data on ADDs noise, including devices operating outside the standard technical specifications defined in Commission Implementing Regulation (EU) 2020/967. Under Article 2(3) of this Regulation, Member States may authorise such devices where their effectiveness in reducing bycatch is demonstrated. In this context, the study will evaluate both conventional mid- and high-output ADDs and alternative approaches such as Targeted Acoustic Startle Technology (TAST; Götz & Janik, 2011), to characterise their acoustic propagation and assess their suitability as safe and effective bycatch-reduction tools. Acoustic propagation modelling of TAST will follow methodologies similar to those previously approved by NPWS under derogation licence DER-CETACEAN-2022 (Cox et al., 2024).

Under the Commission Implementing Regulation (EU) 2020/967, Member States may authorise the use of devices that do not comply with the standard technical specifications, provided that their effectiveness in reducing incidental catches of cetaceans is demonstrated and appropriately documented (European Commission 2020). Field trials assessing the effectiveness of these high-output devices, including DDD-types, were previously conducted in the UK, France, Spain, and Portugal, as examples. The United Kingdom presents

documented evidence of authorisation through explicit regulatory derogation, having specifically authorised high-output devices such as the DDD-03L (MMO, 2022). The Sea Mammal Research Unit (SMRU), a research institution in the same country, also contributed to the evaluation of advanced mitigation approaches such as TAST. Previous research indicates that TAST signals attenuate rapidly and are highly localised, with low duty cycles and short signal duration, thereby minimising the risk of large-scale acoustic propagation and long-term displacement (Götz and Janik, 2011; Cox et al., 2024). The French regulatory landscape underwent a drastic change following interventions by the Conseil d'État, which forced the transition from voluntary recommendations to the strict mandatory use of mitigation devices. In this context, high-output devices such as the STM Devices have become standard and mandatory equipment for pair trawling fleets in the Bay of Biscay, aiming to guarantee a noise exclusion zone compatible with the scale of industrial fishing operations (NOAA, 2025). These measures are a direct response to elevated dolphin mortality, managed through national decrees. Spain has followed a similar approach, with mandatory implementation for specific fleets based on practical necessity (République Française, 2019). Spain has also implemented operational trials and fleet-level application of high-output acoustic deterrent devices in fisheries affected by dolphin depredation and bycatch. Technical reports and pilot studies conducted under initiatives such as MERMACIFRA and CETAMBICION, involving the Instituto Español de Oceanografía (IEO-CSIC), documented the use of high-output deterrent devices, including the DDD series, in purse seine and net fisheries targeting interactions with *Tursiops truncatus* and *Delphinus delphis*. These studies reported that device performance varied according to species behaviour, fishery type, and acoustic characteristics, with higher-output devices generally considered more effective for reducing depredation and cetacean interactions in large-scale fishing operations (Brotons et al., 2008; Buscaino et al., 2009; Izquierdo et al., 2023). Rather than establishing a universal acoustic threshold, the Spanish experience highlights the operational preference for more powerful deterrent systems in situations where conventional low-output pingers may provide insufficient spatial coverage or deterrence range. In Cyprus, a range of models, including the DDD and DiD, are used across both small-scale and large pelagic fisheries (Papageorgiou et al. 2024).

The purpose of these trials overrides strict protection interests on the basis of proportionality and net conservation gain. The most significant threat to Annex II and IV marine mammal species in the North-East Atlantic is not short-term acoustic exposure from ADDs, but lethal bycatch entanglement, and without empirical data on ADD performance, mitigation strategies remain ineffective or risk causing unintended large-scale habitat exclusion. The research design ensures that source levels remain well below established Temporary

Threshold Shift thresholds across all functional hearing groups present, including Very High Frequency cetaceans such as the Harbour Porpoise, Mid-Frequency cetaceans such as Common and Bottlenose Dolphins, and Phocid Carnivores, including Grey and Harbour Seals.

Furthermore, the trials are strictly time-limited and opportunistic in nature, precluding any chronic displacement of animals from their habitat. By specifically modelling acoustic propagation for the most acoustically sensitive species, including the Harbour Porpoise in nearshore habitats, this research provides the scientific foundation necessary to ensure that future en masse deployments do not compromise the favourable conservation status of non-target species. Ultimately, the interests of these protected species are best served by replacing scientific uncertainty with empirical data, enabling the design of acoustic refuges and evidence-based deployment guidelines that safeguard Annex II and IV species from both bycatch and excessive underwater noise. Further details regarding the data collection protocol, the marine mammal species likely to be present in the proposed survey area are provided in the Supporting Information Document.

By recording the ADDs across various distances and depths, we can accurately estimate the received levels to which animals are subjected. This is essential because the received level is determined by the distance from the source, the receiver's depth, and environmental variables such as transmission loss, absorption, and specific local propagation conditions. Consequently, relying solely on the device's source level would fail to provide a realistic assessment of potential acoustic impact.

Table 1 – Device specifications

Model	**Source Level (SPL)**	**Frequency (kHz)**	**Web link**	**Trial studies on effectiveness**
DDD03N, DDD03H, DiD (STM)	175	5 - 500	https://www.stm-products.com/en/products/fishing-technology)	Marçalo et al., 2025; Puente et al. 2023
NetShied (Future Oceans)	175	60-120	https://www.futureoceans.com/our-pingers/	Lawson et al. 2025

TAST* (GenusWave)	175.4	Center frequency at 1 kHz to 1.8 kHz	www.genuswave.com	Whyte et al. 2020

DDD and DiD differ only by the duration of the intervals (randomised to avoid habituation). *TAST is not a single, rigid device model, but rather a technology (Targeted Acoustic Startle Technology) that has been refined over the years, evolving from laboratory equipment to prototypes in marine farms and now to modular commercial devices aimed at fishing.

Table 2: Non-Impulsive Auditory Injury Thresholds by Hearing Group (NOAA 2024; Southall et al. 2019)

Hearing Group	**Bandwidth**	**Weighting Function**	**TTS (LE,24h)**	**PTS (LE,24h)**
VHF Cetaceans	200 Hz – 165 kHz	f1 = 9.3 kHz, f2 = 139 kHz, C = 1.14 dB, a = 1.8, b = 2	153 dB	173 dB
HF Cetaceans	150 Hz – 160 kHz	f1 = 8.1 kHz, f2 = 104 kHz, C = 1.25 dB, a = 1.2, b = 2	178 dB	198 dB
Phocid Pinnipeds (PCW)	40 Hz – 90 kHz	f1 = 1.5 kHz, f2 = 27 kHz, C = 0.82 dB, a = 1.0, b = 2	181 dB	201 dB

Note: Thresholds for permanent threshold shift (PTS) and temporary threshold shift (TTS) are expressed as cumulative sound exposure levels over a 24-hour period (LE,24h). All values are frequency-weighted according to the specific auditory weighting functions defined

for each marine mammal hearing group. For non-impulsive sources, peak sound pressure level criteria are not applicable as the primary risk is associated with the total energy dose received over time. It is important to note that the values for TTS and PTS refer to the received level of sound at the position of the animal, rather than the source level emitted by the acoustic device itself. This means that while a device may have a high output at its source, the actual risk of hearing shifts depends on the distance of the animal from the sound and the resulting sound level it experiences.

[1] Commission Delegated Regulation (EU) 2025/2593 of 11 August 2025 amending Regulation (EU) 2019/1241 as regards measures to reduce incidental catches of cetaceans in the Bay of Biscay. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202502593

2e) To allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species to the extent specified therein, which are referred to in the First Schedule

i) Please clearly state the objective of the activity and verify that this reason is being chosen as the objective of the activity does not match reasons a-d listed above.

ii) Please summarise how the activity will result in the taking or keeping of limited numbers of specimens of the species, how it will be applied on a selective basis and to a limited extent, and how it will be done under strictly supervised conditions.

Test 2: Absence of Alternative solutions

2. Please summarise the alternative solutions that have been considered and why these solutions are deemed unsatisfactory. This must include the option of the “do-nothing” alternative and evidence should be objective and robust. Note that in all cases further information must be provided in the format set out in Part E: Template for Supporting Information.

Alternative Solution	Reasons for “Unsatisfactory”
Do-Nothing	This outcome would be unsatisfactory because it would allow the current gap in scientific knowledge regarding the optimal use and effectiveness of ADDs to persist. This alternative fails to address the transformation of the marine soundscape resulting from the mass deployment of ADDs, as required by the Technical Measures Regulation and Commission Delegated Regulation (EU) 2025/2593. Current assessments typically focus on isolated devices, neglecting the cumulative effect that occurs when an entire fishing fleet operates concurrently in a specific area. This research is essential to characterise the specific sound signature of these collective emissions and to understand how they shift the underwater environment from its natural state toward a landscape of sustained acoustic pressure, a major concern that remains a significant regulatory blind spot. This study aims to address this issue by quantifying the cumulative sound field and identifying the likely distances over which marine life is affected. By modelling how individual acoustic ranges overlap and propagate under realistic field conditions, the research will determine the total ensonified area and the extent to which acoustic refuges for sensitive species are lost. Without these empirical signatures and propagation data, it is impossible to develop evidence-based deployment guidelines or to manage the large-scale acoustic disturbance that mass pinger use imposes on the marine environment.

Testing an ADD within the current technical specifications (i.e., regulated SPL)	The larger study was designed to assess not only medium-frequency ADDs addressed by Commission Implementing Regulation (EU) 2020/967 but also high-frequency ADDs with different SPL levels. Testing solely within the currently regulated SPL specifications is unsuitable, as it does not address the specific data gap this research seeks to resolve, particularly regarding the cumulative acoustic effects of high-output devices deployed at scale. The primary objective of this study is not to evaluate the direct biological effects of these devices on individual animals, but to characterise the "sound signature" and total noise input into the marine soundscape. Previous studies conducted in Scottish waters have highlighted the importance of understanding the spatial footprint and cumulative soundscape contribution of ADD deployments, particularly under chronic operational scenarios associated with aquaculture (Findlay et al., 2018; 2022). To build accurate acoustic models of propagation and transmission range, it is necessary to record non-conventional, high-output models that exceed current standards. These data are essential to quantify the scale of the cumulative sound field and to understand the various environmental properties that affect sound transmission in realistic operational areas. Without capturing these higher-output signatures, it is not possible to accurately model the full noise footprint generated by the simultaneous operation of a vessel fleet. This research aims to examine how cumulative excessive noise inputs modify the marine environment, necessitating measurements beyond standard recording limits. Such an approach is essential to provide a comprehensive assessment of the effects of large-scale

	deployment on underwater soundscapes and to determine the spatial extent over which these impacts will occur.
Relying solely on existing literature/modelling data	Within the Marine Beacon project, a comprehensive systematic review of Acoustic Deterrent Device (ADD) studies was undertaken, which has highlighted significant knowledge and data gaps, including inconsistencies among studies regarding their outcomes, acoustic properties of devices and effective ranges, as well as documented impacts on marine mammals. The current body of literature remains insufficient to support robust policy development. While computer modelling is a valuable tool, it is inherently limited by theoretical assumptions that can introduce bias; therefore, site-specific field trials are essential to ground-truth these models against real-world environmental variables. Reliance solely on modelling without empirical validation is inadequate for informing responsible conservation decision-making, as field data is required to calibrate and verify the accuracy of predicted acoustic propagation and ecological risk in operational conditions.
Phased Approach / Gradual Sound Ramp-up	A traditional ramp-up or soft-start procedure (i.e. gradual increase in source level) is functionally impossible with ADDs. These devices are autonomous, factory-calibrated units with fixed source levels and pre-programmed emission characteristics, which activate automatically upon deployment and do not allow real-time control or adjustment once submerged. The devices we are planning to assess operate at Source Levels between 175 and 175.4 dB SPL, remaining approximately 49 dB below the 224 dB SPL

	Temporary Threshold Shift (TTS) onset threshold established by the NPWS. Given that the decibel scale is logarithmic, this 49 dB difference does not represent a linear gap but rather a difference in acoustic intensity of approximately 80,000-fold, meaning the energy required to reach the TTS onset threshold is of an entirely different order of magnitude to that emitted by these devices. This safety margin applies equally across all cetacean functional hearing groups. Further details regarding the different hearing group acoustic sensitivity profiles and the operating frequencies and source levels of each ADD model are provided in the Supporting Information Document.
Lower Sound Level Configurations	The ADD models used in this study are factory-calibrated, autonomous systems with pre-defined emission characteristics whose output is fixed by design and cannot be adjusted before or during deployment. Safety during deployment is ensured through a mandatory 500-metre mitigation zone within which a minimum 30-minute pre-activation visual watch is conducted by a trained Marine Mammal Observer before each deployment, ensuring that no sensitive species are present within the acoustic field at the time of device activation. The source levels of the devices assessed in this application remain well below established auditory injury thresholds for all relevant marine mammal hearing groups, even if they happen to enter under the mitigation zone once the tests start.
Alternative Location (Conducting trials elsewhere in Irish waters)	Conducting the ADD trials in an alternative location within Irish waters is not a satisfactory

	alternative to avoid impacts on the species. Site selection has been explicitly designed to minimise the likelihood of exposure as far as practicable. Trials will be conducted in areas that are not considered marine mammal hotspots, thereby reducing encounter probability. Galway Bay was selected not only for its representative bathymetric conditions relevant to fisheries applications, but also because it allows for controlled deployment in relatively confined and manageable waters. Within Galway Bay, specific trial locations will be chosen to avoid sensitive areas such as the Galway Bay Complex SAC, which supports *Phoca vitulina* haul-out and pupping sites. Acoustic emissions will be spatially constrained, and deployments will preferentially occur in inner bay areas away from these features. In addition, the trial design incorporates real-time mitigation measures. During static trials, if marine mammals enter the mitigation zone, equipment can be immediately recovered, effectively ceasing sound emissions. In vessel-based trials, the source levels of the devices are comparable to, or lower than, typical vessel-mounted acoustic equipment, further limiting additional acoustic impact. Tank-based testing was considered but deemed unsuitable, as reverberation and multipath effects in confined environments prevent accurate characterisation of sound propagation. Instead, one of the fieldwork campaigns for data collection will be in Kilrush Harbour, a semi-controlled environment where the absence of marine mammals can be visually confirmed prior to deployment. Alternative locations such as Tralee Bay were discounted due to a higher likelihood of marine mammal presence, particularly *Tursiops truncatus*. Overall, the selected sites represent a lower-risk option

	compared to more exposed offshore environments, due to increased visual control, logistical feasibility, and the ability to implement robust Marine Mammal Observer protocols. Further details on species occurrence, acoustic sensitivity, and relevant thresholds are provided in the Supporting Information Document.
Reduction in Scale, Intensity or Duration	Alternatives involving reduced survey effort (e.g. fewer recording stations or shorter sampling periods) were considered but deemed insufficient to meet the scientific requirements for robust characterisation of sound propagation. Field campaigns in each location (Galway Bay and Kilrush Marina) will have a maximum of five days in duration (only if required due to weather or logistical constraints), ensuring minimal temporal exposure. Three campaigns are planned, including two static simulations and one active fishing trial, evaluating five high-output acoustic deterrent devices (ADDs). The number of recording stations (three to four, with three depths each) per area has been minimised to the lowest feasible level required for spatial coverage. During simulation trials, ADD activation is restricted to short, discrete recording windows (~10 minutes per depth), sufficient to characterise propagation while limiting exposure. This results in 120 minutes (two hours) of active transmission per device and a total of 10 hours across all five devices. In fishing trials, the same spatial configuration is used, but the device activity is inherently constrained by standard gear deployment durations and does not exceed typical operational conditions, reflecting standard operational conditions.

Alternative Timing (Conducting trials at a different time of year)	The study timeframe is constrained by the data-collection schedule of the wider project and the prevailing weather conditions, requiring favourable weather. Conducting the trials at an alternative time of year is not a satisfactory solution because Common Dolphins are highly mobile and present year-round in the coastal and offshore waters of Ireland. Therefore, changing the timing of the project would not eliminate the risk of encountering the species or negate the need for a derogation licence. In line with protocol, trials will not proceed if mother-calf pairs are present. While time constraints precluded avoiding the calving season entirely, trial schedules were designed to minimise overlap with peak neonatal activity. In Galway Bay, June and July represent an overlapping period of neonates for Harbour Porpoises, Harbour Seals, and Common Dolphins (Murphy et al. 2009; NPWS, 2013). To mitigate anthropogenic disturbance to mother-calf/pup pairs and dependent young, this 'critical window' has been excluded from the trial period within coastal waters of Galway Bay.

Test 3: Impact of a Derogation on Conservation Status

3. Please summarise the possible impacts on the population of the species that is subject to this application, taking into account all the mitigation and/or compensation measures that are to be undertaken. Evidence that such mitigation has been successful elsewhere should be provided where relevant. Mitigation measures being relied upon must ensure that the derogation 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. Note that in all cases further information must be provided in the format set out in Part E: Template for Supporting Information.

Proposed Mitigation Measure	Justification / Mechanism to Ensure Favourable Conservation Status	Evidence of Success (where relevant)
Minimal and Reversible Impact Design	The acoustic exposure is temporary, spatially limited, and non-coercive. While Delphinus delphis is the primary conservation driver, all mitigation measures apply to the full suite of Annex II and IV. Animals are expected to detect and voluntarily move away from the sound field, preventing prolonged exposure. The devices operate at 175–175.4 dB SPL, which remains within the safe values established by NPWS and approximately 49 dB below the threshold for TTS onset. This ensures a substantial safety margin across all cetacean hearing groups.	Controlled experimental studies and field monitoring on odontocete's behavioural response to different sound sources, including ADDs, have confirmed the species' ability to detect and voluntarily evade unfavourable acoustic fields (Goold 1996; Casey et al. 2024; Southall et al., 2024). Berrow et al. (2008) reported that Common Dolphins showed mild or no behavioural response to earlier models of high-output ADDs.
Site Selection and Strictly Controlled Research Conditions	Trials will be conducted in Galway Bay, selected for both its representative bathymetry and its suitability for controlled, low-risk deployments. Survey locations within the bay will be chosen to avoid sensitive areas, including the Galway Bay Complex SAC, which supports Phoca vitulina haul-out and pupping sites. The other trials will take place in Kilrush Harbour, a semi-enclosed environment where absence of marine mammals can be visually confirmed prior to activation. Across all sites: ● A 30-minute pre-deployment MMO watch will be conducted within a 500 m mitigation zone, therefore,	Experiments using devices with similar source level were carried out on previous studies in Irish waters, with both the Common Dolphin and Bottlenose Dolphin (Leeney et al., 2007; Berrow et al., 2008).

	trials will not commence if any marine mammals are detected ● If animals enter the mitigation zone during static trials, equipment will be immediately retrieved, ceasing emissions ● Each activation will be short-duration and intermittent, limiting continuous exposure time	
Overall Conservation Outcome	The objective is to generate a framework for the more effective use of bycatch mitigation devices. This systemic benefit—advancing cetacean protection policy and reducing long-term bycatch risk—outweighs the minor, localised risk of temporary disturbance. This study will produce the first environmental impact assessment for the deployment of pingers 'en masse' in the Northeast Atlantic, with associated soundscape maps.	The use of improved ADD efficacy data to inform policy has a proven track record in reducing bycatch incidents for cetaceans in various fisheries globally (Carretta, 2008; Paitach et al., 2022; Marçalo et al., 2025).

Part E: Template for Supporting Information

This application form should provide a summary of the evidence that the applicant has provided. In all cases, it is necessary to provide separate supporting information so that the assessment of the application can be undertaken in a robust and comprehensive manner. Applicants should refer to guidance provided by the NPWS and the European Commission whilst preparing this application form and the supporting information.

It is essential that supporting information is prepared in a consistent manner using the template below so that NPWS officials assessing the application can locate the relevant evidence to determine if the three Tests can be met. Failure to provide sufficient evidence will result in the application being refused.

The structure of the Supporting Information should be as follows:

1) Table of Contents

2) Introduction
    a. Objective of the proposed works (for example, as part of construction of a national road, repair of roofing, undertaking surveys etc.)
    b. Name, qualifications and relevant experience of scientific staff, including trainees, (e.g. ecologist) involved in the preparation of the application and those responsible for carrying out the proposed activity.
    c. If this application is for the carrying out of surveys that may cause disturbance, qualifications of all involved must be provided and trainees must be clearly identified.

3) Background to proposed activity including location, ownership, type of and need for the proposed activity, planning history, policy context, zoning in relevant Development plan (or equivalent), etc.

4) Full details of proposed activity to be covered by the derogation (including a site plan). The site may be inspected by an NPWS representative, so the details given should clearly reflect the extent of the project. This information will be used to compare site conditions with the Method Statement.

5) Ecological Survey and site assessment (Not required for applications to carry out surveys)
    a. Pre-existing information on species at location and environs.
    b. Status of the species in the local/regional area (relevant to the consideration of the impact on the population at the relevant geographic scale (Test 3))
    c. Objective(s) of survey
    d. Description of Surveys Area
    e. Survey methodology (including evidence as to how the methodology represents best practice and is appropriate to the Objective). Methodology should include survey maps, details of timing, climate, equipment used and identify any uncertainties or difficulties encountered.
    f. Survey results including raw data, any processed or aggregated data, and negative results as appropriate. Photographs and maps must be provided where site-specific features are referred.
    g. Population size class assessment.

6) Evidence to support the Derogation Tests

a. Test 1 - Reason for Derogation:
    i. There should be a clear explanation as to why a specific reason(s) has been selected in the application form.

    ii. Applicants are advised to read the guidance published by the NPWS 'Guidance on Applications for Regulation 54 Derogations for Annex IV species: Guidance for Applicants" with specific reference to Section 3.1.

b. Test 2 - Absence of Alternative Solutions
    i. Applicants must list the alternatives to the proposed activity that have been considered, including the do-nothing alternatives in a clear and objective manner. A basic requirement is that these alternatives should be compared in terms of their impact on the species subject to strict protection. It should be clear to NPWS officials as to why the chosen approach has been selected.
    ii. Applicants are advised to read the guidance published by 'Guidance on Applications for Regulation 54 Derogations for Annex IV species: Guidance for Applicants" with specific reference to Section 3.2.

c. Test 3 - Impact of a derogation on Conservation Status
    i. Applicants should include details of the population at the appropriate geographic scale and an evaluation of how the proposed activity will affect the conservation status both before and after mitigation measures have been applied.
    ii. Full and detailed descriptions of proposed mitigation measures that are relevant to the potential impact on the target species. Evidence that such mitigation has been successful elsewhere should be provided, where available.
    iii. Applicants are advised to read the guidance published 'Guidance on Applications for Regulation 54 Derogations for Annex IV species: Guidance for Applicants" with specific reference to Section 3.3.

7) Monitoring the impacts of the derogations
    a. Applicants must include details of how they propose to verify whether the derogations have been implemented correctly and whether they achieved their objective, using scientifically based evidence, and, if necessary, how the applicant will take corrective measures where required.
    b. Applicants should provide details of proposed reports to be submitted to the NPWS including the results of monitoring.

c. Applicants are advised to read the guidance published by the European Commission "Guidance document on the strict protection of animal species of Community interest under the Habitats Directive" with specific reference to Section 3.4.

Part F. Declaration

I declare that all of the foregoing particulars are, to the best of my knowledge and belief, true and correct. I understand that the deliberate killing, injuring, capturing or disturbing of protected species, or damage or destruction of their breeding sites or resting places or the deliberate taking or destroying of eggs is an offence without a derogation and that it is a legal requirement to comply with the conditions of any derogation I may be granted following this application. I understand that NPWS may visit to check compliance with a derogation.

Please note that under Regulation 5 of the European Communities (Birds and Natural Habitats) Regulations 2011-2021 an authorised officer may enter and inspect any land or premises for the purposes of performing any of their functions under these Regulations or for obtaining any information which they may require for such purposes.

Signature of the Applicant **Date** 12/05/2026

Name in BLOCK LETTERS YASMIN VIANA PINTO

PRIVACY STATEMENT

See Privacy Statement at www.npws.ie/licences