Milford Haven Intertidal and Subtidal Survey 2025

Survey plan for drop down video, benthic grab sampling, and a Phase I intertidal survey near Milford Haven, Wales

February 2025

ECO MARINE CONSULTANTS

DRAGONLNG ENERGY IN WALES

Royal HaskoningDHV Enhancing Society Together

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Contents

1. Introduction 2
1.1. Project Overview 2
1.2. Survey Aims and Objectives 2
2. Survey Design and Methodology 3
2.1. Epibenthic Subtidal Survey 5
2.1.1. DDV Survey 5
2.1.2. Benthic Grab Survey 5
2.2. Intertidal Survey 6
2.2.1. Phase I Survey 6
2.3. Survey Operations 7
2.4. Survey Timing 7
3. Health and Safety 9
3.1. Health and Safety Processes 9
3.2. Environmental Processes 9
3.3. Site Access and Permissions 9
4. References 10
5. Appendices 11

1. Introduction

1.1. Project Overview

Eco Marine Consultants Limited (Eco Marine) has been commissioned by Royal HaskoningDHV (RHDHV) on behalf of Dragon LNG to conduct a drop-down video (DDV), benthic grab, and intertidal survey of the areas potentially to be affected by construction and operation of a new jetty close to existing jetties near Milford Haven, Wales. The survey is required to establish the epibenthic and benthic communities and contaminants present as a baseline assessment in the area of interest in order confirm there are no aspects of the existing baseline that would prevent a jetty being built in the future.

The survey to be undertaken will include the deployment of a DDV system as well as benthic sampling for infauna, contaminants, and sediment particle size analysis (PSA) data, in addition to an intertidal survey, in order to obtain detailed information on the faunal communities and sediments present.

Eco Marine has compiled this survey plan to outline the methodology and details of the monitoring survey of the area of interest. This survey will provide RHDHV with an evidence-based assessment of the condition of the area of interest prior to any development activity related to a new jetty installation. Existing habitats and features within the survey area will be identified and where possible quantified.

Following the completion of the survey, Eco Marine will provide RHDHV with a fully illustrated concise technical report detailing the work undertaken, reporting the survey and analytical findings, and discussing these in light of the proposed development.

1.2. Survey Aims and Objectives

The main aim of the Milford Haven subtidal and intertidal surveys is as follows:

- To survey and acquire high quality biological data of suitable resolution from the Milford Haven area of interest and to examine the present condition of the foreshore and seabed.

The principal objectives of the survey programme are as follows:

- To collect information on and describe the epibenthic and benthic biological communities that occur within the survey area, along with the characterising taxa for each community type in order to provide a robust basis for possible subsequent impact assessments.
- To describe the distribution of sediment types within the survey area and their relation to biological community composition.
- To describe the distribution of contaminants within the survey area.
- To identify and document the occurrence of any species or communities of conservation importance.

2. Survey Design and Methodology

A combination of DDV, benthic grab samples, and an intertidal walkover survey will be used to characterise the survey area. Based upon the scope provided by RHDHV, a total of 10 point stations proposed by Eco Marine will be targeted within the survey area of interest for seabed imagery as well as benthic grabs to assess epibenthic communities and seabed features. Contaminant and sediment PSA samples will also be collected at five of the stations. In addition, three video transects will be conducted in the vicinity of the subtidal area proposed for the jetty head and trestle.

It is intended that the DDV survey will be completed first and the results of this will be used to inform the positions of the benthic grab stations. An initial review of seabed character in the study area indicates that some parts of the survey site are likely to comprise rock, which may be unsuitable for grab sampling. The locations of proposed stations have been included in this survey plan to serve as a basis for target coverage of the study site and are not intended to be set in stone. Any stations which are found to comprise hard sediments which are unsuitable for grabbing will be relocated in the field where possible.

The proposed locations of the sampling stations, DDV transects, and intertidal survey area are shown in Figure 1. The stations have been placed according to a stratified random sampling approach following standard guidelines due to the indicated heterogenous nature of the seabed from local broadscale habitat maps (Figure 2). All station coordinates are listed in full in Appendix 1. An intertidal Phase I survey will be conducted across the foreshore within the survey area, down to the mean low water springs level (where possible), as shown in Figure 1. The stations at which contaminant and PSA samples will be collected have been allocated to stations which give coverage across the survey area. This has resulted in allocation at stations indicated to be rocky sediments (Figure 2).

It is understood from communications with RHDHV that the Crown Estate own only the foreshore within the survey area, and therefore the current placement of the stations in the subtidal zone should not require a Seabed Survey Licence.

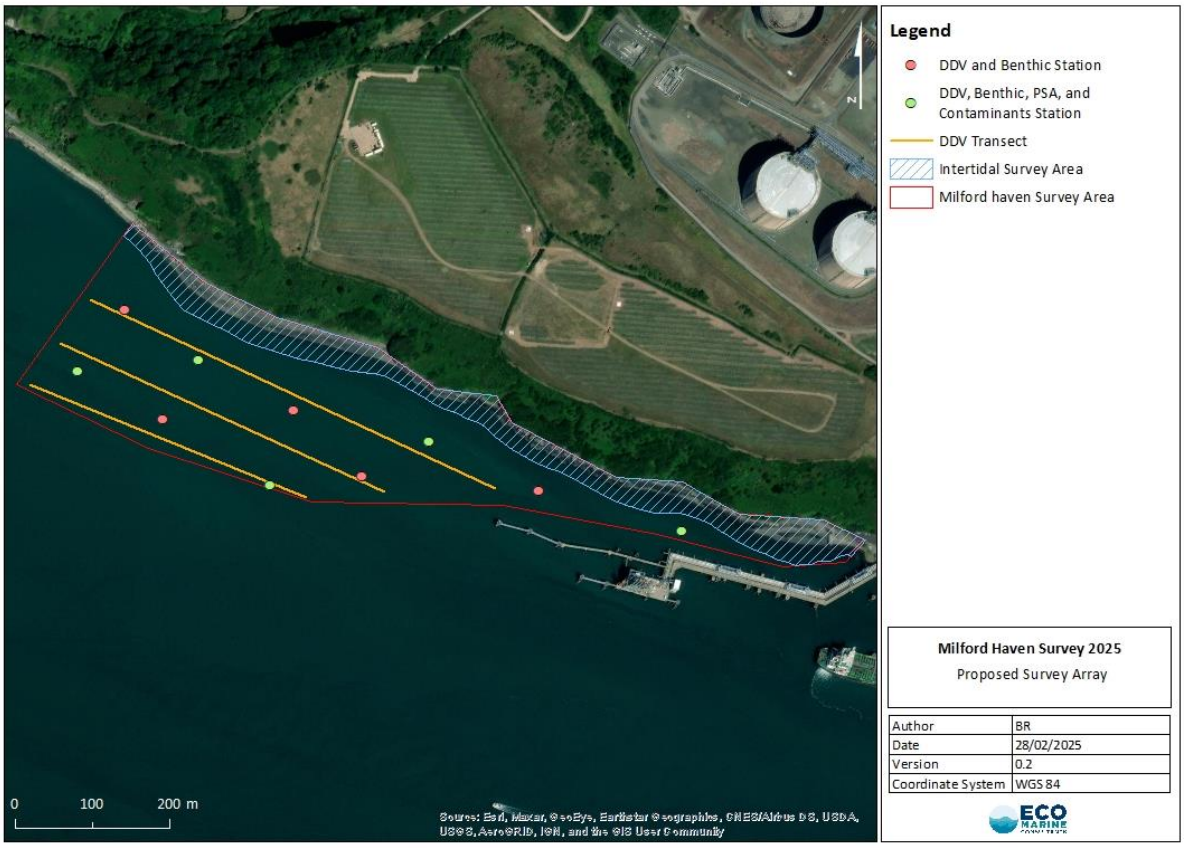

Figure 1. Proposed locations for subtidal DDV and benthic sample collection stations and the intertidal Phase I survey area near Milford Haven, Wales in 2025.

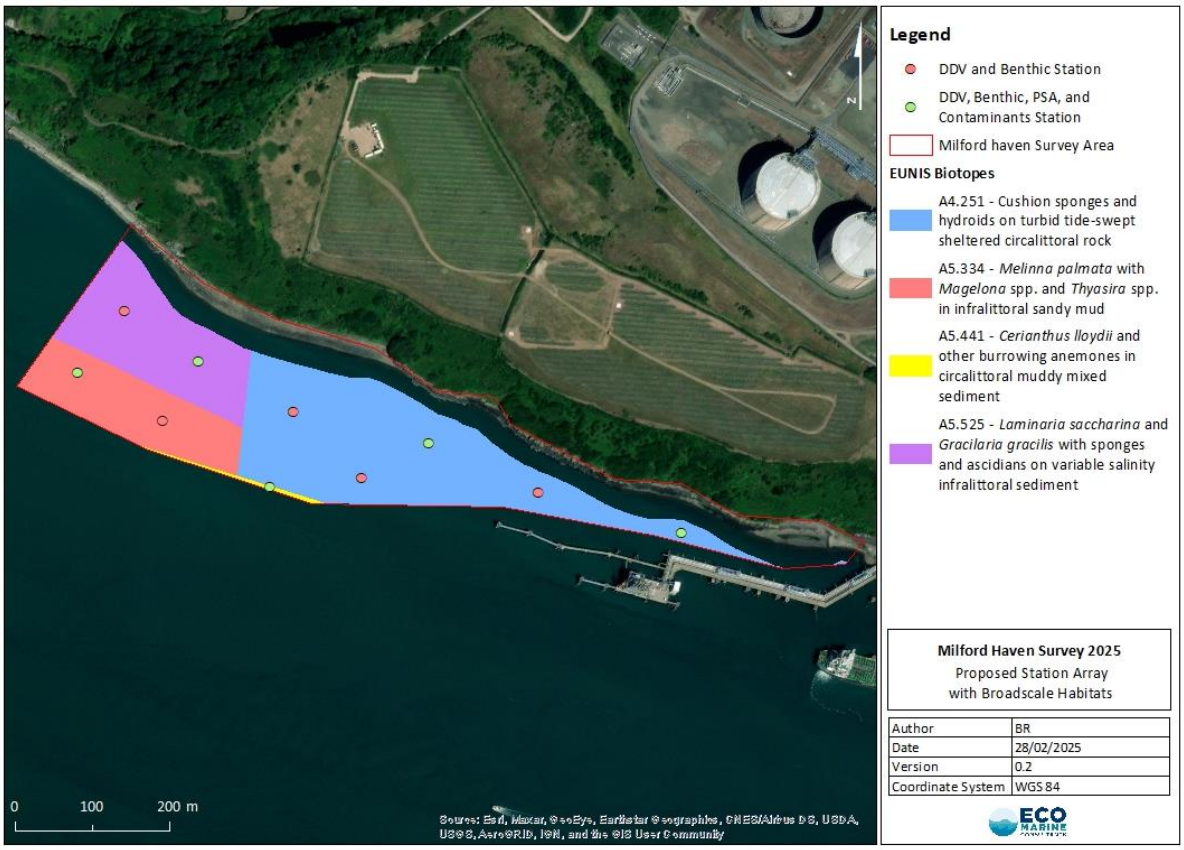

Figure 2. Proposed subtidal station locations and broadscale habitat types (EMODnet, 2019) within the survey area near Milford Haven, Wales.

2.1. Epibenthic Subtidal Survey

2.1.1. DDV Survey

A series of DDV deployments will be made at each of the 10 survey stations and video transect lines presented in Figure 1 using a HD camera system deployed from the survey vessel. The camera will send real-time images back to the surface through an umbilical cord, allowing the survey team to monitor the camera's progress. All videos will be stored in the camera and downloaded after each day onto designated hard drives for subsequent analysis. It is proposed that one day is allocated to gathering DDV images in the field. Should the capturing of imagery at the 10 stations and three transects be achieved in less than one day, the remaining time available will be spent by sampling additional ad hoc stations placed in the field to ensure that the maximum possible amount of data is collected during fieldwork.

The camera system will be powered using the vessels own generator (or back-up generator as necessary) and will be deployed via a hydraulic winch and A frame at each station. The camera will be lowered to a suitable height using live feed footage which will also enable the field staff to make an assessment of the quality of image which is likely to be achieved at the station. Video footage of the seabed will be captured at each station to allow semi-quantitative and descriptive observations to be made and to ensure a clear field of view for images to be collected. A minimum of three stills will be taken per drop. Accurate positions will be recorded using HydroPro survey software and recorded in the survey notebooks.

Detailed field notes will be taken including, as a minimum, the station co-ordinates, time of sampling (in UTC), depth of water and weather conditions. Pro forma templates for the field notes can be found in Appendix 2. This information will be recorded as an appendix to the report.

Upon return to the Eco Marine lab, data from the camera drops will be analysed to determine habitat type at each station and notes will be made of any obvious macrobenthic and epifaunal species present with abundance estimates based on the SACFOR scale. Where appropriate (and where video quality allows) biotopes may be assigned in accordance with the EUNIS classification scheme.

As part of the DDV survey the images received will be reviewed in real time in order for the surveyors to assess which stations are likely to be suitable for the acquisition of benthic grab samples i.e., evidence of soft sediment present.

2.1.2. Benthic Grab Survey

Subsequent to the DDV survey, stations deemed suitable for benthic grab recovery, e.g. presence of soft sediments, will be targeted for grab sampling. If any of the five pre-designated stations for PSA and contaminants analysis indicate rocky or hard seabed conditions, they may be relocated in the field to other stations so that grab samples can be recovered from patches of soft sediment. Grab sampling rocky habitat is not recommended and is likely to damage sampling equipment and not result in any viable samples being recovered, thus only stations where soft sediment is identified will be subject to grab sampling.

Single seabed samples will be taken at each station with a standard 0.1m² Day grab deployed from the survey vessel. Samples will be taken from as close as possible to the target station coordinates, and

where possible within 10m of the target location. Three attempts will be made to retrieve a sample of at least 5L in volume at each station. If small samples less then 5L in volume are recovered during the attempts, these will be kept to one side and processed if a suitably large sample cannot be obtained.

Subsequent to deployment, the grab will be brought aboard the survey vessel. At the five pre-designated stations for contaminants analysis (Figure 1), prior to discharging the sample into a plastic box below the grab stand, samples will be obtained for contaminants analysis. Each contaminants subsample will be placed in sealed and secure containers with appropriate labels. Contaminant samples will be stored in containers provided by the analytical laboratory and frozen or chilled where possible prior to analysis.

The remaining grab sample will then be discharged into a collection box. A photograph will be taken of each sample as evidence of collection. At the five pre-designated stations for PSA (Figure 1), sub-samples of sediment of approximately 0.5L in volume will be taken for PSA from each sample and carefully labelled. At all stations the remainder of the sample will be placed on a 1mm-mesh net supported on a 1mm-mesh stainless-steel sieve and gently eluted with seawater to remove excess fine sediments. The residual sample will be transferred into a labelled plastic bucket, preserved in buffered formalin and sealed with a tight-fitting lid. Benthic samples will be labelled inside and out and will be retained for subsequent analysis of the benthic infauna in the laboratory.

Risk assessments pertaining to all field sampling activities, including using formalin in the field, are given in full in Appendices 3-7. Detailed field notes will be taken during the grabbing operations. This includes, as a minimum, the grab coordinates, time of sampling, depth, sample volume, sediment type, description of any cobbles present, weather conditions and sea state, and any notes on the fauna present within the grab.

2.2. Intertidal Survey

The intertidal component of the survey will be conducted on foot at low water across the intertidal area of interest (see Figure 1), where accessible. All intertidal survey work will be carried out in accordance with the technical methods outlined in the 'CSM Guidance' (JNCC, 2004), 'Marine Monitoring Handbook' (Davies *et al*., 2001), the 'Handbook for Marine Intertidal Phase I Survey and Mapping' (Wyn *et al*., 2006), and the 'Benthic habitat assessment guidance for marine developments and activities' (NRW, 2019).

2.2.1. Phase I Survey

Phase I mapping comprises a walkover survey of the site, characterising the biotopes present and establishing conspicuous boundaries across the foreshore. As part of this process, the range and distribution of broadscale habitats, species of conservation interest, and the characteristic and notable biotopes will be determined across the site. Aerial imagery (from open access sources) will be used in conjunction with OS mapping to produce basic wire maps, to be used by the field staff to ground truth during the survey.

The intertidal area of interest (from mean high water springs to mean low water springs) will be mapped using a handheld GPS unit, with notes made relating to the characteristic and notable biotopes for the area. Biotope classifications will be determined using the EUNIS biotope classification system. Areas of different habitats will be mapped using GIS and field maps where appropriate, with

the outputs of this exercise digitised using ArcGIS following the completion of the survey. Detailed field notes will be made during the investigation with the information recorded relating to the time and date of survey, the habitats and sediments encountered, and the presence of any obvious or interesting fauna or habitats in addition to further information as required. Georeferenced photographs will be taken in the field where appropriate, as will detailed notes on any features of interest, including anthropogenic disturbance.

2.3. Survey Operations

It is proposed that all sampling will be conducted aboard the 'Sea Leopard', a 10m local vessel, which will be launched from Neyland Marina. The vessel is known to be suitable for the work having carried out similar projects in the local area before. It is equipped with a hydraulic winch and A frame which will allow for the operation of the grab and camera required for sampling. As a local vessel operator, the vessel's skipper is highly experienced in navigating the area. A vessel safety audit will be conducted before work commences to ensure that Eco Marine's safety standards are met. All of the stations within the Milford Haven survey array are within safe working range of the vessel. The vessel will be equipped with a bespoke GPS antenna and HydroPro navigation software which will allow for high accuracy positioning.

A well-qualified, highly trained team of marine biologists who have extensive knowledge and experience in the fields of marine ecology, intertidal surveying, the analysis of marine ecological data, and report production will be assigned to complete field sampling by Eco Marine.

2.4. Survey Timing

It is anticipated that fieldwork will be carried out over four days during spring tides in March/April 2025 to ensure sufficient water coverage over rocky outcrops when collecting samples and video data, as well as maximum exposure of the foreshore for the Phase I intertidal survey. Potential dates selected for the survey based upon suitable tidal regimes are outlined in Table 1. The earliest suitable window according to weather and vessel availability will be taken and all plans to mobilise will be shared with RHDHV as soon as possible. The survey area extends from the intertidal to shallow sublittoral zone (depths of approximately 10m below CD) and as such, it is anticipated that the shallower stations will need to be targeted at high water while the video footage and stills should be taken during slack tide where possible.

The vessel has been reserved with the provider for the entire final week in March (Monday 24th to Sunday 31st) to account for any loss of survey time due to poor weather of factors beyond our control. Should the survey window proposed in Table 1 be deemed unsuitable due to weather, the next suitable window which works for vessel availability, tides, and weather will be taken. From communication with Dragon LNG, it has been noted that vessels are alongside the existing jetty on the 25th and 28th of March and so these days will be avoided for survey. Upon commencement of the survey, Eco Marine will complete daily reports following our standard layout which will be sent to RHDHV daily and therefore, should the survey be postponed or extended for any reason due to factors outside of our control (including bad weather), the client will be informed immediately.

Table 1. Proposed survey dates to undertake the Milford Haven subtidal and intertidal surveys in March/April 2025.

Date Option	Date	Tide 1	Tide 2	Tide 3	Tide 4
Subtidal Survey	26.03.2025	03:41 (5.8m)	10:04 (1.8m)	16:09 (5.9m)	22:27 (1.7m)
	27.03.2025	04:30 (6.4m)	10:53 (1.2m)	16:55 (6.5m)	23:13 (1.1m)
Intertidal Survey	01.04.2025	02:39 (0.3m)	09:03 (7.5m)	15:21 (0.4m)	21:21 (7.2m)
	02.04.2025	03:40 (0.6m)	09:44 (7.1m)	16:01 (0.9m)	22:03 (6.8m)

3. Health and Safety

3.1. Health and Safety Processes

Eco Marine take health and safety considerations very seriously, especially when working in dynamic marine environments. Eco Marine will therefore ensure that we always comply with our rigorous HSE policy. Complete risk assessments have been undertaken for all activities to be undertaken for this project (Appendices 3-7). Additionally, an subtidal and intertidal Emergency Response Procedures (ERPs) and the Eco Marine daily toolbox talk template are included in Appendices 8 and 9, respectively.

Daily toolbox talks will be given prior to survey operations each working day – including mobilisation and transit days. Toolbox talks will include provisions to ensure that the ERP is available to all staff, suitable PPE is worn, and that the survey team (including vessel operator and deckhand) is fully briefed on the tasks and health and safety issues. A minimum of two staff will always be present on survey operations - Eco Marine does not engage in lone-working practices. Eco Marine also has standard risk assessments and SOPs in place for office-based activities which are strictly adhered to.

The survey will be weather dependent and will require minimal tidal and water movement, particularly when undertaking camera operations. A daily weather check will be carried out to ensure conditions are within safety constraints. All surveyors will be equipped with PPE and lifejackets which shall be worn when on board the survey vessel.

Eco Marine is currently insured for £10 million public liability, £10 million professional indemnity and £10 million for employer's liability. Policy certificates can be supplied upon request.

3.2. Environmental Processes

Invasive non-native species (INNS) are considered to be one of the top five pressures directly driving biodiversity loss globally. Prevention of the spread of INNS is of importance, particularly in marine environments. Eco Marine shall be aware of and work in accordance with standard good practice biosecurity measures to avoid spread of INNS:

- Equipment, clothes, and boots will be clean before carrying out any work on site.
- When on or near water equipment will be drained after use and dried as far as possible.
- The survey vessel that is used for the survey work will have its hull cleaned on a regular basis.
- Best practice guidelines will be followed as outlined by The Green Blue (2025).

3.3. Site Access and Permissions

All relevant consents and permits necessary for the survey will be secured ahead of mobilisation by RHDHV and the relevant local authorities will be notified of all survey activities. It is understood that a Seabed Survey Licence is not required from the Crown Estate for the survey at Milford Haven in 2025. An NRW Band 1 Marine Licence is required for the benthic grab aspect of the subtidal survey at Milford Haven in 2025 and therefore is being secured by RHDHV before the survey commences. Where necessary, Eco Marine and the vessel operator will liaise with the relevant harbour master prior to survey to ensure maximum awareness of any activities due to be undertaken in the vicinity of the survey area once dates are confirmed.

4. References

Davies, J., Baxter, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull, C. and Vincent, M. (eds). 2001. Marine Monitoring Handbook, JNCC, Peterborough, ISBN 1 86107 5243.

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Natural Resources Wales. 2019. GN030 Benthic habitat assessment guidance for marine developments and activities: Guidance for undertaking benthic marine habitat survey and monitoring. Natural Resources Wales, Bangor.

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5. Appendices

Appendix 1 – Coordinates of the proposed Milford Haven sample stations and DDV transects.

Appendix 2 – Milford Haven DDV survey, benthic survey, and intertidal survey field note pro forma templates.

Appendix 3 – Eco Marine Risk Assessment for grab deployment.

Appendix 4 – Eco Marine Risk Assessment for camera deployment.

Appendix 5 – Eco Marine Risk Assessment for small vessel operations.

Appendix 6 – Eco Marine Risk Assessment for use of Formalin in the field.

Appendix 7 - Eco Marine Risk Assessment for intertidal survey operations.

Appendix 8 - Eco Marine Milford Haven emergency response procedure (ERP) document.

Appendix 9 – Eco Marine toolbox talk template for Milford Haven survey.

Appendix 10 – Eco Marine Risk Assessment matrix.

Appendix 1. Coordinates of the proposed Milford Haven 2025 sample stations and DDV transects.

Station Number	Grab Sample Type	Latitude	Longtitude
1	Benthic	51.702546	-5.01042
2	Benthic, PSA, and Contaminants	51.701773	-5.011165
3	Benthic, PSA, and Contaminants	51.702049	-5.008945
4	Benthic	51.701329	-5.009497
5	Benthic	51.701594	-5.007091
6	Benthic, PSA, and Contaminants	51.700694	-5.007364
7	Benthic	51.700925	-5.00568
8	Benthic, PSA, and Contaminants	51.7014	-5.004517
9	Benthic	51.700978	-5.002375
10	Benthic, PSA, and Contaminants	51.700696	-4.999642

Transect	Start/End	Latitude	Longtitude
1	Start	51.702605	-5.011122
	End	51.700943	-5.003211
2	Start	51.702052	-5.011543
	End	51.700764	-5.005235
3	Start	51.701549	-5.012016
	End	51.700609	-5.0067

Appendix 2. Pro forma templates for drop-down video (DDV), benthic grab, and intertidal data collection at Milford Haven in 2025.

Eco Marine Consultants Milford Haven DDV Pro Forma 2025		
Station Number:		Surveyors:
Date:	Start time:	Vessel:
Weather/sea state:		
Water Depth (m):	Visibility (m):	
Latitude (WGS84):	Longitude (WGS84):	
Fix number:	Video ID code:	
Sediment description:		
Digital image ID codes & time: 1 2 3		
Notes on fauna, habitats & biotopes:		
Signs of anthropogenic disturbance:		
Suitable Station for Grab Deployment?		

Appendix 2. Pro forma templates for drop-down video (DDV), benthic grab, and intertidal data collection at Milford Haven in 2025.

Eco Marine Consultants Milford Haven Grab Pro Forma 2025		
Date:	Vessel:	Surveyors:
Station Number:	Weather/sea state:	
Time:	Water Depth (m):	
Fix number:		
Latitude (WGS84):	Longitude (WGS84):	
Sample Volume (L):	PSA and Contaminants Taken?	
Sediment description: **C G sG mG gS S mS sM gM M**		
Photos Taken:		
Anoxic Layer Depth		
Attempts		
Bucket Size		
Notes:		

Appendix 2. Pro forma templates for drop-down video (DDV), benthic grab, and intertidal data collection at Milford Haven in 2025.

	Eco Marine Consultants Milford Haven Intertidal Pro Forma 2025		
Surveyors:			
Date:		Time:	
Fix Number:	Latitude (WGS84):	Longitude (WGS84):	Notes:

Appendix 3.Eco Marine Risk Assessment for grab deployment.

ECO MARINE CONSULTANTS	Eco Marine Risk Assessment Report - Grab operations		
Vessel/ department:	Sea Leopard	Survey code:	RHDMIL0325
Location:	Vessel working deck	Risk Assessment Date:	24-Feb-25
Assessment carried out by:	B. Reed		

This report should be used in conjunction with the Eco Marine risk assessment matrix - CONSEQUENCE x LIKELIHOOD = RISK RATING

TASK / WORK ACTION	ASSOCIATED RISKS	RISK RATING	CONTROL MEASURES	RESIDUAL RICK RATING
Pre Launch Checks	Personnel injury from moving parts (trapped fingers), trip hazards.	B3	Ensure Clean safe working area. Good housekeeping. Follow set up procedures. Conduct toolbox talk with survey team and vessel crew. Wear appropriate PPE including gloves.	B2
Connect Lifting equipment/wire to day grab	Personal Injury (pinched or trapped fingers, head injury from crane/winch wire)/slips, trips and falls	B3	Familiarity and adherence to procedures. Establish go/no go criteria. Use certified lifting equipment, locking devices in place such as split pins and cable ties. Deployment procedures reviewed. Wear correct PPE - steel toe capped shoes & gloves.	B2
Arming day grab	Personnel injury (trapped fingers), equipment damage	C3	Use correct arming operations. Fingers clear when arming to avoid pinch situation. Use experienced/competent crew. PPE to be worn, minimise adjacent crew exposure. Jewellery policy enforced. Good comms between deck and wheelhouse to be maintained.	B3
Lift and Launch	Personal Injury (pinched or trapped fingers and toes, wire splinters, bruises, head injuries), equipment damage (to vessel side, grab or beacon)	C3	Observe Weather limitations for vessel / day grab movement when hoisted. Weather forecast shall be adequate for the predicted duration of the operation. Adequate manning. Use of tag line (recoverable, i.e. slip) during launch ops. Provide adequate working space and escape routes for emergency (trapped against) situations.	B3
Persons working close to vessel side	Personal Injury (crushing), MOB	C4	Use of correct PPE (including lifejacket) and communications procedure. CCTV operational. Erect temporary barrier if applicable.	B3
Day grab on seabed	Temporary loss of day grab	B4	Ensure communications between environmental operator/bridge. Equipment checks complete, check Day grab procedures, operation and position. Use GPS fix from vessel. All plans and charts showing structures onboard and viewed.	B2
Recovery of day grab to deck	Personal injury (pinched or trapped fingers and toes, wire splinters, bruises, head injuries), equipment damage (to vessel side, grab or beacon), invalid sample	C3	Communications maintained with Day grab operator/deck crew at all times. Keep unit low to deck when traversing, in order to maintain instantaneous put-down. Use tag lines/ PPE crane signals and radio. Trained and competent operators only.Deck Personnel to be aware of avenues of escape should the unit become unstable. All unnecessary personnel to the operation to be removed.	B3
Unexploded ordance, munitions etc	Personal Injury, Death	B5	Avoid bringing items on deck. If items are landed on deck keep them secure and wet. Immediately inform coastguard and ask for EOD advice.Presence of all such materials and their GPS locations, depth, position and physical description should be reported to the coastguard. Suspect items should never be exposed to any form of impact (ie should be lowered carefully) and stowed on deck away from heat and disturbance. IT SHOULD BE KEPT COVERED AND DAMPED DOWN. Do not attempt to clean the weapon. Go towards port if you are 2-3hrs steaming distance and lie a safe distance offshore to await arrival of Naval Explosive Ordnance Disposal Unit. DO NOT BRING THE ITEM TO HARBOUR. Captain should warn other vessels within close proximity.	B3
Environmental Conditions	Lost (grab or beacon)/damaged Equipment (vessel, grab or beacon)	C4	Observe weather and sea conditions prior to launch. Day grab to be recovered and further operations halted if weather deteoriation predicted. Visibility 500m, max 2m swell. Down wind/current for both vessel and for Day grab.	B3
Uncontrolled triggering of day grab on deck	Injury (crushing, trapped limb or foot, head injury	C3	Use outside frame holding procedure, no finger entrapment positions. Personnel to stand clear. Use trained operator ands minimise exposure.	B3
Damage to assets	3rd party damage (to platform/structure), vessel damage	B4	Co-ordinate with client /skipper regarding close approach procedures. Vessel will commence turn away from platform at 200m. with closest approach to face being 75m. Enforce 200m exclusion zone. Prep plot all data on charts and display on helmsman/surveyor VDU. Use USBL tracking for all sensors. Warn of approach to monitor height of grab.	B3
Entanglement	Loss of equipment (grab, wire, beacon)	B3	Abandonment procedure. Weather and forecast for specified period to be taken into consideration.Ensure emergency cutting gear (bolt cutters) available for abort mission for later recovery.	B3
Day grab bucket unloading	Personnel injury (fingers trapped, pinched). Data loss (loss of sample), Equipment damage (to grab mechanism)	C2	Use correct opening operations and wear gloves where possible. Use correct equipment. Fingers clear when opening to avoid pinch situation. Use experienced/competent crew. PPE to be worn, minimise adjacent crew exposure. Regular shift system handling (fatigue avoidance).	B2
Data (contaminated sediment) transfer	Personnel injury (ingestion, inhalation, skin or eye contact). Loss of data (sample)	B3	Deck clear of wire tripping hazards, all hazards marked, use correct manual handling techniques, splash PPE to be worn by all deck staff. Use approved containers with lids and do not overfill sample. Clean clothes in food serving/eating area (good hygiene practice). Isolate area from cross contamination. Freezers/cool boxes to be marked ENVIRIONMENTAL DATA ONLY/NO FOOD STUFFS. Working area to be well ventilated to deck. No non-essential personnel.	B3
Maintenance/repairs/ extended hours (fatigue)	Personnel injury (fingers, toes), loss of concentration (poor sampling, station selection, cleaning of grab).	B3	Follow procedures. Ensure PPE / Comms between all parties and Bridge crew informed of all ops. Regular shift pattern with adequate sleep/rest periods. Observe dedicated meal and coffee breaks with designated clean hands/face wash areas.	B3
Transportation of samples	Loss of data (samples, confusion between samples), project delays, cross contamination and 3rd Party contamination	C3	Label containers with appropriate signs/stickers, complete transportation documentation (TREM), send warning notice to receiver to ensure no unscheduled incidents on opening Seal locking (sealed) transportation boxes.	B3
Environmental impacts: Habitat disturbance	Minor loss of biogenic reef (e.g. *Sabellaria spinulosa*) and sensitive Annex I habitats	C2	Where the scope of the project allows, camera work will be conducted prior to grabbing so that grab samples are not taken from sensitive areas. If Annex I reef is collected in a grab sample, no futher samples will be collected at that station. Note to be made in field note book for records.	B2
Environmental impacts: Loss of equipment	Seabed feature alteration through loss of grab or cables	C2	All slings and lifting apparatus to be inspected every 6 months using LOLA regulations. Grab to be maintined and visually inspected on a regular basis and after each survey day. All moving parts to be maintained using WD40 and appropraite lubricants.	B2
Environmental impacts: Water pollution	The introduction of mechanical maintenance products to the water from the grab (e.g. WD40), formalin spillage.	C1	Minimum necessary amount of lubricants and products to be used on grab and monitor grease build up. Grab to be properly cleaned following each survey and majority of maintenance to happen at Eco Marine.All chemicals to be used with care by staff with training. Formalin should be added to samples using a formalin pump to minimise spillage risk.	B1

SIGNED (RISK ASSESSOR) -	B. Reed	DATE -	24/02/2025

AUTHORISATION : - WORK CAN COMMENCE WHEN CONTROL MEASURES AS IDENTIFIED ABOVE ARE IMPLEMENTED.

RESIDUAL RISK RATING - BLUE - NO FURTHER AUTHORISATION			
RESIDUAL RISK RATING - YELLOW - LINE MANAGER-		DATE -	
INITIAL RISK RATING - RED - DIRECTOR -		DATE -	

Appendix 4. Eco Marine Risk Assessment for camera deployment.

ECO MARINE CONSULTANTS	Eco Marine Risk Assessment Report - Drop down camera operations		
Vessel/ department:	Sea Leopard	Survey code:	RHDMIL0325
Location:	Vessel working deck	Assessment Date:	24-Feb-25
Assessment carried out by:	B. Reed		

This report should be used in conjunction with the Eco Marine risk assessment matrix - CONSEQUENCE x LIKELIHOOD = RISK RATING

TASK / WORK ACTION	ASSOCIATED RISKS	RISK RATING	CONTROL MEASURES	RESIDUAL RISK RATING
Pre launch checks	Personnel injury from moving parts (trapped fingers), trip hazards.	B2	Ensure clean, safe working area. Good housekeeping. Follow set up procedures and wear PPE including gloves.	B2
Connect lifting equipment/wire to camera	Personal Injury (pinched or trapped fingers, head injury from crane/winch wire)/slips, trips and falls	B2	Familiarity and adherence to procedures - top be covered in toolbox talk. Use certified lifting equipment, locking devices in place such as split pins and cable ties. Deployment procedures reviewed. Wear correct PPE.	B2
Electricity	Electrocution, equipment damage, environmental damage	B4	Pre-dive checks to be conducted on the umbilical. Safe distance to be maintained from non-isolated marine cables, electrical testing required. Appropriate shelter and isolation of all electrical equipment.	B2
Lift and launch of camera	Personal Injury (pinched or trapped fingers and toes, wire splinters, bruises, head injuries) / Equipment Damage (to vessel side or camera)	C3	Observe weather limitations for vessel/camera movement when hoisted. Weather forecast should be adequate for the predicted duration of the operation. Adequate manning. Use of tag line (recoverable, i.e. slip) during launch ops. Provide adequate working space and escape routes for emergency situations. For personal injury, this should also include PPE to prevent wire splinters etc. Trained operators only to use the winch/crane.	B3
Persons working close to vessel side	Personal Injury (crushing)/MOB	C4	Use of correct PPE (including lifejacket min. 275N) and determine comms procedure. CCTV should be operational (where available) Erect temporary barrier if applicable - e.g. a gate. Only necessary personnel to be on deck. Only work in conditions with <2m swell and at slack water where possible. Establish MOB procedure. All staff to have undergone STCW95 training.	B3
Lifting heavy equipment	Personal injury and loss of equipment	B4	Lifting only carried out by experienced personnel. Lifting gear specifications to exceed task requirements. Maintain best practice and communications.	B2
Camera on or near seabed	Temporary loss of camera	B4	Ensure communications between pilot/environmental operator and the Bridge. Equipment checks complete, check camera procedures, operation and position. Record coordinates from vessel using DGPS fixes. All plans and charts showing structures onboard and viewed.	B2
Recovery of camera to deck	Personal Injury (pinched or trapped fingers and toes, wire splinters, bruises, head injuries) / Equipment Damage (to vessel side or camera) / invalid sample	C3	Communications to be maintained with camera operator/deck crew at all times. Keep unit low to deck when traversing, in order to maintain instantaneous put-down. Use tag lines, wear correct PPE including hardhat and steel-toe boots, all crew to be aware of crane signals and radio. Trained and competent operators only. Deck Personnel to be aware of avenues of escape should the unit become unstable. All unnecessary personnel to the operation to be in cabin.	B3
Environmental Conditions	Lost (camera)/damaged Equipment (vessel or camera)	C4	Observe weather and sea conditions prior to launch. Camera to be recovered and further operations halted if weather deteoriation predicted. Visibility 500m, max 2m swell. Down wind/current for both vessel and for camera.	B3
Damage to assets	3rd party damage (to platform/structure), vessel damage	B4	Co-ordinate with local asset owners when applying for SSL. Vessel should not commence turn away from any platform at 200m with closest approach to face being 75m. Enforce 200m exclusion zone. Prep plot all data on charts and display on helmsman/surveyor VDU.	B3
Entanglement	Loss of equipment/camera/ROV	B3	Establish abandonment procedure. Weather and forecast for specified period to be taken into consideration.Ensure emergency cutting gear (bolt cutters) available for abort mission for later recovery. Record coordinates from vessel using DGPS fixes to ensure recovery is possible.	B3
Environmental impacts: Loss of equipment	Seabed feature alteration through loss of camera/ROV	C2	All slings and lifting apparatus to be inspected every 6 months using LOLA regulations. Umbilical to be maintined and visually inspected on a regular basis and after each survey day. Observe weather and sea conditions prior to launch. Camera to be recovered and further operations halted if weather deteoriation predicted. Visibility 500m, max 2m swell. Down wind/current for both vessel and for camera.	B2

SIGNED (RISK ASSESSOR) -	B. Reed	DATE -	24/02/2025

AUTHORISATION : - WORK CAN COMMENCE WHEN CONTROL MEASURES AS IDENTIFIED ABOVE ARE IMPLEMENTED.

RESIDUAL RISK RATING - BLUE - NO FURTHER AUTHORISATION			
RESIDUAL RISK RATING - YELLOW - LINE MANAGER -		DATE -	
INITIAL RISK RATING - RED - DIRECTOR -		DATE -	

Appendix 5. Eco Marine Risk Assessment for small vessel operations.

ECO MARINE CONSULTANTS	Eco Marine Risk Assessment Report - Small (day) vessel operations				
Vessel/ department:	Sea Leopard	Survey code:	RHDMIL0325		
Location:	Vessel working deck	Assessment Date:	24-Feb-25		
Assessment carried out by:	B. Reed				
THIS REPORT FORM TO BE USED IN CONJUNCTION WITH RISK ASSESSMENT MATRIX - CONSEQUENCE x LIKELIHOOD = RISK RATING					
TASK / WORK ACTION	ASSOCIATED RISKS	RISK RATING	CONTROL MEASURES		RESIDUAL RISK RATING
Manual handling of heavy gear onto vessel	Back strain	C2	All heavy items to be carried using trolley and lifted with vessel's stern gantry where possible. Lift using best practice and communicate when lifting in pairs/teams.		C1
Handling of equipment (e.g. grab, ROV, DDV camera) at sea	Back strain & pinches	B3	No manual handling gantry system to be employed to any weight exceeding 100kg aboard, winch/HIAB to be used where possible, if not, carfully coordinated and rehearsed plan to be enacted. Eco Marine staff and crew keep clear whilst equipment brought aboard if not assisting. All staff to have undergone safe lift and conduct training. Wear appropriate PPE including gloves, hi vis and hard hats as necessary.		B2
Pinch hazard when securing and discharging equipment (e.g. grab, ROV, DDV camera)	Pinches or bruises	B1	Crew trained to secure equipment once it is safely aboard and located in catching mechanism.Crew to wear heavy duty gloves and briefed to avoid pinch areas. Any non-essential personnel to keep clear until deployable equipment secured and discharged. Appropriate PPE to be worn.		B3
Fall in water when surveying	Water inhalation or drowning	B4	Anyone on deck to wear a lifejacket and full PPE according to vessel regulation. Works not ot be undertaken in swell >2m or in winds meeting or exceeding F4. Staff to have undergone full STCW95 training and to stay centre deck unless absolutely necessary. MOB procedure to be established during toolbox talk each day. CCTV to be used to monitor deck activity where available.		B2
Fall to water when underway	Water inhalation or drowning and hypothermia	B4	Anyone on deck to wear a lifejacket and full PPE according to vessel regulation. Works not ot be undertaken in swell >2m or in winds meeting or exceeding F4. Staff to have undergone full STCW95 training and to stay centre deck unless absolutely necessary. MOB procedure to be established during toolbox talk each day. CCTV to be used to monitor deck activity where available.		B2
Fall to water when in harbour	Water inhalation or drowning and hypothermia	B4	Anyone on deck to wear a lifejacket. Only crewman allowed on foredeck when mooring. Crew to wait until vessel is stationery alongside before going ashore to tie up. All staff to have undergone STCW 95 and First Aid training.		B2
Slipping on spilt liquid	Fractures or bruising	B3	All spills to be mopped up immediately on deck using spill kit and absorbant granules. Wheelhouse decks should have non-slip surfaces. Towels to be located in wheelhouse. All staff to wear appropriate footwear.All staff to have undergone First Aid training.		B1
Slip and trip hazards	Fractures or bruising	B3	All staff to wear suitable footwear. Decks have non-slip surface. All field kit to be stored safely when not in use and walkways to be kept clear. Any obvious hazards to be discussed in toolbox talk and highlighted in bright paint on deck where possible. All staff to have undergone First Aid training.		B1
Fire on board	Risk of burns / death if not controlled	B5	Fire extinguishers should be inspected annually under MCA Coding and operation covered in induction to crew. Fire blankets to be available and fire procedure to be established during daily toolbox talk. All staff to have undergone First Aid training.		B2
Exposure to sun	Sunburn, eye damage, dehydration	C2	All working on deck to cover up even in overcast conditions and apply waterproof sunscreen to any exposed skin. Sunglasses in bright weather and all staff to stay hydrated and take regular breaks.All staff to have undergone First Aid training.		C1
Exposure to cold and wet	Hypothermia	B3	All working on deck to wear warm, waterproof clothes ('oilskin' and multiple thin layers beneath) and take regular breaks. All Eco Marine staff to have undergone First Aid training.		B1
Injuries from equipment	Cuts, bruises, infection	C2	Code of practice for the safety of small workboats and pilot boats. Boat and equipment inspected annually for MCA coding and evidence of maintenance is kept in a maintenance log as part of the coding documentation. All Eco Marine staff to have undergone First Aid training.		C0
Loss of vessel due to weather	Hypothermia, fatality	B5	Surveys only to be carried out in favourable weather conditions (<2m swell; <F4 winds). Forecast for the survey period will be checked prior to departure and updated regularly through VHF and visual observations. If poor weather conditions are expected surveys will be postponed. The boat skipper will have the final say on whether conditions are suitable for survey work to be carried out safely. Life-raft on board meets requirements of code of practice small commercial vessels (MCA coding).		B2
Unfamiliarity with risk on vessel	Minor injuries through to fatality	C3	All new crew and clients are given induction by skipper aboard prior to leaving port. This includes the location and operation of emergency and safety equipment including lifejackets, liferaft, first aid kit, thermal protection aids, flares, fire extinguishers, VHF radio distress calls, abandon ship procedure, the use of appropriate personal safety equipment and safe working practice which covers risk minimisation procedures above. A record should be kept of this induction which individuals sign on completion, confirming that they are fully conversant with instructions. Skipper is responsible for on board safety and all crew, scientific staff and visitors may be directed by him as appropriate. All staff to have undergone STCW 95 and First Aid training.		C1
Environmental impacts: Water pollution	Diesel,oil and sewage spilled into an open water body causing environmental pollution	B4	Vessel should be filled with fuel prior to survey commencement, only reputable contactor and marina utilised for the survey - diesel receipts to be kept by vessel operator for record of consumption. Survey mobilised from marina/port nearest to the survey site to minimise transit time. All maintenance liquids and fuels to be kept stowed sercurely in engine room and engine serviced and maintained regularly. All sewage from vessel stored in spetic tank and disposed of in a responsible manner at licenced facility post-survey. Spill kits will be actioned immediately following any spill and the EA and client will be informed should any hazardous substances enter the environment.		B1
Environmental impacts: Disturbance of sensitive species	Distress to marine mammals and protected bird species on RAMSAR sites due to noise and presence	C3	Steaming speed will be kept to a safe minimum level to reduce noise and potential impact risk to marine mammals and sea birds. If marine mammals are observed, the vessel will slow down until any potential hazard has passed. Speeds will be kept to a minimum around sensitive bird species and will be avoided when sampling intertidal regions.		C1
SIGNED (RISK ASSESSOR) -	B. Reed			DATE -	24/05/2025
AUTHORISATION : - WORK CAN COMMENCE WHEN CONTROL MEASURES AS IDENTIFIED ABOVE ARE IMPLEMENTED.					
RESIDUAL RISK RATING - BLUE - NO FURTHER AUTHORISATION					
RESIDUAL RISK RATING - YELLOW - MASTER, LINE MANAGER, SAFETY OFFICER -				DATE -	
INITIAL RISK RATING - RED - MASTER, SAFETY OFFICER, DIRECTOR -				DATE -	

Appendix 6. Eco Marine Risk Assessment for use of Formalin in the field.

ECO MARINE CONSULTANTS	**Eco Marine Risk Assessment Report - Diluting formalin in the field**				
Vessel/department:	Sea Leopard	Survey code:	RHDMIL0325		
Location:	Vessel working deck	Assessment Date:	24-Feb-25		
Assessment carried out by:	B. Reed				
This report should be used in conjunction with the Eco Marine risk assessment matrix - CONSEQUENCE x LIKELIHOOD = RISK RATING					
TASK / WORK ACTION	ASSOCIATED RISKS	RISK RATING	CONTROL MEASURES		RESIDUAL RISK RATING
Diluting Formalin - from 37% formalin to 4% formalin at sea	Chemicals spilt on clothes	C3	Wear correct PPE (Full PPE, Waterproofs, wellington safety boots, goggles and impermeable gloves). Use a formalin pump at all times where possible. Wash any contaminated clothing before re using PPE.		C2
	Skin contact with chemicals	C3	Wear correct PPE (Full PPE, Waterproofs, wellington safety boots, goggles and impermeable gloves). Use a formalin pump at all times where possible. Wash any contaminated skin with copious amounts of water.		C2
	Eye contact with chemicals	D3	Use a formalin pump at all times where possible. Eye wash bottles available in lab and seek medical attention. Wear impermeable goggles.		C2
	Inhalation	D3	Dilute in a well ventilated area. Wear face mask with appropriate formaldyhyde filters. Seek medical attention if exposed to high concentration for prolonged periods or suffer breathing problems.		C2
	Spill chemcial on floor	D3	Ensure PPE is worn before dealing with the spill. Use spill kit to soak up the liquid. After wash the area with water to remove any trace. Use a formalin pump at all times where possible.		C2
	Damage to the wider environment by contamination	D3	Use of small container in order to minimize the risk of spillage. Controlled volume dispenser (formalin pump) is used to transfer formalin whilst diluting. Formalin transfer takes place within a containable box to avoid spillage.		C2
SIGNED (RISK ASSESSOR) -	B. Reed			DATE -	24/02/2025
AUTHORISATION : - WORK CAN COMMENCE WHEN CONTROL MEASURES AS IDENTIFIED ABOVE ARE IMPLEMENTED.					
RESIDUAL RISK RATING - BLUE - NO FURTHER AUTHORISATION					
RESIDUAL RISK RATING - YELLOW - LINE MANAGER-				DATE -	
INITIAL RISK RATING - RED - DIRECTOR -				DATE -	

Appendix 7. Eco Marine Risk Assessment for intertidal survey operations.

ECO MARINE CONSULTANTS	Eco Marine Risk Assessment Report - Intertidal survey		
Vessel/department:	Field Survey	Survey Code:	RHDMIL0325
Location:	Milford Haven Foreshore	Assessment date:	24-Feb-25
Assessment carried out by	B. Reed		

This report should be used in conjunction with the Eco Marine risk assessment matrix - CONSEQUENCE x LIKELIHOOD = RISK RATING

TASK / WORK ACTION	ASSOCIATED RISKS	RISK RATING	CONTROL MEASURES	RESIDUAL RISK RATING
Travel to and from site/vessel	Road Traffic Accident	B4	Only drivers qualified for the vehicle of choice for transportation shall be allowed to drive and where possible two drivers will be put on each job so that driving duties can be shared reducing the risk of incidents due to tiredness. All use of mobile phones while driving is strictly prohibited - this includes the use of hands free devices.	B2
Access to foreshore – fences (also see sheep, cattle, insect bites & flora risk)	Personal Injury	B2	Identify safe access routes down onto the foreshore. Obtain local knowledge and check with landowners. Wear suitable clothing and footwear.	B2
Currents & Tides	Fast current flood or ebb tide, Personal injury, death	C4	Check currents and tides prior to survey and recheck on arrival at site, and be aware during survey. Staff to work in pairs, mobile phones to be carried, PPE given to staff including lifejackets and mudders. Field team should inform the coastguard of daily position and working activities prior to arriving on site.	B3
Deep water, channels that fill at high tide, fast flows	Personal Injury, drowning, death	C4	Check currents and tides prior to survey and recheck on arrival at site, and be aware during survey. Staff to work in pairs, mobile phones to be carried, PPE given to staff inlcuding lifejackets, informing the coastguard of daily position and working activities. Avoid any flowing water over soft sediment where possible.	B3
Mud/Silt	Personal Injury (stuck in mud, twists, sprains, exacerbating risks, caught by tide)	C4	Wear fitted boots to avoiding losing them in mud, carry something flat to transfer weight on whilst freeing yourself, always work in pairs, carry phones and GPS at all times to advise emergency contacts, wear high visibility jackets. If mud reaches beyond ankle retrace steps and try another route. Carry mudder boots in survey trolley.	B3
Box Corer	Personal Injury (trapped fingers/feet, back strain due to lifting)	B3	Ensure that box corer is lifted correctly bending the kness and not the back. Two people to carry the box corer at a time. Gloves and steel toes cap boots to be worn at all times.	B2
Climate – cold, heat, sun, fog, wind, tides, lightning	Personnel injury (exhaustion, dehydration, sunburn, exposure)	B3	Obtain weather forecast. Adequate clothing for changeable weather, restrict time on intertidal areas, know tide times and leave beach in good time. Wear sunscreen, pack a hat. Take adequate fluids and food. Obtain local knowledge and suitable communications. Rest regulary. Avoid working in storm conditions where thunder and lightning are possible.	B2
Commercial activities – cocklers, bait digging	Personal injury, risk of assault	B2	Identify what commercial activities may take place. Take appropriate measures and avoid confrontational situations.	B2
Unexploded ordance, munitions etc	Personal Injury, Death	B5	All staff are instructed not to touch any objects on the foreshore including ordnance, munitions and other potentially hazardous materials. Presence of all such materials and their GPS locations should be reported to the coastguard.	B3
MOD Operations	Personal Injury/Death	C4	When seeking access permission ask if and when current operations will take place. Avoid the site when operations are in effect. Wear high visibitly clothing at all times.	B2
Dogs	Personal injury (bites, lacerations, *Toxicara canis*)	B3	If threatened back off but do not run away. Avoid contact with faeces. Seek medical advice if bitten.	B3
Effluent i.e. sewage, industrial waste, poor water quality	Physical injury (poisioning, disease, infection and possible death)	B3	Avoid outfalls or obvious polluted areas, wear PPE (i.e. gloves), carrying antiseptic wipes and wash hands before eating. Do not touch eyes, nose or mouth with gloved hands.	A3
Flora i.e. nettles, brambles, thorns, thistles, deadly nightshade	Personal injury (abrasions, stings, poisoning)	B2	Proceed with caution in highly vegetated areas. Wear suitable clothing and footwear. Do not consume or touch mouth or eyes after touching flora.	B2
Insect and snake bites i.e. bees, wasps, midges, horsefly	Personal injury (stings and bites)	B2	Take insect repellent and antihistamines. Be aware and avoid visible nests and long grass.	B2
Marine fauna i.e. weaver fish, crabs, ragworm, jellyfish, seagulls	Personal injury (stings and bites)	B3	Wear gloves and other suitable PPE, use tools to dig in soft sediments. Do not consume or touch mouth or eyes after handling fauna, and handle with care.	B2
Rocky Shore/Rock pools	Personal injury (slips, trips, cuts, trapped limbs)	B4	Be aware when walking across shore of slippery rocks, especially seaweed on rocks. Wear suitable footwear.	B3
Sand and Mudflats	Personal injury (slipping, sinking, depth and flow in gutters)	B3	Use suitable footwear and be aware that there are hidden gullies within the marsh. Avoid walking on unstable sediments.	B3
Sheep, Cattle grazing on salt marsh	Personal injury (disease)	B2	Enquire about potentially dangerous animals. Maintain an awareness of animals and, if in doubt over their behaviour leave site. All material associated with live, diseased or dead animals must be treated with extreme caution and possible contamination arising from contact should be avoided.	B2
Sporting/ recreational activities i.e. sand yachts, kite surfing	Personal injury, risk of assault	B3	Identify what sporting and/or recreational activities may take place. Take appropriate measures including the wearing of high visibility clothing and avoid confrontational situations. Inform any local watersports clubs of surveyors presence. Maintain alertness.	B2
Vehicles including tractors, cocklers	Peronal injury, collision, possible death	C4	Maintain alertness.	B3
Working in close proximity to sea	Drowning, hypothermia and personal injury	C4	Staff to work in pairs, mobile phones to be carried, PPE (Personal Protection Equipment) given to staff, informing the coastguard of daily position and working activities, each surveyor carry a PLB.	B3
Environmental impacts: Habitat disturbance	Minor loss of sensitive Annex I habitats and bird disturbance	C2	Area to be visually inspected prior to any samples being collected to check for sensitive species. Species of conservation interest to be recorded in field notes with coordinates. Avoid bird nesting areas.	B2
Environmental impacts: Loss of equipment	Seabed feature alteration through loss of corers, quadrats etc.	C2	All eqipment to be kept in an intertidal survey trolley so that it is easily located and quickly mobile. All sampling work to be conducted in an orderley manner and with routine at each station.	B2

SIGNED (RISK ASSESSOR) -	B. Reed	DATE -	24/02/2025

AUTHORISATION : - WORK CAN COMMENCE WHEN CONTROL MEASURES AS IDENTIFIED ABOVE ARE IMPLEMENTED.

RESIDUAL RISK RATING - BLUE - NO FURTHER AUTHORISATION			
RESIDUAL RISK RATING - YELLOW - LINE MANAGER-		DATE -	
INITIAL RISK RATING - RED - DIRECTOR -		DATE -	

Eco Marine Consultants Limited Emergency Response Procedure (ERP)

Milford Haven Intertidal Baseline Survey 2025
(Project Code: RHDMIL0325)

Revision History			
Revision Number	**Date of Issue**	**Prepared By**	**Approved By**
0.1	February 2025	Eco Marine	Bethany Reed

ERP Distribution List		
Name	**Role**	**Email Address**
Bethany Reed	Eco Marine Project Manager	bethany.reed@ecomarineconsultants.co.uk
David Alexander	Eco Marine Project Director	david.alexander@ecomarineconsultants.co.uk
Jemma-Anne Lonsdale	Royal Haskoning DHV Project Manager	jemma.anne.lonsdale@rhdhv.com

1.1. Mobilisation Location

Daily mobilisation location: Waterston, Milford Haven, Wales

Mobilisation/demobilisation dates: 31/03/2025 - 03/04/2025

Nearest port: Milford Haven

Nearest harbour: Neyland

Emergency & Medical Contacts:

Marine Contacts		
MRCC Milford Haven Coastguard	Telephone	0344 382 0575
RNLI Angle Lifeboat Station	Telephone	01646 641204

Medical & Healthcare		
Barlow House Surgery (open Mon-Fri, 08.00-18:00)	01646690674	Manchester Square Health Centre, Milford Haven, Pembrokeshire, SA73 2JW
Withybush General Hospital (24 hr)	01437764545	Withybush General Hospital, Fishguard Rd, Haverfordwest, SA61 2PZ
Milford Pharmacy (Mon-Fri, 09:00-17.30)	01646 692027	47-49 Charles Street, Milford Haven, SA73 2AA
Neyland Pharmacy (Mon-Fri, 09:00-17.30)	01646600366	94 High St, Neyland, Milford Haven SA73 1TF

Note to survey staff:

- Grab bag to be kept in an easily accessible location to be outlined during toolbox talk.

1.2. Survey Location

Survey Location: Near Waterston, Milford Haven, Wales (Figure 1)

Survey Dates: 01/04/2025 – 02/04/2025

Survey Area Foreshore Limits (Decimal Degrees WGS 1984):

Station	Latitude	Longitude
Eastern	51.700822	-4.996281
Western	51.703522	-5.010446

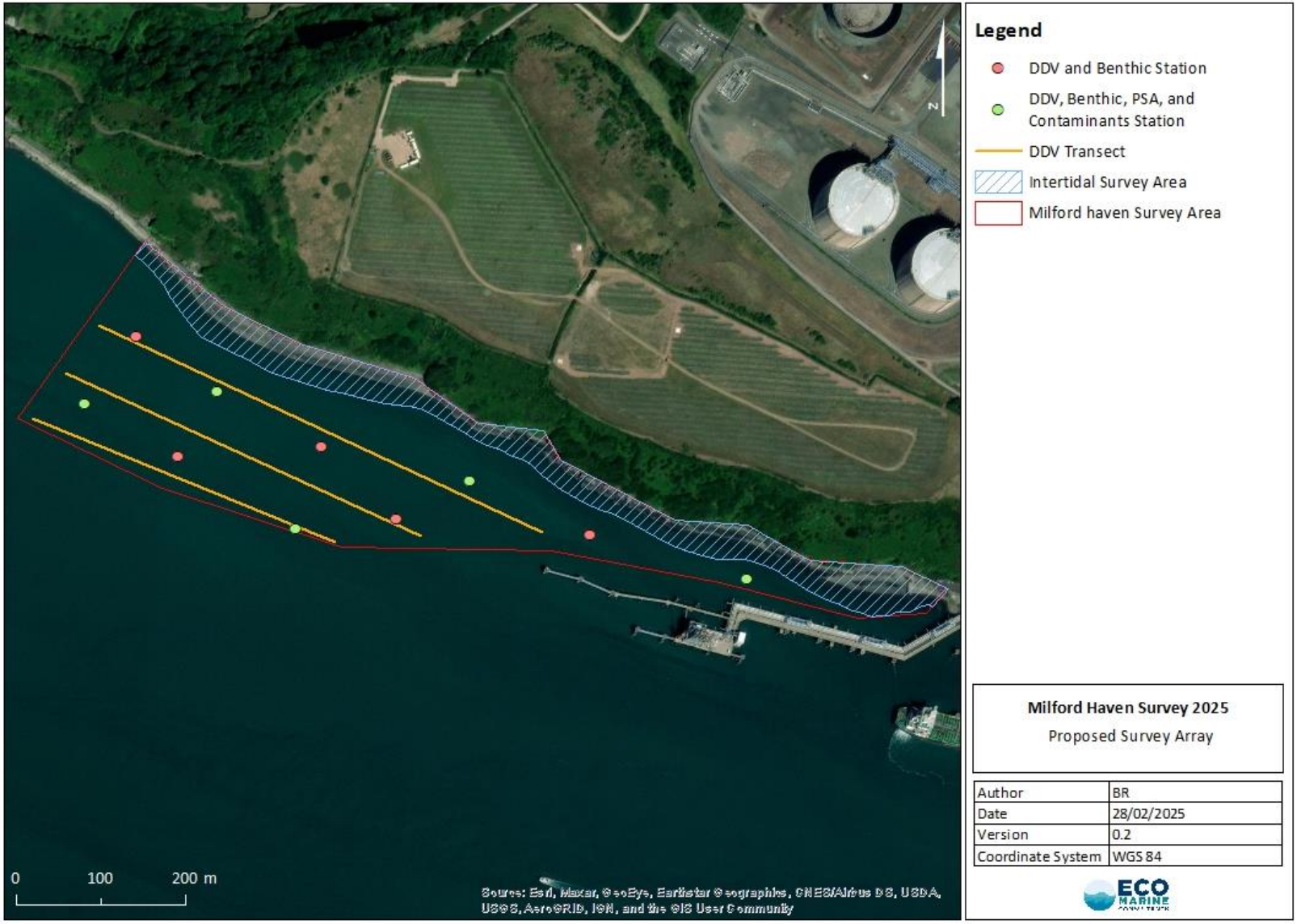


Figure 1. Intertidal survey area within the Milford Haven area of interest, 2025.

1.3. Survey Personnel Contact Details

Field Survey

Eco Marine and Dragon LNG		
Name	**Position**	**Contact**
Bethany Reed	Surveyor	+44 (0) 7412 126875
Luke Goodall	Surveyor	+44 (0) 7979 474490
TBC	Dragon LNG Representative	TBC

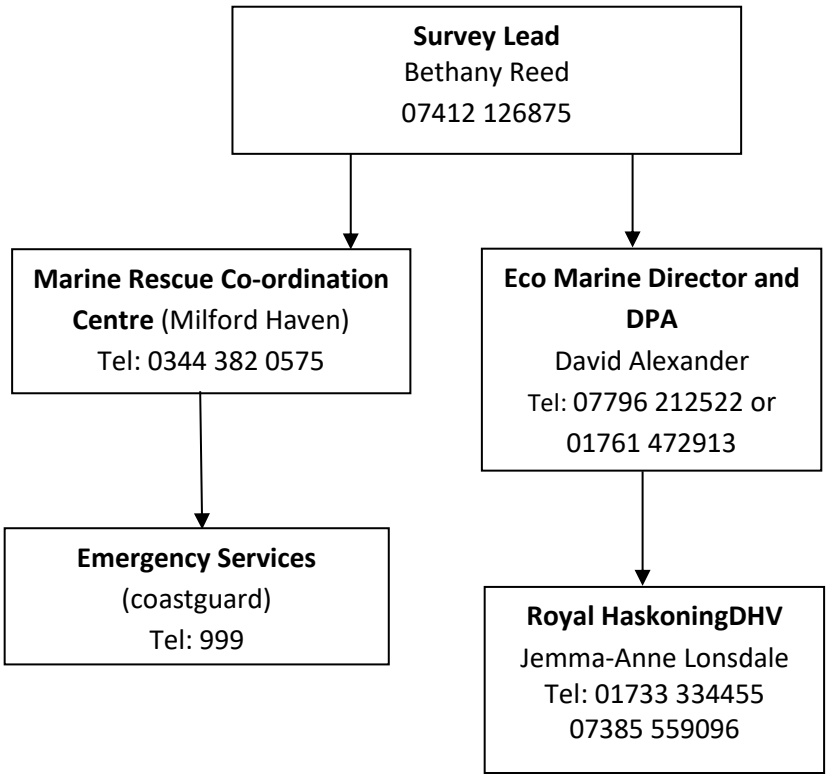
Onshore

Eco Marine		
Name	**Position**	**Contact**
David Alexander	Designated Person Ashore (DPA)	+44 (0) 7796 212522 +44 (0) 1761 472913

Client Contact

Royal Haskoning DHV		
Name	Position	Contact
Jemma-Anne Lonsdale	RHDHV Project Manager	+44 (0)1733 334455 +44 (0)7385 559096

1.4. Emergency Response Flow Diagram and Information



Eco Marine Consultants Limited Emergency Response Procedure (ERP)

Milford Haven Subtidal Baseline Survey 2025
(Project Code: RHDMIL0325)

Revision History			
Revision Number	**Date of Issue**	**Prepared By**	**Approved By**
0.1	February 2025	Eco Marine	Bethany Reed

ERP Distribution List		
Name	**Role**	**Email Address**
Bethany Reed	Eco Marine Project Manager	bethany.reed@ecomarineconsultants.co.uk
David Alexander	Eco Marine Project Director	david.alexander@ecomarineconsultants.co.uk
Jemma-Anne Lonsdale	Royal Haskoning DHV Project Manager	jemma.anne.lonsdale@rhdhv.com

1.1. Mobilisation Locations

Daily mobilisation location: Neyland

Survey Vessel: Sea Leopard

Mobilisation/demobilisation dates: 25/03/2025 - 28/03/2025

Nearest port: Milford Haven

Nearest harbour: Neyland

Emergency & Medical Contacts:

Marine Contacts		
Port of Milford Haven	Telephone	+44(0) 1646 696100 (headquarters) +44 (0)1646 696312 (marina)
	VTS	Channels 12 and 14, call sign "Milford Haven VTS"
MRCC Milford Haven Coastguard	Telephone	0344 382 0575
RNLI Angle Lifeboat Station	Telephone	01646 641204
Neyland Yacht Haven	Telephone	01646 601601

Medical & Healthcare		
Barlow House Surgery (open Mon-Fri, 08.00-18:00)	01646690674	Manchester Square Health Centre, Milford Haven, Pembrokeshire, SA73 2JW
Withybush General Hospital (24 hr)	01437764545	Withybush General Hospital, Fishguard Rd, Haverfordwest, SA61 2PZ
Milford Pharmacy (Mon-Fri, 09:00-17.30)	01646 692027	47-49 Charles Street, Milford Haven, SA73 2AA
Neyland Pharmacy (Mon-Fri, 09:00-17.30)	01646600366	94 High St, Neyland, Milford Haven SA73 1TF

Note to survey staff:

- Chemical spill kit to be stored on deck in an accessible place when chemicals are in use.
- Grab bag to be kept in container on deck in an easily accessible location to be outlined during toolbox talk
- Muster station for vessel: working deck

1.2. Survey Location

Survey Location: Near Milford Haven, Wales (Figure 1)

Survey Dates: 26/03/2025 – 27/03/2025

Target Co-ordinates (Decimal Degrees WGS 1984):

Station	Latitude	Longitude
1	51.702546	-5.01042
2	51.701773	-5.011165
3	51.702049	-5.008945
4	51.701329	-5.009497
5	51.701594	-5.007091
6	51.700694	-5.007364
7	51.700925	-5.00568
8	51.7014	-5.004517
9	51.700978	-5.002375
10	51.700696	-4.999642

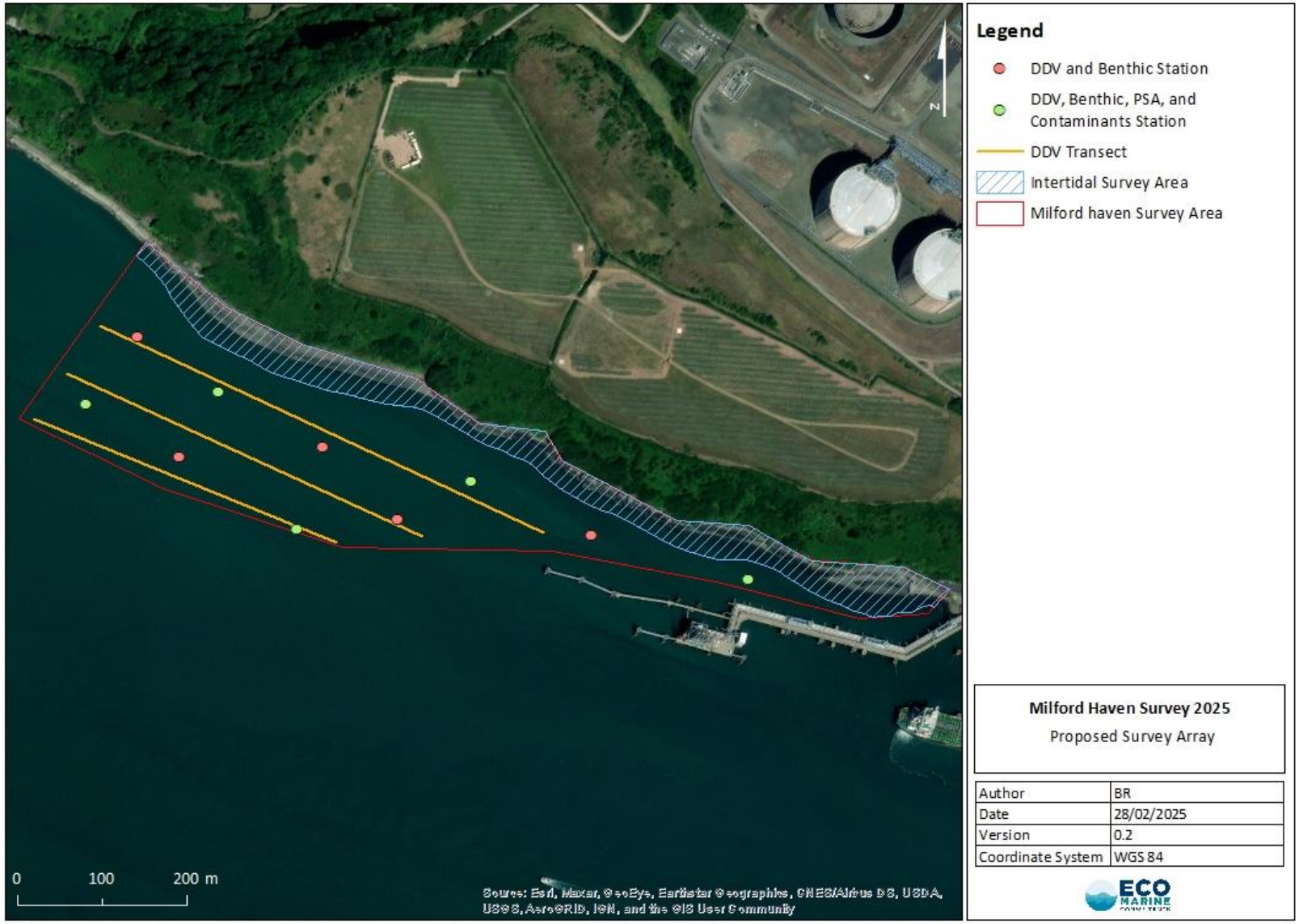


Figure 1. Target stations for drop-down video and grab sampling within the Milford Haven area of interest, 2025.

1.3. Survey Personnel Contact Details

Vessel

Sea Leopard		
Name	**Position**	**Contact**
Bethany Reed	Surveyor	+44 (0) 7412 126875
Luke Goodall	Surveyor	+44 (0) 7979 474490
Willie Thomas	Captain	+44 (0) 7970 873045 +44 (0) 7970 873047

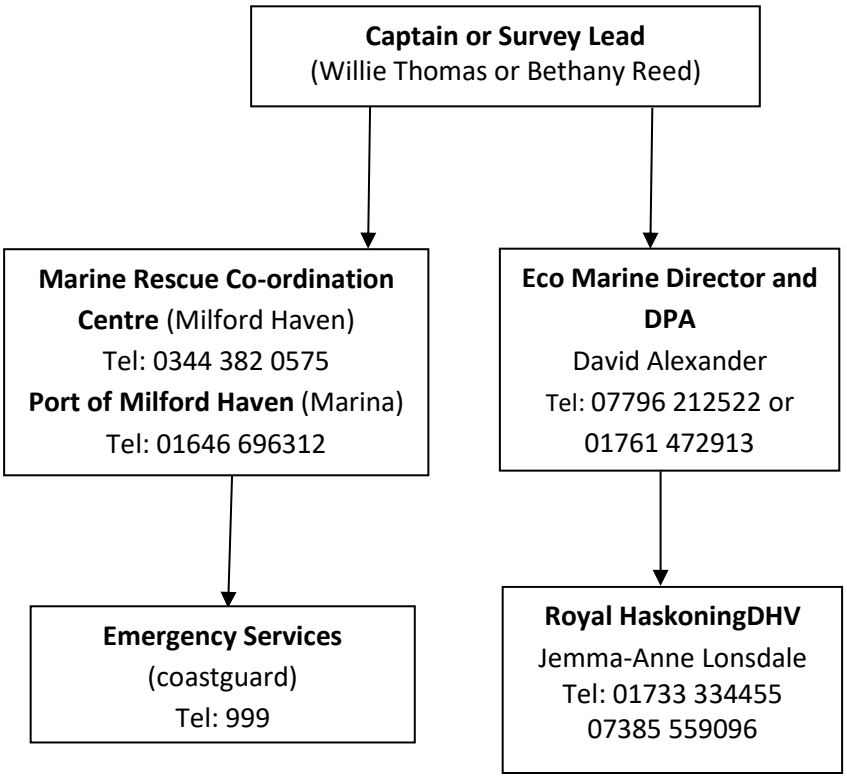
Onshore

Eco Marine		
Name	**Position**	**Contact**
David Alexander	Designated Person Ashore (DPA)	+44 (0) 7796 212522 +44 (0) 1761 472913

Client Contact

Royal Haskoning DHV		
Name	Position	Contact
Jemma-Anne Lonsdale	RHDHV Project Manager	+44 (0)1733 334455 +44 (0)7385 559096

1.4. Emergency Response Flow Diagram and Information



Appendix 9. Eco Marine subtidal and interidal toolbox talk templates

Intertidal Toolbox Talk - Sign-off Sheet

Survey:	**Location:**	
Date:	**Time:**	**Weather:**

Topics Covered:
VHF radio use (channel 16)
First aiders
Tide times
Grab bag location and contents
Survey methods, personnel responsibilities & timeframes
Unexploded ordnance (UXOs) protocol
Appropriate PPE

Issues Arising:

Control Measures:

Name	Role	Signed	Date

Appendix 9. Eco Marine subtidal and interidal toolbox talk templates

Subtidal Toolbox Talk - Sign-off Sheet

Survey:	**Vessel:**	
Date:	**Time:**	**Weather:**

Topics Covered:

Fire evacuation procedure & muster lcoation
First aiders
Liferaft location
Spill kit & grab bag location
Survey methods, personnel responsibilities & timeframes
Unexploded ordnance (UXOs) protocol
Appropariate PPE

Issues Arising:

Control Measures:

Name	Role	Signed	Date

Appendix 10. Eco Marine Risk Assessment matrix for calculating specific task risks

Eco Marine Consultants Ltd Risk Assessment Matrix

	Risk Category					Probability of risk occurring				
						Very improbable	Slight possibility	Distinct possibility	Reasonable possibility	Near certainty or certainty
	Personnel	**Assets & Equipment**	**Environmental Implications**	**Company Reputation**	**Consequence rating**	**A**	**B**	**C**	**D**	**E**
Consequence	No injury	No damage	No effect	No impact	**0**					
	Slight injury	Slight damage	Slight effect	Slight impact	**1**					
	Minor injury	Minor damage	Minor effect	Minor impact	**2**					
	Major injury	Moderate damage	Moderate effect	Moderate impact	**3**					
	Single fatality	Major damage	Major effect	Major impact	**4**					
	Multiple fatalities	Massive damage	Massive effect	Massive impact	**5**					

	Task may proceed as outlined.
	Task should proceed with measures to ensure that risk is as low as reasonably practicable.
	Task cannot continue without significant corrective action. Senior management must approve task.