Generic risk assessment: intertidal soft sediment work

Risk assessment 193\_06 Issued 25/09/2018

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| What’s this document about? | The purpose of this generic risk assessment is to identify the common significant risks to which our employees are exposed when working on foot on intertidal soft sediments, or using vehicles in intertidal areas and to identify the appropriate control measures. Soft sediments include sinking muds and fluid sands.  The Generic Risk Assessment (GRA) relates to the time on foot on the intertidal area and the use of vehicles in intertidal areas only. It does not cover use of vessels. |

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| Who does this apply to? | This generic risk assessment applies to everyone working in intertidal soft sediment environments (including soft sediment parts of salt marsh). This includes:   * Environmental Monitoring (Sampling & Collection) teams * Environmental Monitoring (Analysis & Reporting) Teams * Estuarine & Coastal Monitoring & Assessment Service (ECMAS) |

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| Contact for queries and feedback | * If you have any queries, or would like to give any feedback, about this document then please use the following link [anonymous feedback](http://intranet.ea.gov/33345.aspx). |

#### Task risk assessment

Intertidal soft sediment work

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| Task element | | Hazard and harmful effect | | Likelihood information | | Initial risk level | | | | | | Control measures | Controlled risk level for employee | | | | | | |
| Severity (S) | | Likelihood (L) | | Risk level (RL) | | Severity (S) | | Likelihood (L) | | Risk level (RL) | | |
| Working in intertidal soft sediment environments to collect samples or carry out field recording/site visits including use of quadrats or photography for example.  Continues on next page. | | Risk of officer getting stuck in the mud | | Sinking into the soft sediment will occur, the consistency of the sediment determines how much. In addition, the extra weight of carrying samples exacerbates the sinking, as will standing still to take samples. | | 3 | | 2 | | 6 | | Dynamic Risk Assessments must be carried out throughout sampling period. For example, changes in weather, such as sudden fog/mist will significantly increase the risks.  A supplementary Site Risk Assessment and site information Report must be produced for all intertidal soft sediment sites, it must include a site plan with unsafe areas, access/egress points and local tidal conditions must marked. Local tidal conditions must also be included. Review the site information report on every visit to the site and amend it as necessary.  It is essential that you are physically fit. | 2 | | 2 | | 4 | | |
| Working in intertidal soft sediment environments continued… | | Risk of officer getting stuck in the mud | | Sinking into the soft sediment will occur, the consistency of the sediment determines how much. In addition, the extra weight of carrying samples exacerbates the sinking, as will standing still to take samples. | | 3 | | 2 | | 6 | | All staff carrying out intertidal soft sediment work must read the ‘Site Risk Assessment’ and ‘Site Information Report’ prior to visiting the site.  Untrained staff must go through the competency procedure as described in [13\_07 Intertidal soft sediment sampling](http://intranet/ams_document_library/2007/001_050/13_07.doc).  A competent officer, who knows the site well and is able to sign-off competency, must accompany staff developing competency.  The ratio of competent to inexperienced officers is 1:1. Complete training and competency requirements are listed in [13\_07 Intertidal soft sediment operational instruction.](http://intranet/ams_document_library/2007/001_050/13_07.doc)  All staff must be able to use and understand tide tables [T11 Understanding tides and tide tables](https://www.ea-training.org/apps/ocd/flyer.php?id=214).  Take a pole to test depth of mud ahead.  When traversing new or uncertain areas, one individual should lead with others following in foot steps behind.  Samplers should take aids to help in getting unstuck such as sledge, large clipboard. These provide a large surface area to lean or sit on and spread weight to allow you to work foot free of mud. | | | 2 | | 2 | | 4 |
| Working in intertidal soft sediment environments continued… | | Risk of officer getting stuck in the mud | |  | | 3 | | 2 | | 6 | | If stuck try spreading your weight by lying on your back and rolling free. You can also try removing your footwear which is stuck and leave it behind.  On getting yourself unstuck retreat to a safe area | | | 2 | | 2 | | 4 |
|  | | Being caught by the tide | | Site is tidal and can be subject to rapid flooding. | | 3 | | 3 | | 9 | | Do not sample on flooding tide.  Take account of tide times, local tidal conditions and distance to travel. Allow plenty of time to get to and from the sampling site(s).  Only sample during daylight hours.  Follow [14\_10 Selecting, using and maintaining lifejackets and buoyancy aids](http://ams.ea.gov/ams_root/2010/01_50/14_10.doc) when deciding when to wear a standard lifejacket.  Wear or carry a high visibility waist jacket.  Wear correct Personal Protective Equipment (PPE) and close-fitting footwear.  Be in a safe place on or before low water.  If you cannot get off the mudflat, call for Emergency Services on 999 and ask for the Coast Guard | | | 3 | | 1 | | 3 |
| Working in intertidal soft sediment environments continued… | | Musculo-skeletal injuries due to walking long distances on the mud and carrying sampling equipment | | Whilst walking through mud a foot can become stuck. If foot is in an awkward position when trying to free it, this may apply pressure to joints, resulting in injury.  This will be exacerbated when carrying extra weight.  Injury can hamper the time taken to get to a safe place | | 3 | | 2 | | 6 | | Wear close-fitting footwear.  Use backpacks of a limited size and use them only to carry essential communications and position finding equipment, a survival bag and a small field first aid pack.  Consider using a small, light sledge to transport sampling equipment and samples.  If you cannot get off the mudflat on or before low water, call 999 and ask for the Coast Guard. | | | 2 | | 1 | | 2 |
| Working in intertidal soft sediment environments continued… | | Fatigue | | Walking through mud quickly becomes physically tiring, due to having to break suction between foot and mud on each step.  Carrying equipment and samples. | | 2 | | 3 | | 6 | | Do not take part in this task if you are suffering from any medical condition that causes shortness of breath or have back, leg, or joint injuries.  Consider the use of a vessel, or hovercraft, in place of sampling on foot to reduce walking distances.  When planning a survey, include increased time and effort that will be required to reach sites across soft sediment. Reduce survey on the day if necessary to avoid getting overtired.  Minimise the amount of equipment being physically carried. Consider using manual handling aids such as a sledge to transport sampling equipment and samples.  Consider using Mudders to assist walking across soft sediment. Mudders work by reducing the suction effect when walking on soft mud.  Important notes about Mudders:  Mudders must not be used to access areas that you would be otherwise unable to walk on. They must not be used to control the risk of getting stuck in mud.  The use of Mudders is optional and often dependent on user preferences. | | | 1 | | 2 | | 2 |
| Working in intertidal soft sediment environments continued… | | Fatigue continued.. | |  | |  | |  | |  | | Mudders have the potential to act as an anchor if you become stuck in the mud. You must therefore understand the limitations of Mudders and the types of sediment they are unsuitable for before using them. This experience must be gained by attending a mandatory training day for using Mudders in soft sediment.  If you do choose to wear Mudders®, you must carry flat blunt ended scissors or a blunt ended knife (preferred as scissors can sometimes be ineffective in mud) to cut the webbing in an emergency. | | |  | |  | |  |
|  | | Risk of grounding:  When vessels are used to access sites there is a risk of the vessel grounding. | | In order to access intertidal soft sediments for sampling, a vessel will have to go into very shallow water. | | 2 | | 1 | | 1 | | Consider the use of a hovercraft to allow more time on site with safe egress. | | | 1 | | 1 | | 1 |
| Working in a remote environment | | Being remote from available assistance.  Inability to summon help | | Nobody else is likely to be on the mud/sand flat.  Mobile phone networks do not always cover these areas. | | 3 | | 2 | | 6 | | Follow STAFFCALL lone working call-in procedure.  You must have agreed communications in place with a nominated person ashore. This is compulsory for all intertidal soft sediment work.  Minimum of 2 people on site. They must be in visual contact with each other, and each must have a reliable means of communication.  You must have a guaranteed method of communication. Ensure the mobile phone network is covered in the sampling area.  If a mobile phone network is unavailable, use satellite phone, and/or shore cover.  Use of SPOT® Satellite GPS Messengers should be considered as a secondary means of raising an alarm.  Note: You must maintain communication with shore cover by way of two-way radios.  Consider use of a boat or hovercraft. | | | 1 | | 1 | | 1 |
| Using vehicles in an intertidal zo. | | Risk of vehicle being stranded in an intertidal zone due to mechanical failure or getting stuck.  Danger to staff.  Potential damage to the environment.  Loss of vehicle.  Reputational risk. | | The consistency of intertidal substrates can change dramatically with a reasonable likelihood of a vehicle getting stuck.  Stranding due to mechanical failure is low risk but can happen. | | 3 | | 2 | | 6 | | Vehicles must only be used in inter-tidal areas as a last resort and only under exceptional circumstances e.g. where there is no practical alternative and the work is deemed to be essential\*.  Vehicles must not go into intertidal areas under any circumstances unless there is a predominance of hard sandy substrate and the sample site is predominately firm ground.  Where vehicles are to be used in inter-tidal areas the following must be undertaken;  a rationale for their use must be presented, reviewed and signed off by the team leader. A copy of this must be stored with the ‘Site Information Report’ ([13\_07 Intertidal soft sediment sampling](http://intranet/ams_document_library/2007/001_050/13_07.doc)).  a ‘Recovery Plan’ ([13\_07 Intertidal soft sediment sampling](http://intranet/ams_document_library/2007/001_050/13_07.doc)) must be drawn up to cover any eventualities e.g. mechanical breakdown or vehicle becoming stuck. | | | 3 | | 1 | | 3 |
| Using vehicles in an intertidal zone continued… | | Risk of vehicle being stranded in an intertidal zone due to mechanical failure or getting stuck.  Danger to staff.  Potential damage to the environment.  Loss of vehicle.  Reputational risk. | | The consistency of intertidal substrates can change dramatically with a reasonable likelihood of a vehicle getting stuck.  Stranding due to mechanical failure is low risk but can happen. | | 3 | | 2 | | 6 | | \*Launching boats from a slipway is classed as using a vehicle in an intertidal area and a ‘Recovery Plan’ is required.  If driving along or parking on an area of beach etc that is above the highest expected tidal level for a particular site then these conditions will not apply. However, the highest expected tidal level must be established during the site selection / review process, be clearly indicated on a map and included in the ‘Site Information Report.’ In this instance a ‘Recovery Plan’ is not mandatory but recommended.  Staff must have the required training (must be in date) and competencies for driving 4x4 vehicles and/or trailers off-road. | | | 3 | | 1 | | 3 |

Related documents

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| Links | * [13\_07 Intertidal soft sediment work](http://ams.ea.gov/ams_root/2007/001_050/13_07.doc) * [37\_04 Fieldwork GRA](http://intranet.ea.gov/ams_document_library/04/4_07_health_and_safety/hs_risk_assessments/37_04.doc) * [236\_06 Safe management of lone and remote workers](http://intranet.ea.gov/ams_document_library/04/4_07_health_and_safety/hs_procedure/236_06.doc) * [718\_06 Lone/remote working instruction](http://intranet.ea.gov/ams_document_library/2006/701_750/718_06.pdf) * [730\_06 Working from a boat](http://intranet.ea.gov/ams_document_library/2006/701_750/730_06.pdf) * [426\_05 Working in or near water GRA](http://intranet.ea.gov/ams_document_library/04/4_07_health_and_safety/hs_risk_assessments/426_05.doc) * [07\_10 GRA – Fieldwork in rural location](http://ams.ea.gov/ams_root/2010/01_50/07_10.doc) * [06\_10 GRA - Boatwork](http://ams.ea.gov/ams_root/2010/01_50/06_10.doc) * [706\_06 Working sun and heat](http://ams.ea.gov/ams_root/2006/701_750/706_06.pdf) * [701\_06 Personal protective equipment (PPE)](http://10.57.51.116/ams_root/2006/701_750/724_06.pdf) * [725\_06 Fieldwork](http://ams.ea.gov/ams_root/2006/701_750/725_06.pdf) * [14\_10 Selecting, using and maintaining lifejackets and buoyancy aids](http://ams.ea.gov/ams_root/2010/01_50/14_10.doc) * [573\_09 Lone/Remote Workers- How to use staffcall](http://10.57.51.116/ams_root/2009/551_600/573_09.doc) * [Environmental Monitoring - Marine & Fresh Waters Community of Practice](https://defra.sharepoint.com/teams/EA01/020/Pages/Welcome.aspx) |