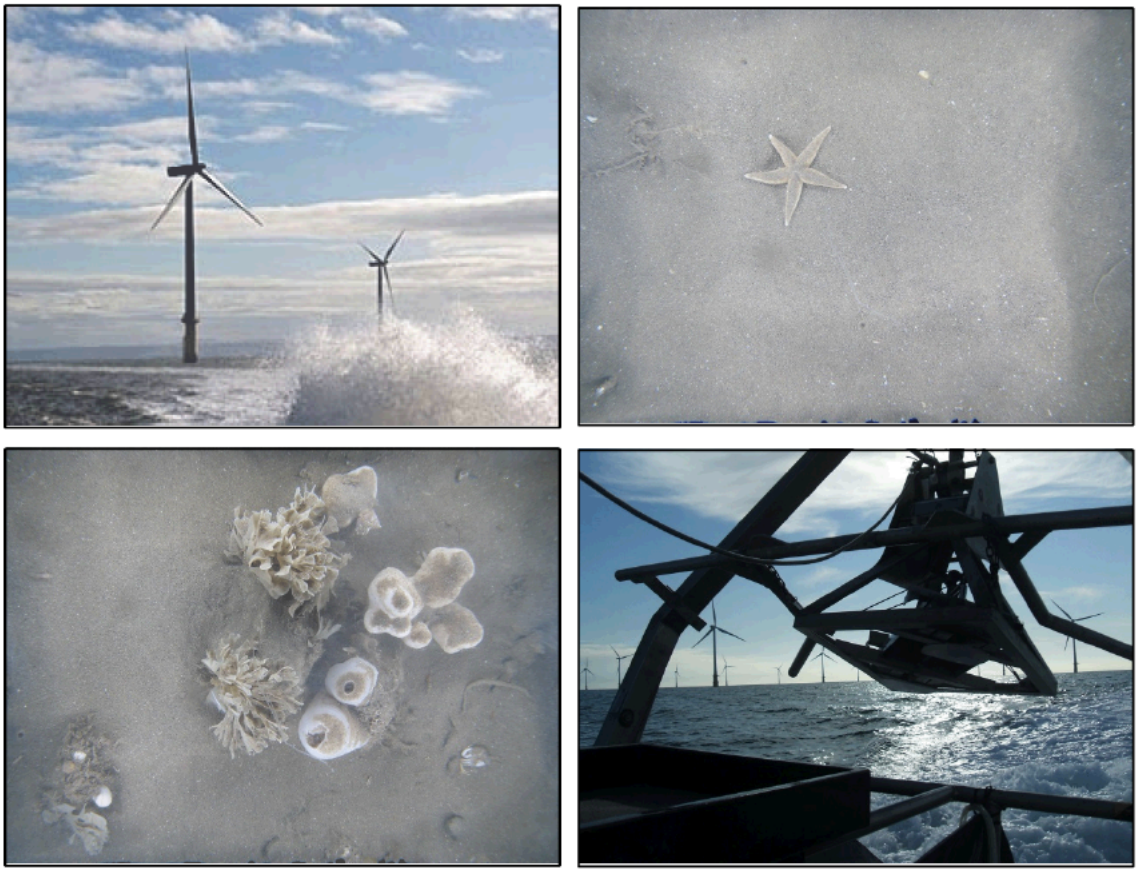
SHETLAND ISLANDS COUNCIL

Toft Pier Development Dredge Disposal Area Camera Survey



Toft Pier Development Dredge Disposal Area Camera Survey Report

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ISO 9001
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Contents

1. Introduction

1.1. This report is to accompany assessment of the Best Practicable Environmental Option (BPEO) for the disposal of dredge material arising from the proposed quay extension and associated capital dredging of Toft Harbour on Shetland.

1.2. Shetland Islands Council is seeking a Marine Licence for capital dredging within Toft ferry terminal area to support the expansion of the fishing landing quay at this location.

1.3. The estimated dredging volume is 11,800wt and dredging will not exceed 2m in depth.

1.4. The Toft ferry terminal is located on the north eastern side of Shetland's main island and is a key location in the inter-island ferry transport network. The work proposed at the Toft terminal will be to expand and enhance the attached fishing jetty to allow the safe access for local fishing vessels, which is not currently provided by the existing quay.

1.5. There are currently two potential options for disposal of the dredged material arising from the Toft Ferry Terminal capital dredge works, Option 1 – Removal to land disposal site, and Option 2 – Marine disposal. Disposal at sea is considered to be the most appropriate option for the capital dredge from Toft as it will have significantly less impact on the local community, transport network and will reduce the time to undertake the entire works process. The offshore disposal site (FI120) is shown in Figure 1. At the closest point, the disposal site is approximately 3km to the north west of the dredge area. The site is currently classified as disused; however this classification is understood to be due to lack of use rather than environmental concerns or capacity constraints.

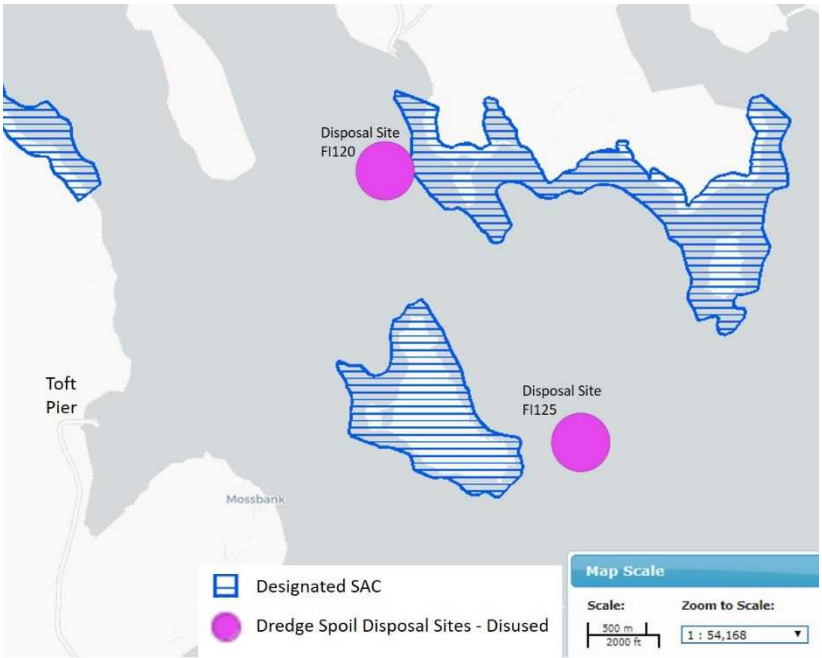

Figure 1. Toft disposal site FI120.

1.6. The Yell Sound Coast SAC adjacent to Disposal Site FI120 is designated for otter and harbour seal, there are no Annex I habitats present as qualifying features.

1.7. A BPEO has been submitted together with survey footage and an application for disposal at sea to Marine Scotland Licensing and Operations Team, as required by the Marine (Scotland) 2010 Act.

1.8. This report further details survey operations, which involved Remotely Operated Underwater Vehicle (ROV) video deployment and subsequent review of the survey data by marine biologists.

2. Survey Methodology

2.1. An underwater video survey using a Remotely Operated Vehicle (ROV) (Saab Seaye Falcon) was undertaken over a 2 day period in January 2019 by Ocean Kinetics from the survey vessel M/V Alluvion. The aim of the survey was to determine the bed material at the disposal site and identify the presence of potential primary marine features / Annex I habitats. The survey comprised of an ROV video recording along a predetermined transect, approximately 1km in length, running through the dredge disposal zone (Figure 2).

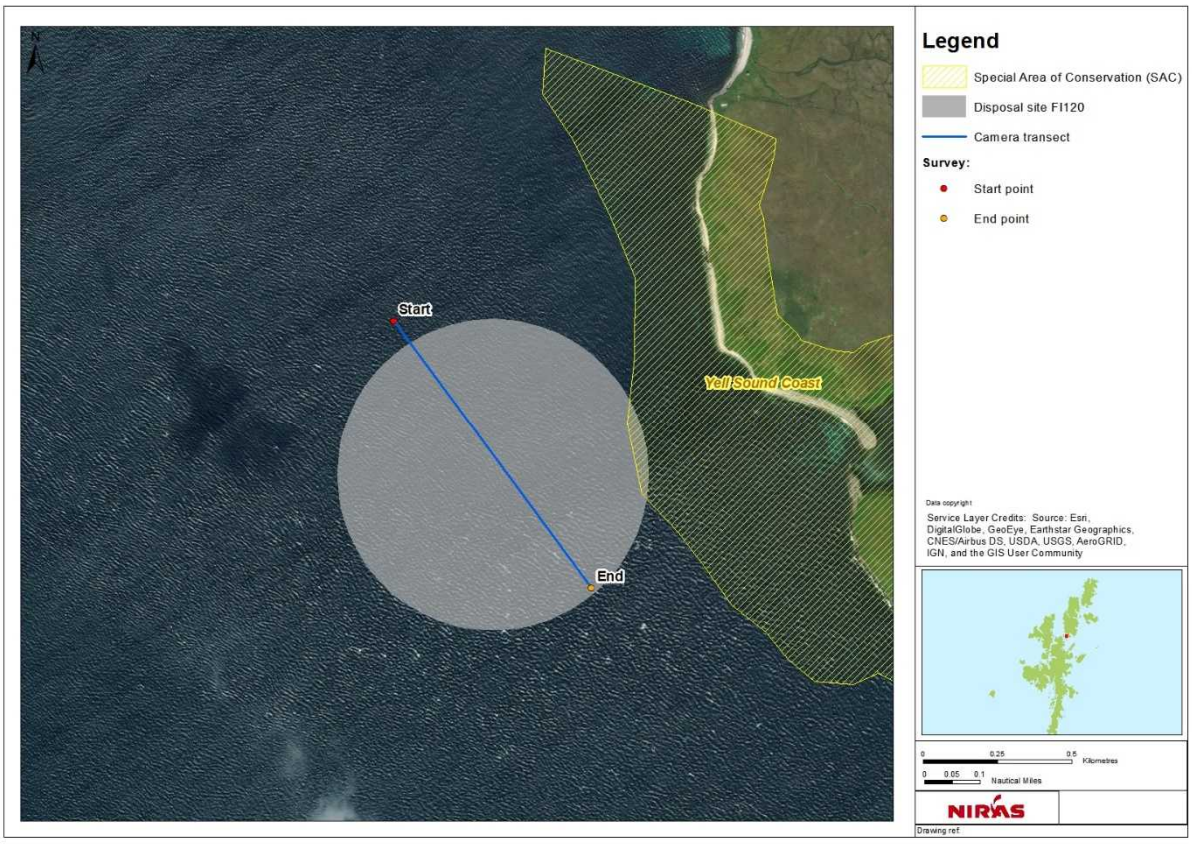

Figure 2. Survey transect within disposal area FI120

2.2. Survey conditions on site proved challenging over the course of the 2 day survey using the ROV, with it only being possible to obtain survey footage on 19/01/2019 when calmer conditions and

a slacker tide coincided. There was also an issue recording the raw video feed on board the survey vessel and as such a secondary recording had to be made indirectly from a display screen reducing the resolution of the recorded footage and resulting in a loss of colour footage.

2.3. The target start and end positions were respectively:

North West Point	Latitude: 60.489	Longitude: -1.163
South East Point	Latitude: 60.485	Longitude: -1.157

3. Assessment

3.1. The ROV survey indicates the sea bed in this area is predominantly hard substrate, shell, with small pockets of coarse sediments located within depressions in the hard substrate. Some mobile sand waves were present in the northern section of the disposal zone, indicating the presence of soft, mobile sediment in this area.

3.2. Given the aforementioned issue recording the raw feed on board the survey vessel the footage is difficult to interpret because of the relatively low quality; however, having reviewed it as carefully as possible we feel that it is possible to draw some conclusions which we have summarised below.

Horse mussel (*Modiolus modiolus*)

3.3. There may be empty *Modiolus* shell, although very limited numbers. It is not possible to tell directly if there are live individuals. Horse mussels often tend to embed, which would not be apparent at the resolution available; however, if there had been a more extensive colonisation of the site by this species then one would expect there to be more evidence of dead shells than is apparent (Figure 3).

Figure 3. Potential empty *Modiolus* shell seen at 3 minutes 54 seconds in video footage.

3.4. There is also generally a relative lack of associated epiflora and epifauna such as one might expect with a reef and, although more difficult to ascertain, no apparent topographical variation which might occur if sediments were being stabilised by the mussels.

3.5. This conclusion is also supported by marine specialists at Scottish Natural Heritage (SNH, email from Jonathan Swale dated 29 March 2019):

3.6. *"We agree with your assessment of the video with regard to Modiolus, i.e. that the absence of epifauna and epiflora and relative scarcity of dead shells indicates that horse mussels are unlikely to be present in sufficient concentrations to constitute a PMF horse mussel bed."*

Maerl

3.7. There may be maerl present (granular structure between 4 minutes 50 seconds and 5 minutes 15 seconds (Figure 4) into the video and again near the end of the transect between 11 minutes 30 seconds and 12 minutes 6 seconds (Figure 5)). This could equally be gravel or similar but potentially patches of maerl.

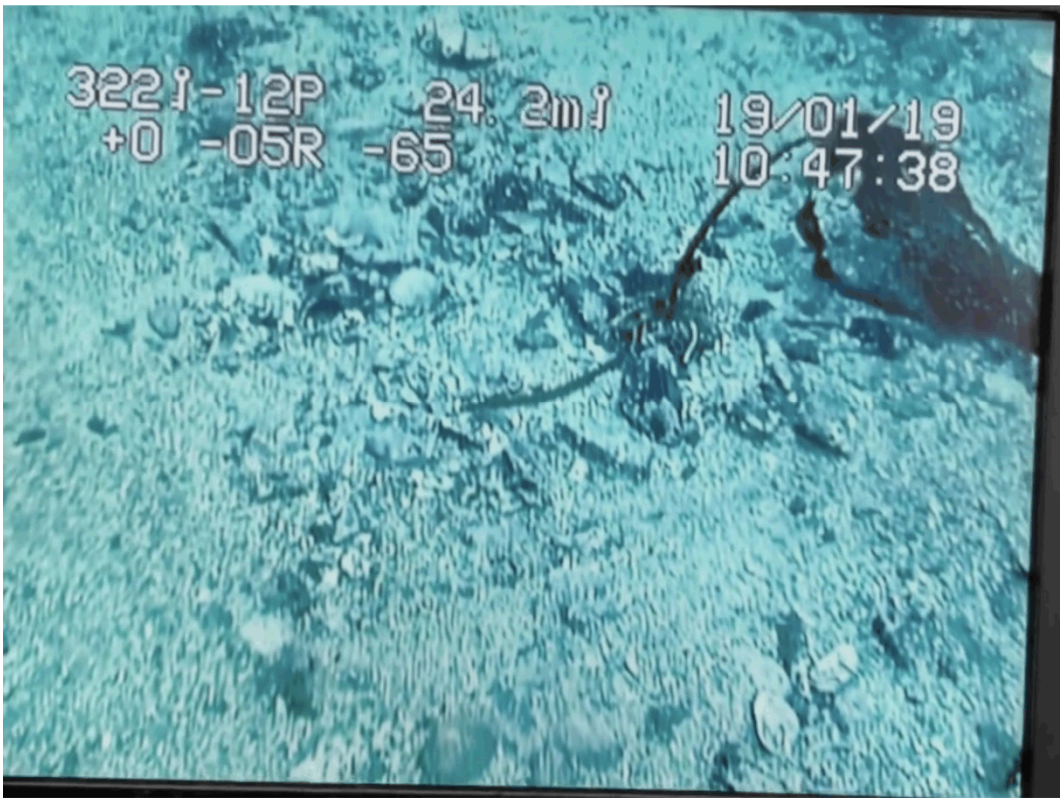

Figure 4. Potential Maerl seen at 4 min 59 seconds in video footage.

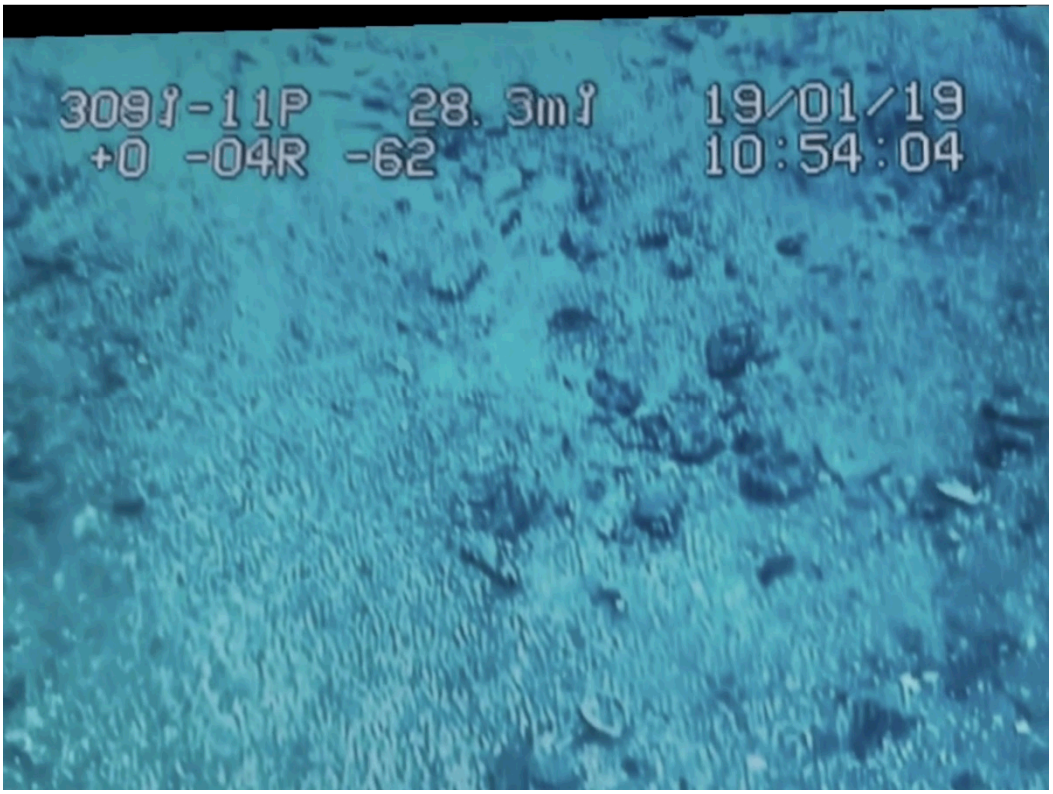

Figure 5. Potential Maerl seen at 11 min 42 seconds in video footage.

3.8. Due to the lack of colour it cannot be determined whether the feature, if present, is alive or dead; however, if it is maerl then the patches appear relatively small.

3.9. In relation to the potential presence of maerl, marine specialists at SNH (email from Jonathan Swale dated 29 March 2019) have commented:

3.10. *''Although maerl, if it is present, only occurs as small patches it could nevertheless still be a PMF (20% cover of thalli over an area greater than 5 metres by 5 metres would constitute a maerl bed), but as it is very localised it may be possible to avoid those areas.''*

4. Recommendations

4.1. Site FI120 is a historic disposal site. It is understood to have last been used for marine sediment disposal in 2004 and was closed over ten years ago. The potential colonisation by maerl, indicated at two locations in Figure 6, appears relatively limited but colonisation outside the immediate area of the transect cannot be commented upon.

4.2. If colonisation by maerl has occurred this demonstrates the site's ability to recover over time from use for dredge disposal. We propose that the site can reasonably be used to receive sediments from the Toft Pier development but that material should be deposited in a targeted manner in the central portion of the disposal site, avoiding as far as possible the potential maerl areas.

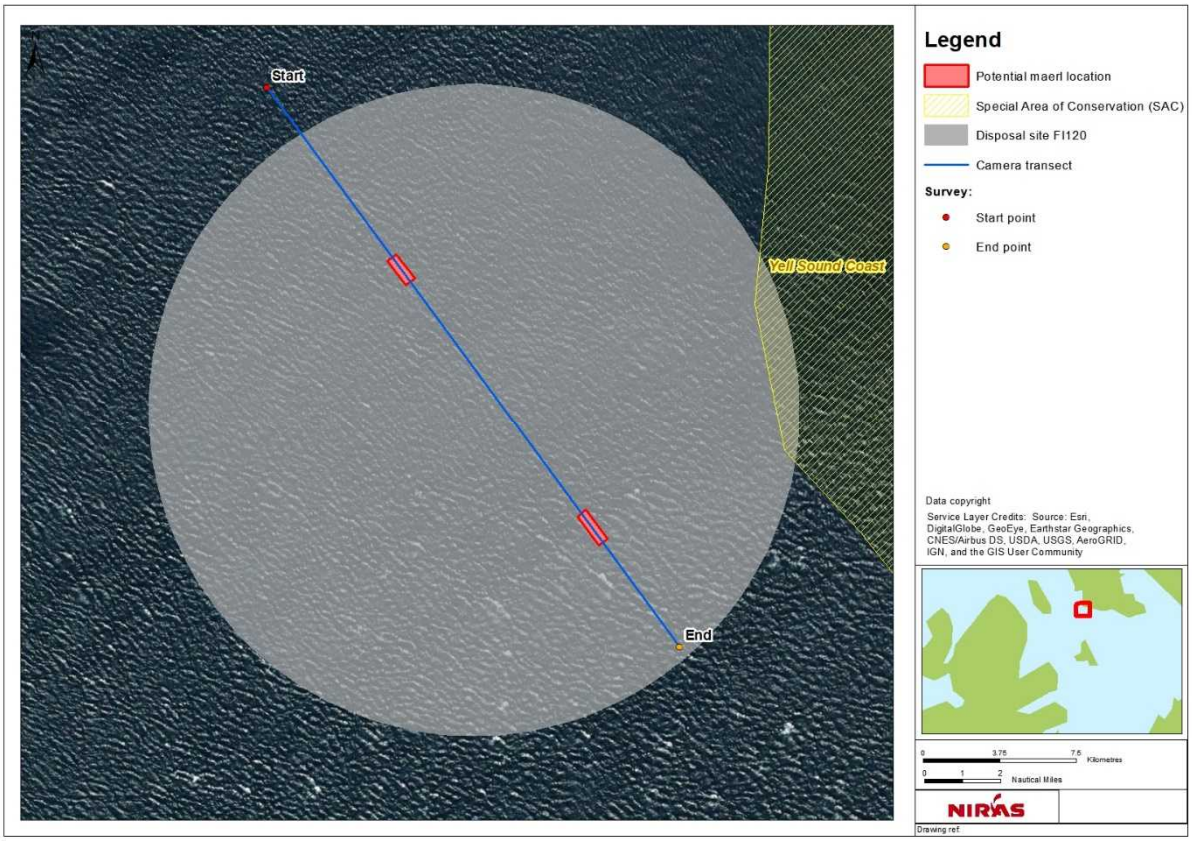

Figure 6. Potential areas of maerl identified during ROV survey.

4.3. It is proposed to undertake a post disposal drop down or towed video (depending on site conditions) survey, repeating the January 2019 ROV transect (Figure 2). Further camera drops or tows would be added, parallel to the original transect and covering the utilised disposal area and any areas of maerl or other interest features identified in the post disposal survey.

4.4. The post-construction survey is proposed to take place within a period of 2-3 months after dredge disposal, unless this pushes the programme into winter whereupon delay until the following spring or summer would be sensible.