| 4040000000 - Dunnet WwTW Outfall- Ecology walkover | |
|---|---|
| **Autocode / Project title:** 4040000000 - Dunnet WwTW outfall and PAA Dosing de-commissioning | |
| **Survey Type:** Ecology walkover | Redacted |
| **Survey Date:** 06 September 2018 | **Weather conditions:** At start – 5/8 cloud, 13° C,NW 1(G2) |
| **Location:** West Dunnet, Thurso KW14 8YD (Grid Reference: ND 21259 71068) | |

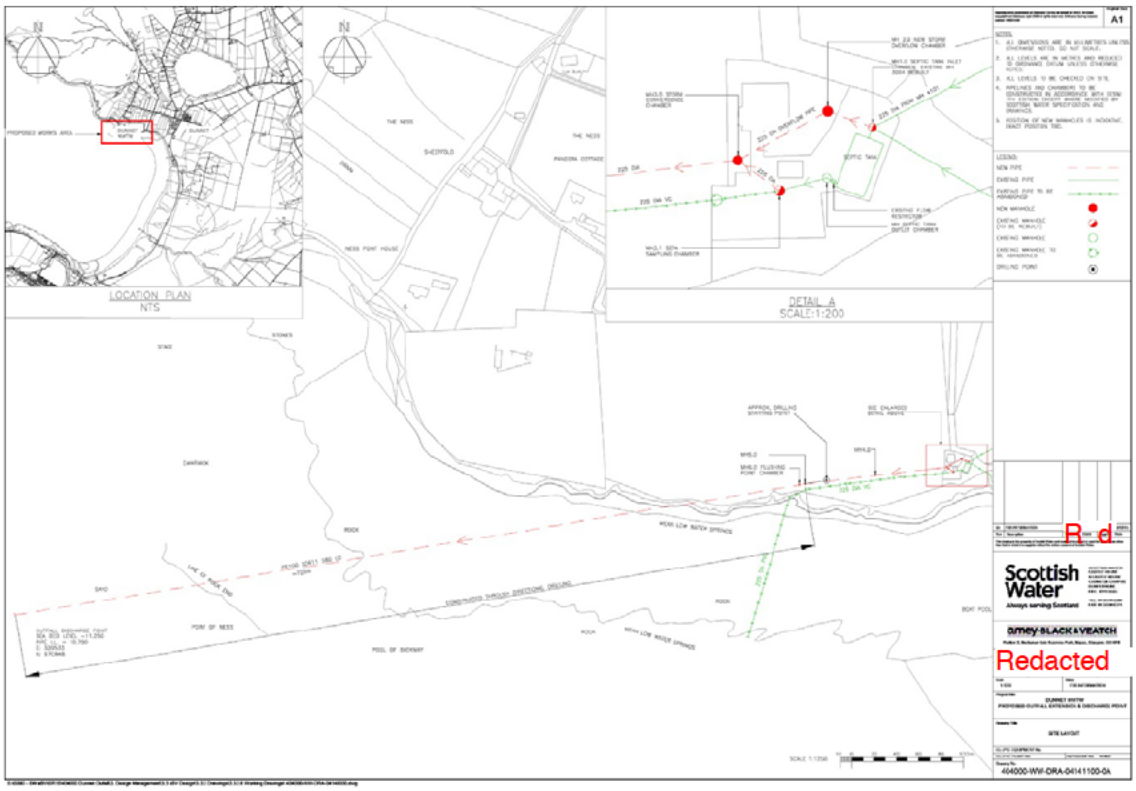
## Introduction

In support of Scottish Water's proposal to extend the existing outfall at Dunnet Waste water Treatment Works (WwTW), on 06 September 2018 an ecological walkover survey was conducted of the area surrounding the site at Dunnet Head, Caithness.

The new discharge point will be located approximately 700m off shore at a depth of 9.25m, where it will achieve sufficient dilution and dispersion of treated effluent and combined sewer overflows away from bathing waters of Dunnet Bay. The predicted start on site date for this work is April 2019.

The purpose of the ecological survey was to identify if the proposed works utilising the Horizontal Direct Drilling (HDD) method would have an impact on any protected species or habitats of conservation concern within the survey area.

The proposed HDD pit will be located approximately 100 metres to the west of Dunnet WwTW at grid reference ND 21259 71068. The proposed new outfall will be located approximately 700 metres west south west at grid reference ND 20533 70948 (Map 1).



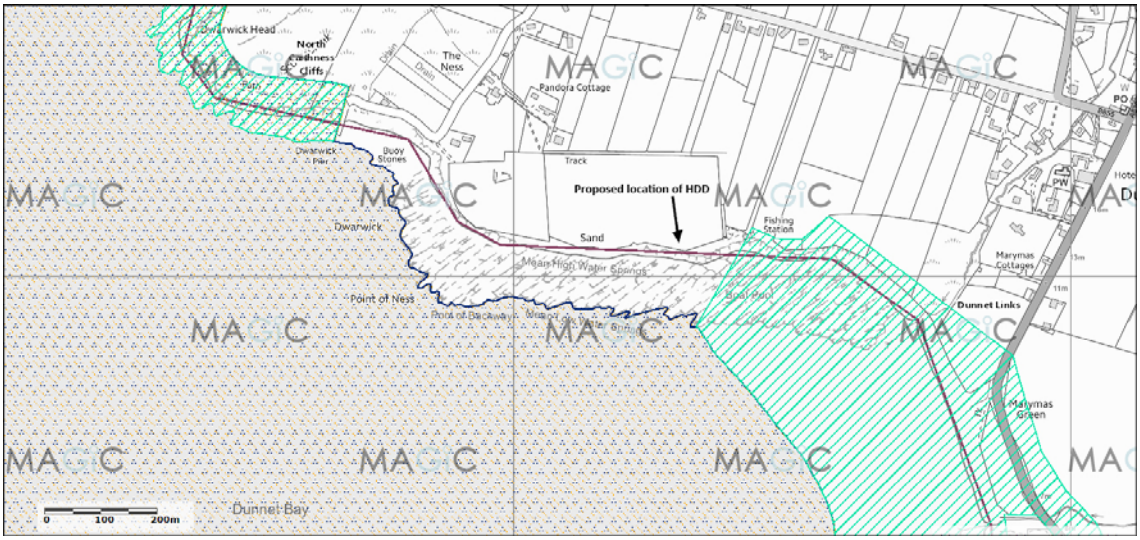

Map 1: Location and proposed layout of the site at Dunnet, Caithness

## Methodology

An initial desk study of the area for records of notable and/or protected species within 1 km of the proposed works, was completed using the website 'scotland.nbnatlas.org' and the Atlas of Highland Land Mammals (Highland Biological Recording Group 2011)

The walkover survey entailed a detailed ground level search of all vegetation and marginal habitats found within 50 metres of the proposed works area combined with a wider 250 metre search for signs of otter.

**Designations**




Map 2: Location of the proposed HDD site sandwiched between designated sites

Dunnet head is designated a Site of Special Scientific Interest (SSSI) as are the Dunnet links to the east. The peninsula forms part of the *North Caithness Cliffs* Specially Protected Area (SPA), qualifying under Article 4.1 of the Birds Directive (79/409/EEC) by supporting populations of European importance of peregrine falcon (*Falco peregrinus).*

The SPA also qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting a seabird assemblage of international importance including: Puffin (*Fratercula arctica)*, Razorbill (*Alca torda)*, Kittiwake (*Rissa tridactyla)*, Fulmar (*Fulmarus glacialis)*, and Guillemot (*Uria aalge)*.

**Limitations**

The survey was restricted to the land above the mean high water line, this included the cliffs and farmland beyond, no attempt was made to survey the inter-tidal zone.

Due to the time of year, no assessment of breeding birds was possible and only an assumption of the species that are most likely to be encountered was made.

**Results**

In addition to the Schedule 1 and Annex 1 breeding bird species for which Dunnet head is designated, a review of the National Biodiversity Network (NBN) highlighted the local presence of the following protected species: otter (Lutra lutra), adder (Vipera berus) and common lizard (Zootoca Vivipara).

Common dolphin (Delphinus delphinus) and common porpoise (Phocoena phocoena) are also recorded in Dunnet bay.

Photo 1: Location of the existing Dunnet WwTW (centre) and Salmon Bothy (right)

The existing Dunnet WwTW (Photo 1) is accessed by a rough farm track leading to a converted fishing station now residential property called 'Salmon Bothy'.

The proposed location of the HDD drilling pit is found in a field of improved grassland adjacent the WwTW, currently occupied by sheep. The field is enclosed by a post and wire fence that protects an un-grazed strip of wildflower grassland and coastal path that lines the top of the cliffs (Photo 2).

The old red sandstone cliffs that form the base rock of Dunnet head vary in slope and aspect but are predominantly steep, south facing and between 3 and 4 meters in height. The cliff base sits on a wave cut platform with small areas of sand and shingle along the foreshore (Photo 3), this area offers potential for nesting waders such as ringed plover and oystercatcher.

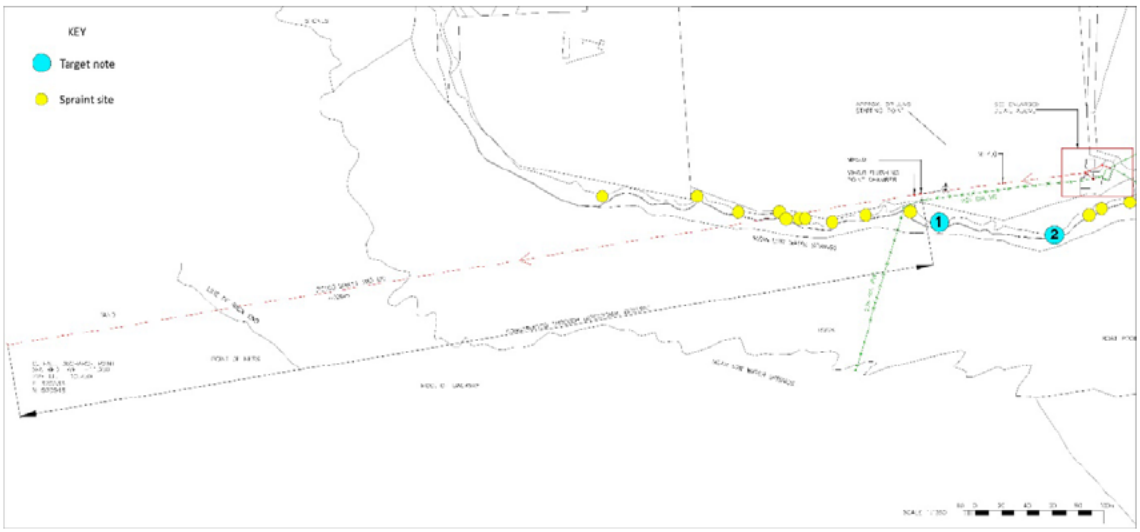
The soft composition of sandstone rock, has resulted in the erosion of undercuts and horizontal ledges along the length of the cliffs, which could provide nesting opportunities for birds, in particular cliff or crevice nesting species such as fulmar and rock dove.

Photo 2: Location of existing outfall infrastructure at the base of the sandstone cliffs

Photo 3: Wave cut platform and eroded cliff ledges

## Otter

The following Map (Map 3) and Table (Table 1) give details of the otter activity recorded during the survey. Apart from one potential couch found within licensable distance of the works, these findings should not have an impact on the proposals.




Map 3: Location of spraint marked sites within the survey area

| Target Note (TN) | Ordnance Survey Grid Reference Locations | Details | Approximate Distance from proposed drill pit location (m) |
|---|---|---|---|
| 01 | ND 21269 71039 | Spraint marked couch | 30 |
| 02 | ND 21338 71033 | Spraint marked couch | 80 |

Table 1: Details of spraint marked sites, TN 01 is highlighted due to proximity to the works

Photo 4: Dog, human and fresh otter tracks in the sand and shingle at the base of the cliffs

Signs of recent otter activity were found throughout the survey area, initially highlighted by a fresh trail of otter footprints found in the sand above the high tide line (Photo 4). These prints wound in and out of the undercut sandstone cliffs, visiting the regularly used spraint sites found beneath (Photo 5 and 6).

Otters scent mark prominent features in the landscape with droppings (spraints) to indicate occupancy of their home range. The majority of these sites were single prominent rocks or small indentations in the cliff (Photo 7 and 8), but two of these locations were at the entrance to larger cavities in the cliff face, sites that could potentially be used by otters to lie up and rest.

Photo 5: Otter prints above the high water line

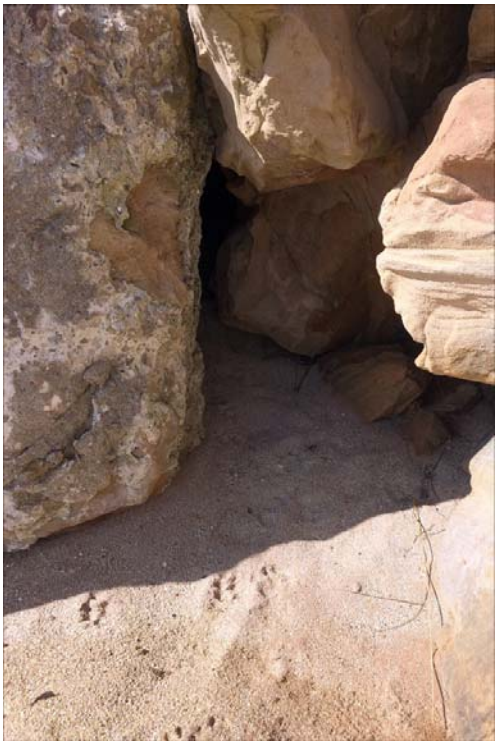


Photo 6: otter prints leading to a spraint marked site

Photo 7: spraint marked rock

Photo 8: spraint marked rock

One of the more significant spraint sites was found approximately 30 metres from the proposed location of the HDD drill pit (Photo 9), this site is highlighted as Target Note 1 (Map 3).

Another potential couch site, highlighted as Target Note 2 (Map 3) was found approximately 80 metres to the east (Map 3), and another (although unlikely) in rock armour beneath the 'Salmon Bothy' residence (Photo 10).

These locations aside no further licensable sites were discovered along the shoreline. It is assumed that otter are commuting through this area, spraint marking their territory, on route to hunting grounds along the coast or the fresh water of St John's Loch 1 kilometre to the north.

Photo 9: Location of Spraint marked couch - Target Note 1

Photo 10: Spraint marked site in rock armour beneath the Salmon Bothy

Photo 11: Northern edge of Dunnet Links SSSI looking North East towards Dunnet WwTW

**Recommendations**

Otter are active in the local area and due to the very real possibility of encountering this species on site, all contractors and staff should be made aware of their legal responsibilities and the following precautionary measures should be followed:

- All excavations should be covered or securely fenced or include a means of escape and any open pipes should be capped at the end of the working day to prevent any animals becoming trapped.

- All machinery should be checked daily before work commences to ensure it has not been occupied by any protected species during periods of construction inactivity.

- All materials and liquids (particularly fuel) should be stored away from watercourses, and prevention measures should be in place to avoid accidental spillages.

- If any protected species nesting or resting sites are found after works have commenced, **all works should cease immediately** and the Specialist Services Environmental Advisor must be contacted.

***Otters are listed as a European Protected Species as defined under the EC Habitats and Species Directive 92/43/EEC. The Conservation of Habitats and Species Regulations 2010 translates this European legislation into UK law.***

With the exception of TN 1, there are currently no other licensable issues associated with the proposed works within the confines of the area discussed in this report.

A disturbance licence should be sought ahead of works for the spraint marked couch highlighted as TN 1.

***Nesting Birds***

The area surrounding the proposed HDD drilling pit is predominantly used for grazing sheep and unless left fallow offers little suitable cover for ground nesting birds.

The cliff habitat immediately adjacent to the site offer numerous potential nest sites for smaller birds such as wren, rock pipit, robin and also potentially fulmar and rock dove, however these cliffs are more accessible to scavenging predators such as fox or otter and could be seen as less than favourable nest sites for most species.

In addition the HDD rig will be set back approximately 30 metres from the cliff edge and should not cause a disturbance to the cliff nesting birds.

The main sea bird cliffs, for which Dunnet Head is designated, are found approximately 700 metres to the North West, the proposed works will have no impact on this site.

The *North Caithness Cliff*s SPA, are designated for breeding populations of peregrine falcon (Falco peregrinus), and although not seen during the survey, the cliff face behind Dwarwick Head offers a potential nest site location, approximately 400 metres from the proposed new outfall site.

The works at the new outfall could cause a disturbance to nesting peregrine.

The recommended disturbance distance for nesting peregrine is between 400 and 600 metres, this must be strictly adhered to during the critical incubation period (28 – 29 days) but can be reduced by 25 to 50 % once the chicks have hatched.

As the works are programmed to commence during the breeding bird season It is advisable to allow time for a follow up visit ahead of any construction activities to note any changes to site use and the locations of any nesting birds that may have an impact on the works.