

# Cromer Shoal Chalk beds MCZ: Adaptive Risk Management



## **Natural Disturbance Study** **2024 Incursion Report**

Report by: Samantha Hormbrey

January 2025

### **Need for the voluntary closed areas**

Three voluntary closed areas were established in September 2023 to provide non potted control areas for an experimental study with the aim of quantifying natural degradation of chalk features in the site and comparing it to degradation caused by potting activities. Since the closed areas were established, the following surveys have been completed:

| <b>2023</b> |                                        |
|-------------|----------------------------------------|
| 14/09       | Voluntary closures established         |
| 21/09       | Baseline data collection using the ROV |
| 26/09       | Baseline data collection using the ROV |
| <b>2024</b> |                                        |
| 17/05       | Baseline multibeam survey              |
| 31/07       | ROV survey                             |

### **Monitoring of closed areas**

Since the closed areas were established, officers have been monitoring the areas to ensure compliance via vessel patrols and tracker data. Monitoring patrols have been completed at a minimum once per month, although efforts have been made to monitor areas on a weekly basis where possible and in response to reports of non-compliance. Tracker data is monitored weekly but is only possible for vessels which carry trackers on board, recently this has varied between 0 and 24% of the fleet. Shore patrols are possible during the winter months when the fishery is not active to allow confirmation of no activity in the whole area, however, during the potting season such patrols have limited value as it is impossible to determine the exact location of potting gear. A log detailing monitoring patrols and the detection of potting gear in the closed areas is provided in Annex 1. It should be noted that whilst some patrols were planned to

ensure monitoring at minimum once per month, other patrols were reactive to tracker data or reports of potential non-compliance artificially, inflating the proportion of times gear was found.

On establishing the closed areas in September 2023 the majority of gear in the area was moved prior to the commencement of completing baseline survey data collection with the exception of a couple of shanks which were removed shortly afterwards. Compliance over winter was very high with no gear observed in the areas or the wider inshore areas during patrols. As the season picked up in spring a couple of shanks were identified in closed areas, fishermen were quickly identified and non-compliance resolved. Incidences were a result of individuals purchasing new plotters or vessels which required re-inputting of co-ordinates or provision of hand-held GPS plotters.

Baseline multibeam surveys were completed in May and provide the fundamental aspect of baseline data collection. Since these surveys have been completed potting activity has been detected in the Sheringham and West Runton closed areas on 12 occasions, 7 of which occurred in one week (w/c 12/08/2024) (Table 1, Annex 1).

Evidence of non-compliance is presented in Annex 2 and 3.

**Table 1:** Non-compliant gear detected in closed areas during vessel patrols and tracker data monitoring between May and August (2024). Numbers have been corrected to remove duplicate reports of the same non-compliant gear.

| Month (2024) | Sheringham | West Runton | East Runton |
|--------------|------------|-------------|-------------|
| May          | 0          | 0           | 0           |
| June         | 3          | 0           | 0           |
| July         | 0          | 0           | 0           |
| August       | 3          | 5           | 0           |
| September    | 0          | 0           | 0           |
| October      | 0          | 1           | 0           |
| November     | 0          | 0           | 0           |
| December     | 0          | 0           | 0           |

### June

Vessel patrols detected three incursions in June, all in the Sheringham closed area. Notices were placed on gear, and it was subsequently moved by skippers. Positions of the marker buoys were recorded and plotted in QGIS and showed two of the buoys detected to be on the very edge of the closed area (Annex 2). For both of these buoys, a second marker could not be located and so it is unknown if gear ran through the closed area. For the other shank detected, both marker buoys were located and showed the gear to run through the closed area (Annex 2).

### August

The high level of non-compliance detected in August resulted in a letter going out to industry (on the 13 August 2024) advising of the incursions, requesting non-compliant gear to be removed immediately and advising that the continuation of the study is being reviewed.

Markers of the non-compliant gear indicated that the incursions were from several different vessels. Whilst notices placed on non-compliant gear and engagement with associated skippers resulted in the quick removal of gear (typically within 1-2 days) from the closed areas it has happened repeatedly by some individuals.

In addition to the monitoring carried out by Eastern IFCA, reports of gear in the Sheringham and West Runton closed areas on the 10 August were also provided by a local diver. In addition to these reports, concern was expressed of 'sledge tracks' in the area, suggesting individuals were purposefully impacting the area to affect the outputs of the study. Reports were based on observations made during a dive at Sheringham and from shore for West Runton. Observations made from shore could not be used with confidence to determine activity in a specific area as it is impossible to know where area boundaries occur. Positional data was collected during the dive which allowed the dive track to be mapped in relation to the closed and experimental areas. Images of observations made during the dives were included, some with potting gear and some without. Of those with potting gear in the image (18 in total), only two showed evidence of direct impact from in situ potting gear (in both cases, abrasion from rope). Impacts were observed in images without gear, however, there was no evidence as to what had caused these impacts. Furthermore, no 'sledge marks' or evidence of purposeful impacts were observed in the images. The evidence provided is presented in Annex 3.

A vessel patrol completed on the 19<sup>th</sup> August 2024, confirmed that all but one shank of the non-compliant gear was subsequently removed from the closed areas. Efforts were made to identify and engage with the associated skipper of the remaining gear. A patrol of all three closed areas on the 28<sup>th</sup> August 2024 confirmed all areas were clear of gear.

Whilst numbers appear high, when considered in relation to the total activity occurring across the study area of the level of non-compliance is considered low (Annex 4). However, as the closed areas provide experimental controls to assess natural degradation even small levels of non-compliance have the potential to invalidate the study.

### October

Monitoring of tracker data detected vessel activity, likely to be potting, in the West Runton closed area at the end of October. On detection of the non-compliant gear, the associated skipper was contacted and asked to check the locations and ensure any gear in the area was moved immediately. On close inspection of the tracker data, there was high confidence that potting gear was hauled on the 28/10/2024, there was less confidence that it was subsequently reset and hauled again on the morning of 30/10/2024 but high confidence it was not reset on the 30/10/2024. Further, a vessel patrol completed on the afternoon of the 30/10/2024 confirmed that no gear was in the closed area, supporting this analysis. It is unclear when this gear was initially set as tracker data is not available the two weeks prior, however, vessel patrols conducted on the 4<sup>th</sup> and 22<sup>nd</sup> October and found the area to be clear of gear (Annex 1). Tracker data for subsequent weeks has been closely monitored and has showed no evidence of further incursions.

## **Marking closed areas**

On establishing the closed areas efforts were made to ensure all fishermen active in the area could locate the closed areas using plotters they have on board their vessel or via a hand-held plotter loaned by Eastern IFCA. However, to aid fishermen by providing visual markers of the closed areas, officers have been working to deploy marker buoys to demark the northern corners of the closed areas. However, several challenges have resulted in significant delays in the deployment of these buoys. Challenges have been largely related to obtaining the required permissions to deploy the buoys via a Marine Licence due to concerns that associated anchor mechanisms could have significant impacts to chalk features. Consequently, a number of alternative methods have been investigated, one of which was the use of a sandbag anchor. To test the effectiveness of using a sandbag as an anchor a test buoy was deployed in the north westerly corner of the West Runton closed area on the 18th July 2024.

The position of the test buoy was checked on the 31<sup>st</sup> July and the 13<sup>th</sup> August and it was found to have maintained position. Retrieval was then attempted on the 15<sup>th</sup> August, however, the buoy was no longer in the location it was deployed (and observed two days prior) and could not be located in the surrounding area suggesting that it hadn't moved and instead been cut off either accidentally by propellers or purposefully by an individual. Subsequent engagement with industry members indicate the latter and a further ROV survey was completed on the 29<sup>th</sup> August to locate and retrieve the sandbag. On this occasion the sandbag was quickly found as it was timed around slack water which meant the rope and floats along the rope were floating on the surface. The ROV was deployed to observe the sandbag in situ before hauling it, however, due to some issues with one of the ROV propellers and the presence of a shank of gear running adjacent to the marker it was extremely challenging and after several attempts aborted. The sandbag was then hauled, its final position recorded and its condition checked (Image 1). The sandbag was in good condition with no obvious signs of abrasion or wear and tear and it had not moved from the position it was deployed. The rope which was attached to the buoy was also inspected and a clean cut where the buoy had been attached was found suggesting that it had been purposefully cut off rather than accidentally caught in a propellor (Image 2).

Using this design, buoys were subsequently deployed to mark the northern corners of the closed areas. Whilst all of these buoys were not all initially successful, issues were quickly identified and resolved and the design and set up refined. Two buoys were left out over the winter months to further test their ability to withstand harsh winter storms, and proved very adequate. All buoys were removed just before Christmas and will be redeployed in the New Year, using the refined design, as soon as activity begins in the New Year.





**Image 1:** Condition of sandbag upon retrieval after 42 days deployment



**Image 2:** Condition of rope which had previously been attached to the marker buoy

## **Implications on the study**

The aim of the study is to monitor the long-term degradation of chalk resulting from multiple, small-scale impacts over time as a consequence of pot-based fishing, rather than to detect the small-scale impacts themselves. The purpose of the closed areas is to provide an experimental control so that any chalk degradation observed can be attributed only to natural disturbance. However, it was always anticipated that there was a risk of disturbance during the study, but that effective monitoring would mean that such could be factored into analysis.

Since the baseline multibeam surveys were completed, 7 and 5 shanks of potting gear have been observed in the West Runton and Sheringham closed areas, respectively. There have been no confirmed incursions within the East Runton site. The extent to which non-compliance in the other two sites will have an impact on the integrity of the study depends in part on whether the level of activity within the control site is distinguishable from the level of activity in the 'treatment' area.

Available fishing data was analysed to determine a conservative estimate of 'normal' levels of fishing activity per study area (i.e. 150m x150m area of the inshore MCZ) and this was found to be an average of 25 shank deployments per year (Annex 4). This is considered likely to be an underestimate on the basis that it assumes that all vessels issued with trackers had them onboard and functioning (which is not always the case as often trackers are left ashore to charge for example).

Based on confirmed incidents of incursions into the closed areas (5 and 7 shanks in two separate areas since the baseline study), the level of fishing activity therein is considered to be significantly below 'normal' levels (i.e. 25 shanks). This is supported by observation of IFCOs monitoring closed areas who report a higher abundance of gear outside of the closed areas. On this basis, whilst the potting activity will potentially have contributed to the overall degradation of the area along with natural disturbance, its contribution to such in the closed area is likely to also be significantly less than in the 'open' areas. The extent to which this is the case may be detected, if significant, in the Autumn multibeam survey by way of comparison to the control site in East Runton for which no non-compliance was detected.

Noting that the intention is to survey the areas annually, a new 'baseline' is in effect created each year, and the Autumn survey would in effect provide a new baseline dataset for the Sheringham and West Runton closed areas in any case.

In addition, the study now effectively has two types of treatment to compare changes against a control site (low and 'normal' fishing activity levels) during the period since the baseline which might provide additional insight into the rate and extent of degradation.

The small-scale impacts resultant of non-compliance are more likely to affect the results of future ROV surveys (from which the frequency of small-scale impacts are determined) as such impacts could be detected and attributed to natural disturbances when in fact they could be a result of non-compliant activity. However, the evidence provided by stakeholders (Annex 3) and the analysis of the level of activity within the

closed area will be taken into account when considering data gathered from ROV surveys to account for this.

In conclusion, the incursions into two of the closed areas will have a degree of impact on the chalk structures and ultimately contribute to any degradation observed within the control area in a manner indistinguishable from natural disturbance. However, in the context that the level of fishing activity is considered to be low, the existence of a control site within which no non-compliance has been observed and location data of the fishing gear which it may be possible to incorporate into the analysis of multibeam and ROV data, the study is not considered to be significantly impacted as a consequence.

It should be noted however that, for the study to be successful long term, compliance with the voluntary closures going forward is essential and any further treatment in the control areas is more likely to undermine the study's results.

#### Implications on Adaptive Risk Management (ARM)

Adaptive Risk Management (ARM) requires the implementation of management proportionate to the risk identified, and adequately precautionary, followed by a process of evaluation and refinement of that management. ARM provides an approach for managing evidence to inform and justify management decisions, providing confidence to stakeholders that their interests are being appropriately accounted for. This helps build trust-based relationships with stakeholders, promoting stewardship and a shared understanding among sea users and enables stakeholders to become more involved in the provision of evidence. A key component of the ARM approach adopted in the MCZ by Eastern IFCA is this participatory approach.

Effective collaboration with industry is fundamental to the successful implementation of ARM in the MCZ. In the absence of evidence and regulatory measures, several voluntary measures have been developed and established to address immediate risks and to support the collection of evidence and data. In addition to the voluntary closed areas discussed above, these include:

- *Voluntary Code of Best Practice* to reduce the likelihood of gear becoming lost
- *Voluntary use of trackers* to provide information on effort levels and the spatial and temporal distribution of potting activities
- *Voluntary pot tagging trial* to trial suitable pot tags and encourage uptake

Uptake of these voluntary measures by industry is fundamental to managing identified risk and developing evidence-based management of the site, and ultimately, the long-term success of ARM. If industry do not support ARM, demonstrated through poor uptake of voluntary measures, measures may need to be made compulsory or the suitability of Adaptive Risk Management reviewed.

Whilst monitoring compliance with the Code of Best Practice is challenging, officers have received very few reports of lost gear in the site since the code was established (from both fishermen and other sea users). Furthermore, observations made by IFCOs during patrols demonstrate general compliance with the code, for example, observations of removal of gear from rugged areas when storms are forecast.

Fishermen were provided trackers to use on a voluntary basis, initially to provide information on potting activities in the MCZ, and more recently to help monitor activity in the voluntary closed areas. Approximately a third of the fleet have trackers, however, use of trackers has consistently been poor with trackers often not being taken on-board during fishing trips or recharged once the battery has died. Continuous resource and engagement with industry is required to ensure trackers are charged and being used, in some cases charging units for individuals. When uptake has been at its best, it is estimated that tracker data represents 30% of activity, however more recently uptake has ranged between 0-24% of the fleet (Annex 4).

The pot tagging trial has not yet commenced but will rely on fishermen placing tags on their pots on a voluntary basis and providing feedback on their practicality and viability to inform identification of the most suitable tag to use to mark gear. Applications from fishermen to participate in the pot tagging trial have been received and consideration of individuals compliance with other voluntary measures should be made when determining successful applicants.

Overall, the industry's contribution to ARM is characterised by a few individuals being highly engaged, a small minority who are openly resistant of ARM on the basis that they do not believe fishing activity impacts the MCZ, and the majority who appear to recognise the need for ARM but are not necessarily actively contributing to the work. The recent incursions appear to be isolated to only a few individuals rather than being representative of a general indifference from industry. Further, the response from fishing associations to encourage members to comply with the voluntary closures and subsequent compliance indicates that the majority of industry are willing to collaborate in accordance with an ARM approach.

### Moving forward

Further non-compliance with voluntary closures will pose a serious risk to the integrity of the study. To avoid such, the following actions are identified:

- **Industry engagement** - Industry are being re-engaged to ensure that they understand the importance of the study and the closed areas. In particular, engaging association chairs, development of additional engagement material and in-person dialogue with fishery stakeholders has been actioned.
- **Marking the closed areas** - Marker buoys have been deployed at the northerly corners of each closed area to facilitate industry avoiding the areas and facilitate monitoring compliance from the shore. Consideration as to marking the southern corners is to be considered for spring 2025.
- **Enhanced monitoring** – Closed areas are to be monitored at a higher frequency (once per week) by including deployment of the Authority's drones as a monitoring method.



## **Conclusions**

Incursions into the voluntary closed will contribute to any degradation observed within the control sites over time and the non-compliance risks the continuation of ARM generally because it is highly dependent on a collaborative approach. However, the level of non-compliance is considered to be manageable within the data analysis to the extent that the study can still achieve its aims. Further, compliance appears to have been obtained as a consequence of further engagement including from fishing associations.

## Annex 1: Closed area monitoring log (2024)

| Date                                        | Officers        | Source        | Gear found in closed areas |                  |                  |
|---------------------------------------------|-----------------|---------------|----------------------------|------------------|------------------|
|                                             |                 |               | Sheringham (SH)            | West Runton (WR) | East Runton (ER) |
| 03/01/2024                                  | JP, TM          | Vessel patrol | N                          | N                | N                |
| 29/01/2024                                  | JP, STL         | Vessel patrol | N                          | N                | N                |
| 09/02/2024                                  | JP, TM, SR, ERC | Vessel patrol | N                          | N                | N                |
| 15/02/2024                                  | JP, TM          | Vessel patrol | N                          | N                | N                |
| 05/03/2024                                  | JP, TM          | Vessel patrol | N                          | N                | N                |
| 05/04/2024                                  | EDC             | Tracker       | Y                          |                  |                  |
| 05/04/2024                                  | TM              | Fisherman     |                            |                  | Y                |
| 11/04/2024                                  | JCB, SR         | Vessel patrol | N                          | N                | N                |
| 25/04/2024                                  | CS, STL, SB     | Vessel patrol | N                          | Y                | N                |
| 02/05/2024                                  | CS              | Vessel patrol | N                          | N                | N                |
| <b>17/05/2024 Baseline multibeam survey</b> |                 |               |                            |                  |                  |
| 17/05/2024                                  | CS, STL         | Vessel patrol | N                          | N                | N                |
| 13/06/2024                                  | CS, BF, SB      | Vessel patrol | 1                          | N                | N                |
| 24/06/2024                                  | CS, BF, SB      | Vessel patrol | 2                          | N                | N                |
| 19/07/2024                                  | STL, CS         | Vessel patrol | N                          | N                | N                |
| <b>31/07/2024 ROV survey</b>                |                 |               |                            |                  |                  |
| 31/07/2024                                  | CS, TM, SH, YT  | Vessel patrol | N                          | N                | N                |
| 05/08/2024                                  | EDC             | Tracker       | 1                          |                  |                  |
| 13/08/2024                                  | CS, BF, SB      | Vessel patrol | 2                          | 4                | N                |
| 15/08/2024                                  | TM, SL, JB      | Vessel patrol | N                          | 5                |                  |
| 19/08/2024                                  | JB, SR          | Vessel patrol | N                          | 1                | N                |
| 28/08/2024                                  | SH, SB, TM, CS  | Vessel patrol | N                          | N                | N                |
| 14/09/2024                                  | LT, JB, SR      | Vessel patrol | N                          | N                | N                |
| 25/09/2024                                  | JG, JB, SB      | Vessel patrol | N                          | N                | N                |
| 04/10/2024                                  | SL, CS          | Vessel patrol | N                          | N                | N                |
| 22/10/2024                                  | LT              | Vessel patrol | N                          | N                | N                |
| 28/20/2024                                  | EMC             | Tracker       |                            | 1                |                  |
| 30/10/2024                                  | CS, STL, SH     | Vessel patrol | N                          | N                | N                |
| 31/10/2024                                  | CS, STL, SH     | Vessel patrol | N                          | N                | N                |
| 17/12/2024                                  | LT              | Vessel patrol | N                          | N                | N                |
| 20/12/2024                                  | TM              | Shore patrol  | N                          | N                | N                |
| 23/12/2024                                  | TM              | Shore patrol  | N                          | N                | N                |

## Annex 2: Evidence of non-compliance from Eastern IFCA monitoring

### Post baseline non-compliance 1 – 13/06/2024

Cromer Shoal Chalk Beds MCZ

Closed area monitoring form

Natural Disturbance Study

Date: 13/6/24

EIFCA Officers: CS, RF, SB

Gear found in closed areas:

Sheringham (SH) Yes / ~~No~~

West Runton (WR) Yes / No

East Runton (ER) ~~Yes~~ / No

| ID | Closed area | Description of marker<br>(please take image) | Marker positions (lat and long) |                             | Associated vessel/skipper | Other information                       |
|----|-------------|----------------------------------------------|---------------------------------|-----------------------------|---------------------------|-----------------------------------------|
|    |             |                                              | Start                           | End                         |                           |                                         |
| 1  | ER          | CLEAR                                        |                                 |                             |                           |                                         |
| 2  | WR          | CLEAR                                        |                                 |                             |                           |                                         |
| 3  | SH          | 2x ORANGE BUOYS                              | 52°57.010'N<br>001°13.201'E     | 52°56.990'N<br>001°13.200'E | HENRY<br>RANDELL          | SET ON EDGE, AT 90°<br>TO SHORE - NETS? |
| 4  | SH          | 1x DHAN,<br>YELLOW &<br>BLUE M               | 52°56.947'N<br>001°13.220'E     | ?<br>=                      | ?                         |                                         |
| 5  |             |                                              |                                 |                             |                           |                                         |
| 6  |             |                                              |                                 |                             |                           |                                         |

Please complete a form every time you are in the area even if there is no gear in the closed areas.  
Once completed please take an image of the form, send to SH with images of any markers found and corresponding ID and leave completed form in the red folder.

Figure 1: Monitoring patrol form for non-compliance occurrence 13/06/2024 [image redacted].

Figure 2: image of gear in Sheringham closed area 13/06/24 [image redacted]

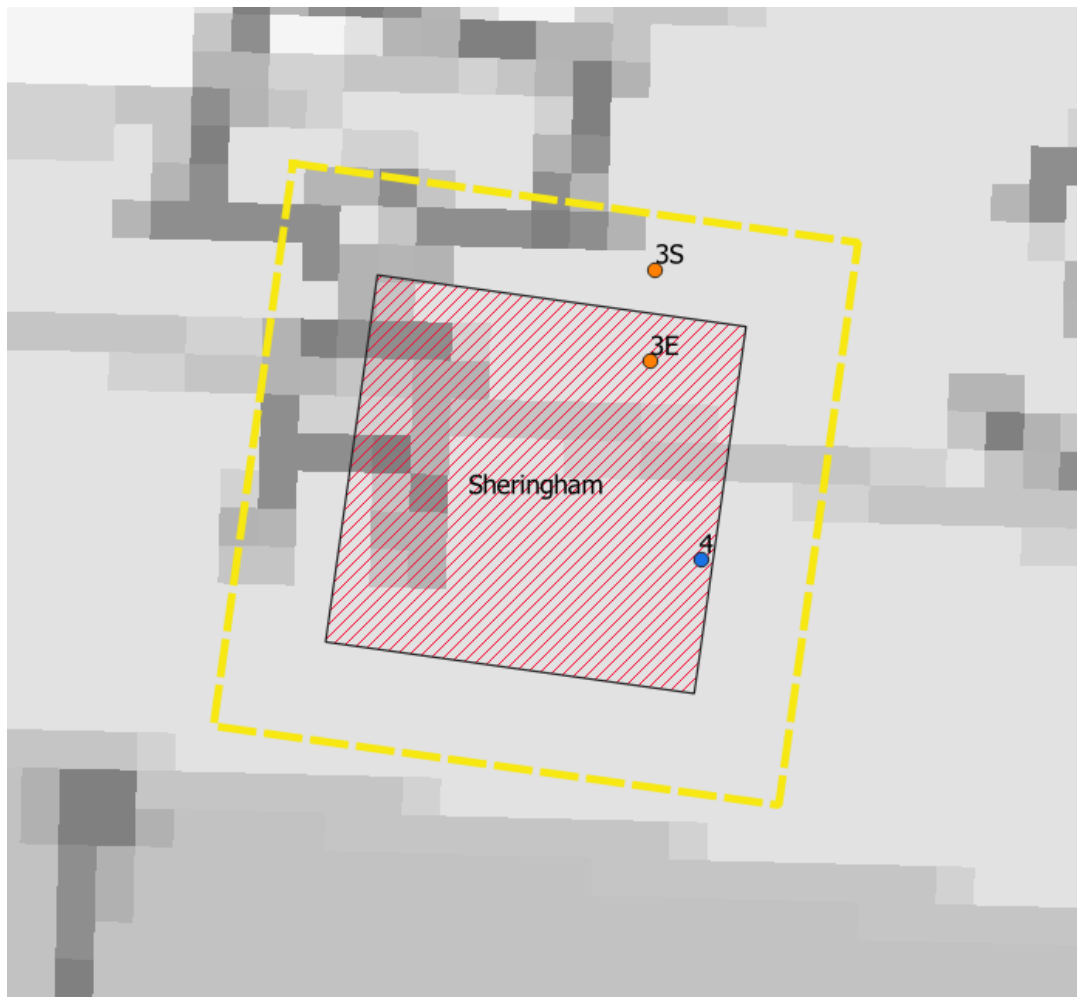


Figure 3: Chart showing the Sheringham closed area (Buffer zone in yellow dashed line, experimental area in red hatching), with the position of gear found (Orange: start and end of gear 3, blue: gear 4). 13/06/2024.

## Post baseline non-compliance 2 – 24/06/2024

Cromer Shoal Chalk Beds MCZ

Closed area monitoring form

Natural Disturbance Study

Date: 24 / 6 / 24

EIFCA Officers: CS, BF, SB

Gear found in closed areas:

Sheringham (SH) Yes / ~~No~~

West Runton (WR) ~~Yes~~ / No

East Runton (ER) ~~Yes~~ / No

| ID | Closed area | Description of marker<br>(please take image) | Marker positions (lat and long)     |                                      | Associated vessel/skipper | Other information                |
|----|-------------|----------------------------------------------|-------------------------------------|--------------------------------------|---------------------------|----------------------------------|
|    |             |                                              | Start                               | End                                  |                           |                                  |
| 1  | WR          | CLEAR.                                       |                                     |                                      |                           |                                  |
| 2  | SH          | ORANGE BUOY<br>DARK BLUE/RED<br>BUOY         | 52° 56. 960N<br>001° 13. 087E<br>IN | 52° 56. 925N<br>001° 13. 205E<br>OUT | OTHER ORANGE<br>BUOY      | PIC TAKEN NO MESSAGES.<br>NOTICE |
| 3  | SH          | DARK YELLOW TOP<br>BLUE BOTTOM               | 52° 56. 967N<br>001° 13. 094E<br>IN | ?                                    |                           | PIC TAKEN.<br>NOTICE             |
| 4  | ER          | CLEAR                                        |                                     |                                      |                           |                                  |
| 5  |             |                                              |                                     |                                      |                           |                                  |
| 6  |             |                                              |                                     |                                      |                           |                                  |

Please complete a form every time you are in the area even if there is no gear in the closed areas.  
Once completed please take an image of the form, send to SH with images of any markers found and corresponding ID and leave completed form in the red folder.

Figure 4: Monitoring patrol form for non-compliance occurrence 24/06/2024 [image redacted]

Figure 5: Images of gear found in Sheringham closed area 24/06/2024 [images redacted]

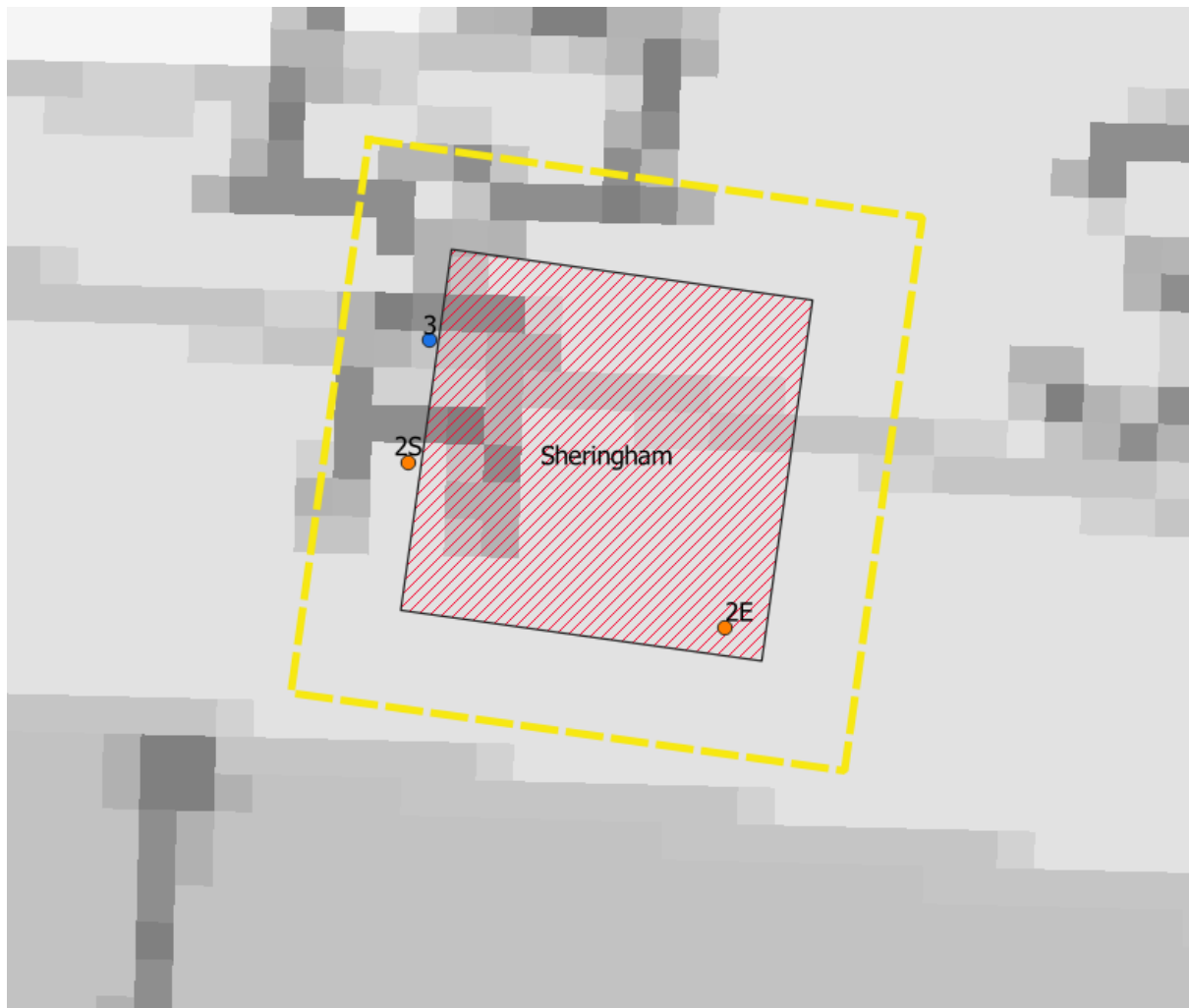


Figure 6: Chart showing the Sheringham closed area (Buffer zone in yellow dashed line, experimental area in red hatching), with the position of gear found (orange: start and end of gear 2, blue: gear 3). 24/06/2024.



Post baseline non-compliance 3 – 05/08/2024

Figure 7: Screenshot of vessel tracker (red line) showing probable potting activity in the Sheringham closed area (red box) 05/08/2024 [image redacted].

Post baseline non-compliance 4 – 13/08/2024

RE: Voluntary closed areas

CS

Charlotte Siely

To

○ Luke Godwin; ○ Tristan McLean

Cc

● Samantha Hormbrey; ● Simon Lee

Follow up.

Start by 13 August 2024. Due by 13 August 2024.

You forwarded this message on 13/08/2024 11:32.

2024\_08\_13\_SH\_5.jpg

.jpg File

2024\_08\_13\_SH\_6.jpeg

.jpeg File

2024\_08\_13\_WR\_1.jpg

.jpg File

2024\_08\_13\_WR\_2.jpg

.jpg File

2024\_08\_13\_WR\_3.jpg

.jpg File

Hi Luke,

Just checked the boxes:

ER – all clear

WR – 4x markers at:

1.

52°56'846 N 001°14'689 E (looks to be tangled with marker 2)

2.

52°56'846 N 001°14'689 E (looks to be tangled with marker 1)

3.

52°56'846 N 001°14'687 E

4.

52°56'809N 001°14'624 E

SH – 2x markers:

5.

52°56'986 N 001°13'218 E

6.

52°56'961 N 001°13'104 E

Also checked the accuracy of our GPS and is HDOP 0.6, accurate 0.9m. At the time we checked the tide was slack to 0.2 knots 108°.

Those markers some are near the edge and could be in the buffer, but we took the positions and photos to be sure, so worth plotting using GIS/ MaxSea to be certain.

Photographs attached of each relating to numbers above. Will also send to Tristan in case he knows who they are.

Cheers,  
Charlotte

Charlotte Siely

Inshore Fisheries & Conservation Officer

E: [charlottesuely@eastern-iffca.gov.uk](mailto:charlottesuely@eastern-iffca.gov.uk)

M: 07795 343218

Figure 8: Screenshot of email reporting on gear found in closed areas during a monitoring patrol, 13/08/2024 [image redacted].

Figure 9: Images of gear found in the West Runton closed area, 13/08/2024 [images redacted].

Figure 10: Images of gear found in the Sheringham closed area, 13/08/2024 [images redacted].



Figure 11: Chart showing the West Ronton closed area (Buffer zone in yellow dashed line, experimental area in red hatching), with the position of gear found (orange). Note: gear 2 is in the same location as gear 1 and therefore not labeled. 13/08/2024.

Figure 12: Chart showing the Sheringham closed area (Buffer zone in yellow dashed line, experimental area in red hatching), with the position of gear found (blue). 13/08/2024.

## Post baseline non-compliance 5 – 15/08/2024

Cromer Shoal Chalk Beds MCZ

Closed area monitoring form

Natural Disturbance Study

Date: 15/8/24

EIFCA Officers: TM, SL, JB

Gear found in closed areas:  
 Sheringham (SH) ☒ Yes / No  
 West Runton (WR) Yes / No  
 East Runton (ER) Yes / No

| ID | Closed area | Description of marker<br>(please take image) | Marker positions (lat and long) |     | Associated vessel/skipper | Other information |
|----|-------------|----------------------------------------------|---------------------------------|-----|---------------------------|-------------------|
|    |             |                                              | Start                           | End |                           |                   |
| 1  | SH          | B, R, B<br>Dhan                              | 52.56.990<br>001 13 216         |     | ?                         |                   |
| 2  | SH          | Butterfly-R<br>Blue<br>Dhan                  | 52 56 973<br>001 13 112         |     | ?                         |                   |
| 3  | SH          |                                              |                                 |     |                           |                   |
| 4  |             |                                              |                                 |     |                           |                   |
| 5  |             |                                              |                                 |     |                           |                   |
| 6  |             |                                              |                                 |     |                           |                   |

Please complete a form every time you are in the area even if there is no gear in the closed areas.  
 Once completed please take an image of the form, send to SH with images of any markers found and corresponding ID and leave completed form in the red folder.

Figure 13: Monitoring patrol form for non-compliance in the Sheringham closed area occurrence, 15/08/2024 [image redacted].

Cromer Shoal Chalk Beds MCZ

Closed area monitoring form

Natural Disturbance Study

Date: 15/8/24

EIFCA Officers: TM, JB, SL

Gear found in closed areas:  
 Sheringham (SH) Yes / No  
 West Runton (WR) Yes / No  
 East Runton (ER) Yes / ☒ No

| ID | Closed area | Description of marker<br>(please take image) | Marker positions (lat and long) |     | Associated vessel/skipper | Other information |
|----|-------------|----------------------------------------------|---------------------------------|-----|---------------------------|-------------------|
|    |             |                                              | Start                           | End |                           |                   |
| 1  | WEST RUN    | Blue Can                                     | 52 56 845<br>001 14 595         |     | JC?                       |                   |
| 2  | =           | Dhan<br>buff blue flag<br>white blue flag    | 52 56 839<br>001 14 706         |     |                           |                   |
| 3  | =           | buff-o<br>white blue<br>buff                 | 52 56 827<br>001 14 631         |     | Ryan<br>Miller            |                   |
| 4  | =           | red/white<br>flag                            | 52 56 870<br>001 14 696         |     | John<br>Dory              |                   |
| 5  | =           | white can                                    | 52 56 872<br>001 14 658         |     | JC??                      |                   |
| 6  |             |                                              |                                 |     |                           |                   |

Please complete a form every time you are in the area even if there is no gear in the closed areas.  
 Once completed please take an image of the form, send to SH with images of any markers found and corresponding ID and leave completed form in the red folder.

Figure 14: Monitoring patrol form for non-compliance occurrence in the West Runton closed area, 15/08/2024 [image redacted].

Figure 15: Images of gear found in the Sheringham closed area, 15/08/2024. This looks to be the same gear that was found on 13/08/2024 [images redacted].

Figure 16: Images of gear found in the West Runton closed area, 15/08/2024 [images redacted].

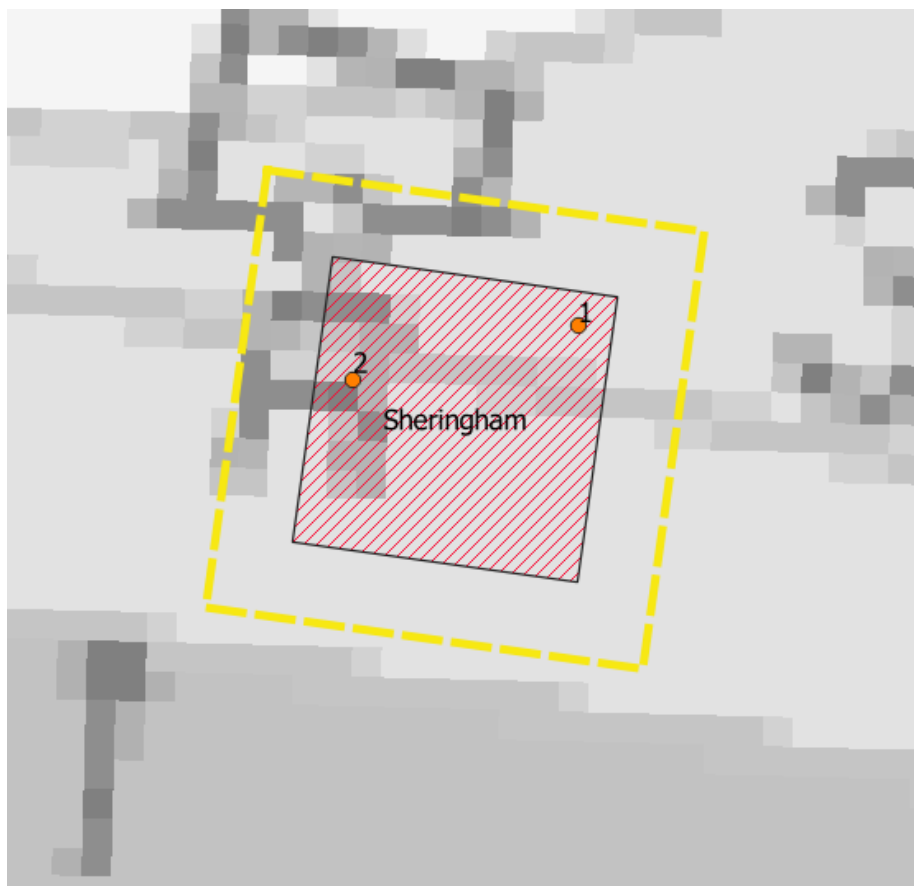


Figure 17: Chart showing the Sheringham closed area (Buffer zone in yellow dashed line, experimental area in red hatching), with the position of gear found (orange). 15/08/2024.

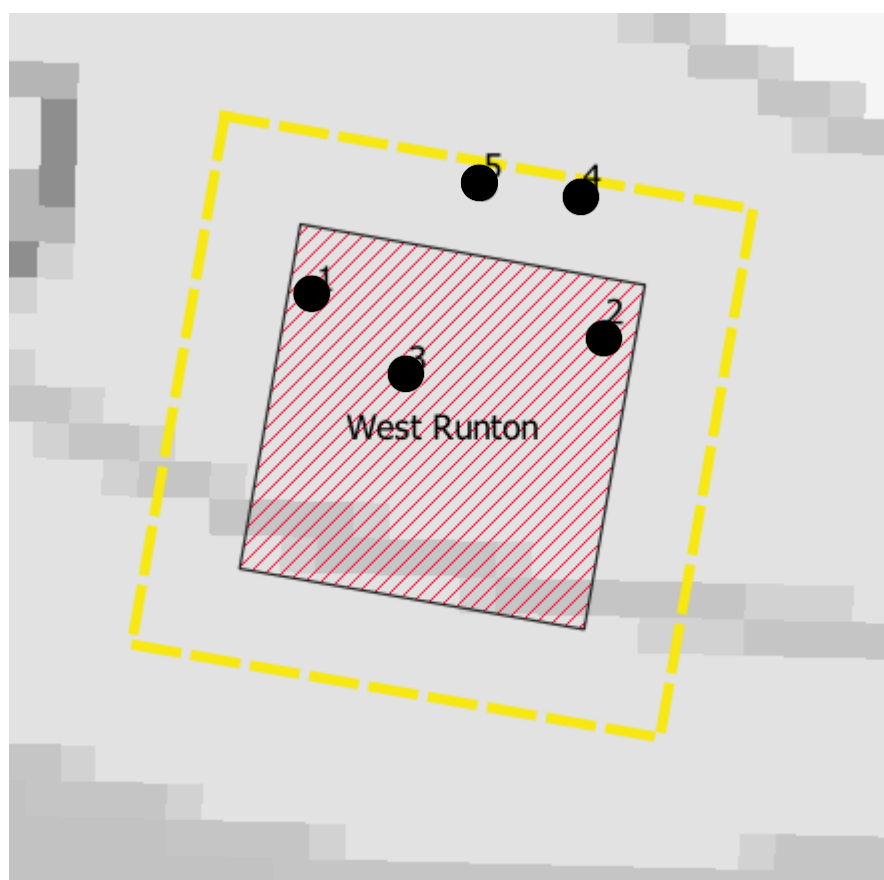


Figure 18: Chart showing the West Runton closed area (Buffer zone in yellow dashed line, experimental area in red hatching), with the position of gear found [redacted]. 15/08/2024.





Figure 19: Image showing the DOP reading and accuracy of the vessel GPS on the 15/08/2024 patrol.

Post baseline non-compliance 6 – 19/08/2024 (likely the same gear as the blue can found on 15/08/2024)

Cromer Shoal Chalk Beds MCZ

Date: 19/08/24

Closed area monitoring form

Natural Disturbance Study

EIFCA Officers: S R, JCB

Gear found in closed areas:

Sheringham (SH) Yes / ☒ No

West Runton (WR) ☒ Yes / No

East Runton (ER) Yes / ☒ No

| ID | Closed area | Description of marker (please take image) | Marker positions (lat and long) |             | Associated vessel/skipper | Other information |
|----|-------------|-------------------------------------------|---------------------------------|-------------|---------------------------|-------------------|
|    |             |                                           | Start                           | End         |                           |                   |
| 1  | WR          | Blue 70L Drum                             | 52°56.870                       | 01°14.600 E | ?                         |                   |
| 2  |             |                                           |                                 |             |                           |                   |
| 3  |             |                                           |                                 |             |                           |                   |
| 4  |             |                                           |                                 |             |                           |                   |
| 5  |             |                                           |                                 |             |                           |                   |
| 6  |             |                                           |                                 |             |                           |                   |

Please complete a form every time you are in the area even if there is no gear in the closed areas. Once completed please take an image of the form, send to SH with images of any markers found and corresponding ID and leave completed form in the red folder.

Figure 20: Monitoring patrol form for non-compliance occurrence in the 19/08/2024 [image redacted].

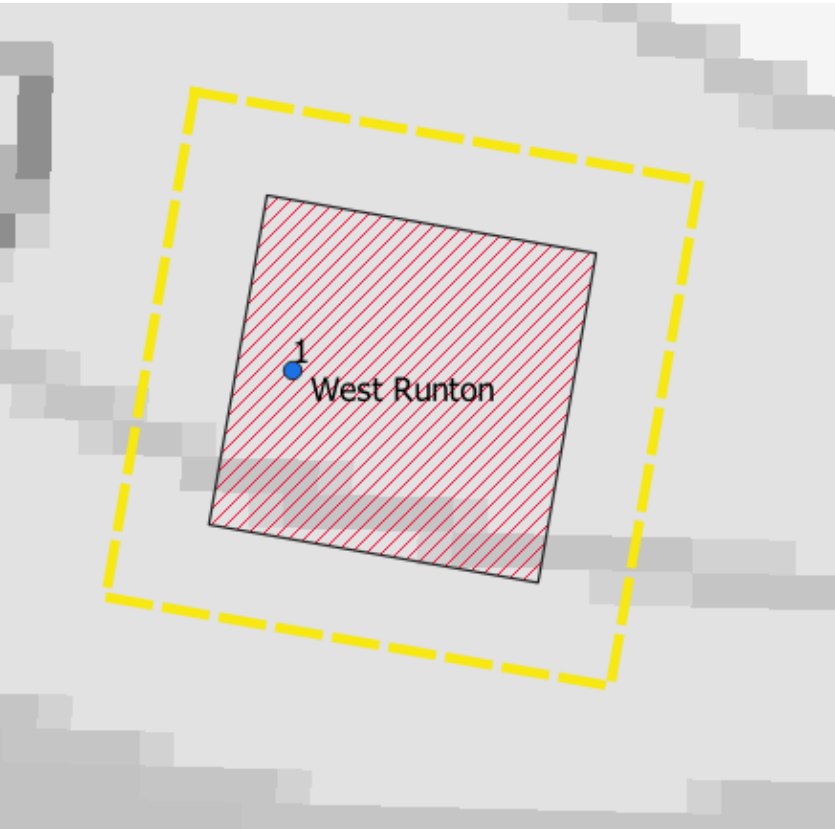


Figure 21: Chart showing the West Runton closed area (Buffer zone in yellow dashed line, experimental area in red hatching), with the position of gear found (blue). 19/08/2024.

### **Annex 3: Evidence of non-compliance submitted 10/08/2024 by a diver**

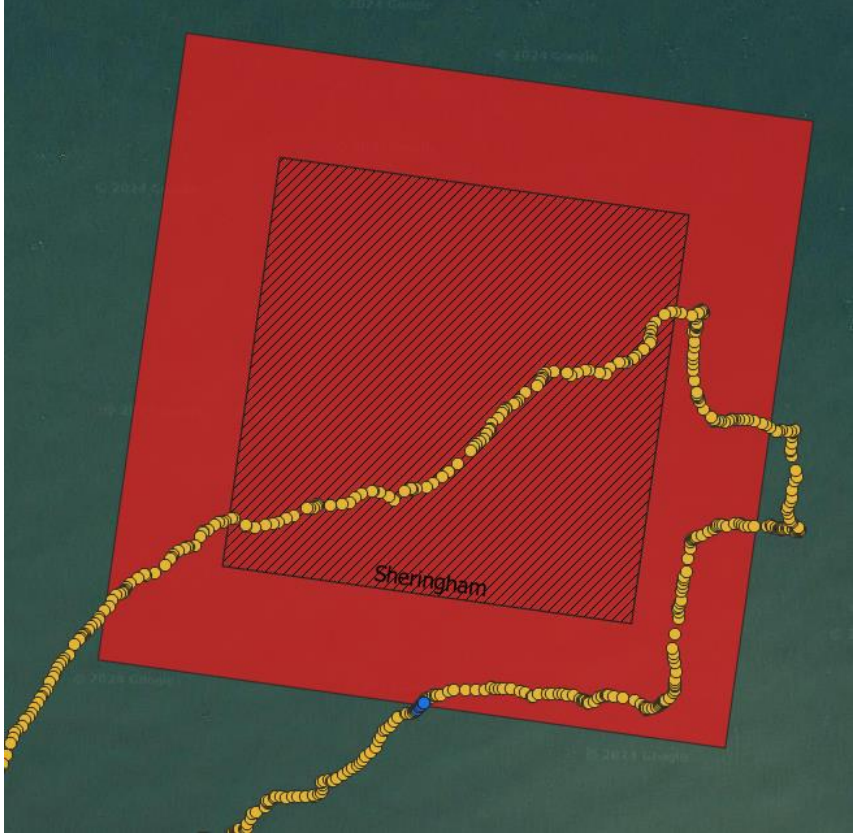
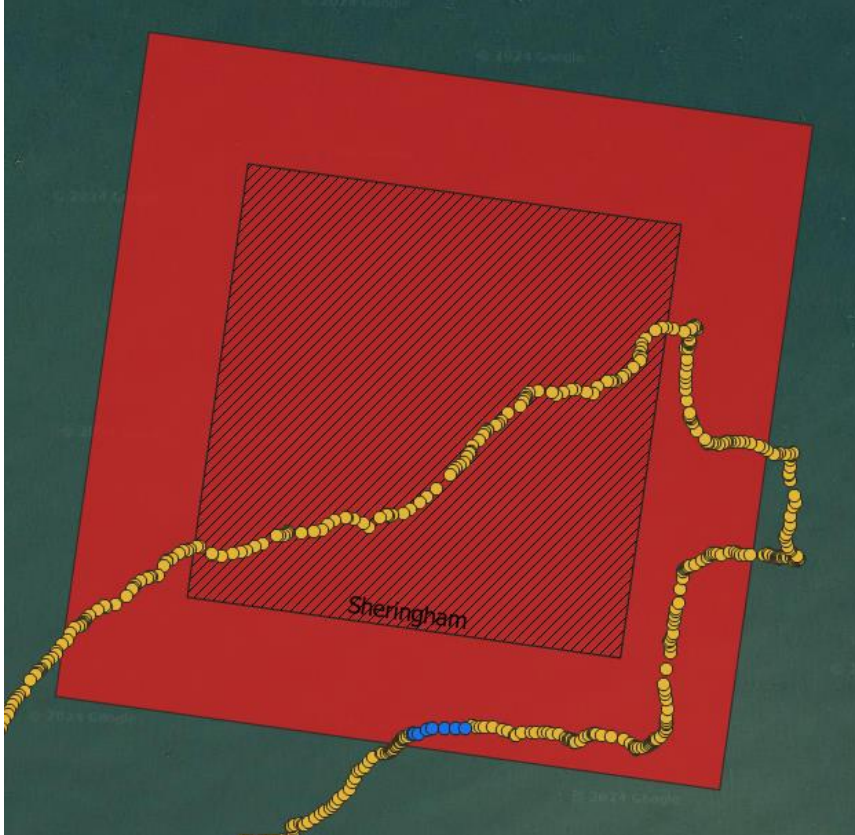
Dive track (Figure 1) and images taken during dive (Table 1). GPS positions of image have been estimated using the time stamp of when the image was taken. Note that some have multiple positions, this is because there are multiple GPS positions per minute and the timestamps for the images are only recorded to the minute.



Figure 1: GPS track for dive completed on 10/08/2024 by a local diver. Sheringham closed area in brown with the experimental area in red.

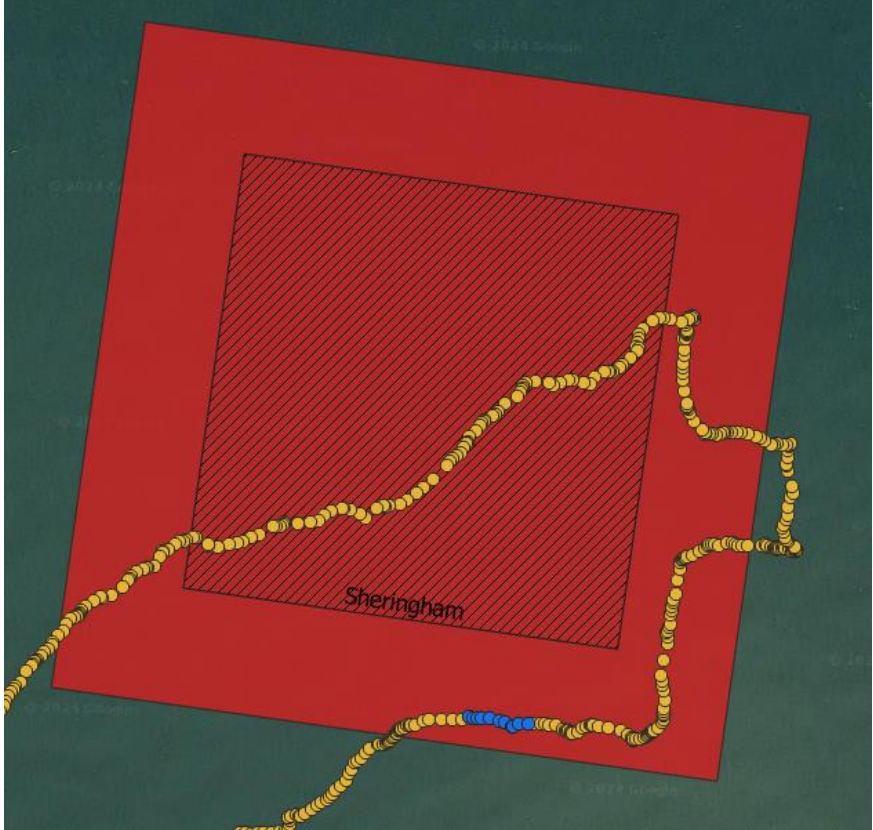


Table 1: Images taken during dive with their corresponding position along the GPS track, in relation to the closed area (red) in Sheringham. The experimental area is the shaded with diagonal lines. Images provided by diver.

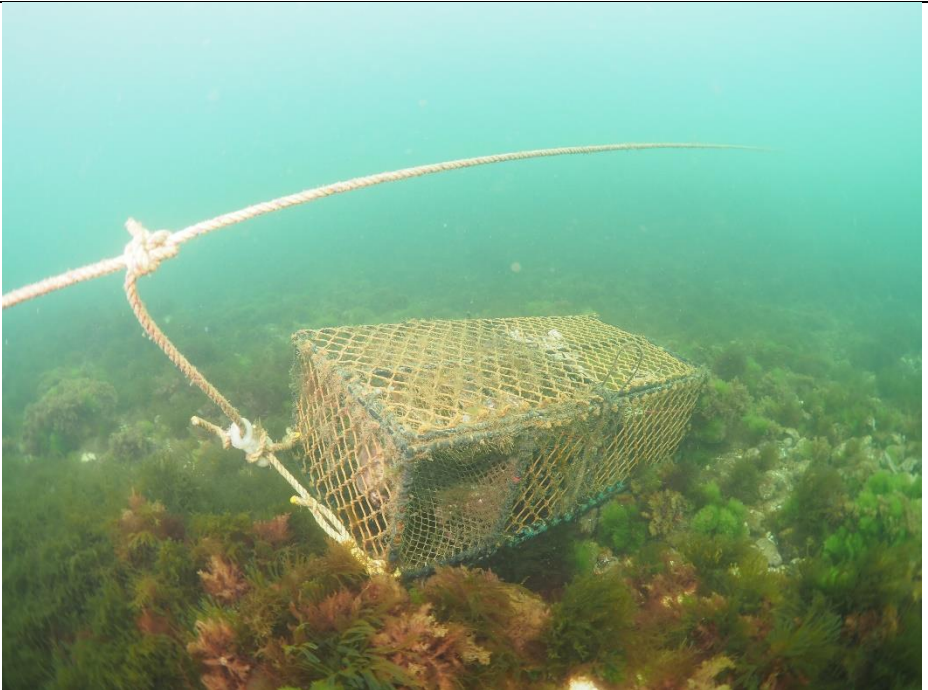
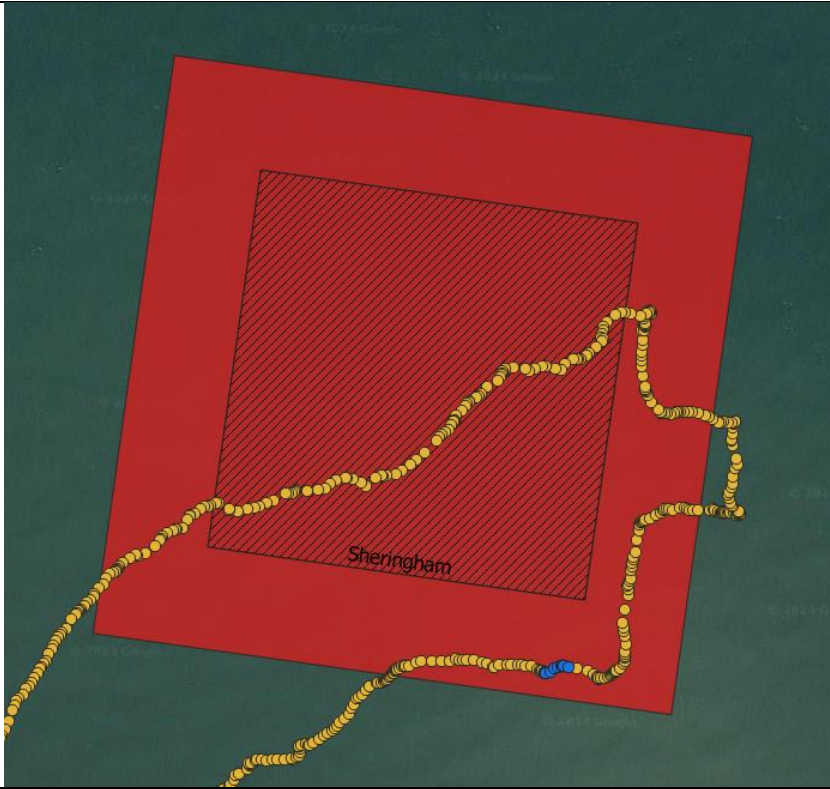
|   | Position                                                                                                                                                                                                                                                                                                                                                    | Image                                                                                                                                                                                                                                                       |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 |  A map showing a GPS track (yellow line with dots) and a red closed area. The track starts outside the red area, enters it, and then exits. A blue dot is located on the track just before it enters the red area. The word "Sheringham" is written inside the red area.  |  An underwater photograph showing a crab trap (a wire mesh cage) resting on the seabed. A rope is attached to the top of the trap, and the water is clear and greenish.   |
| 2 |  A map showing a GPS track (yellow line with dots) and a red closed area. The track starts outside the red area, enters it, and then exits. A blue dot is located on the track just before it enters the red area. The word "Sheringham" is written inside the red area. |  An underwater photograph showing a crab trap (a wire mesh cage) resting on the seabed. A rope is attached to the top of the trap, and the water is clear and greenish. |



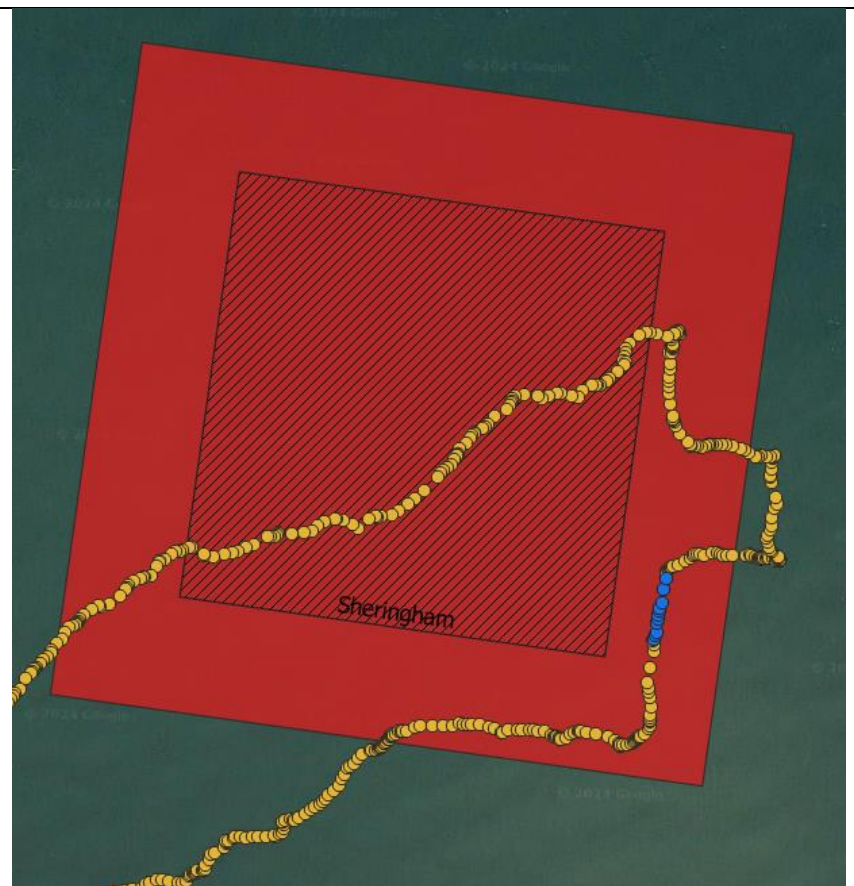
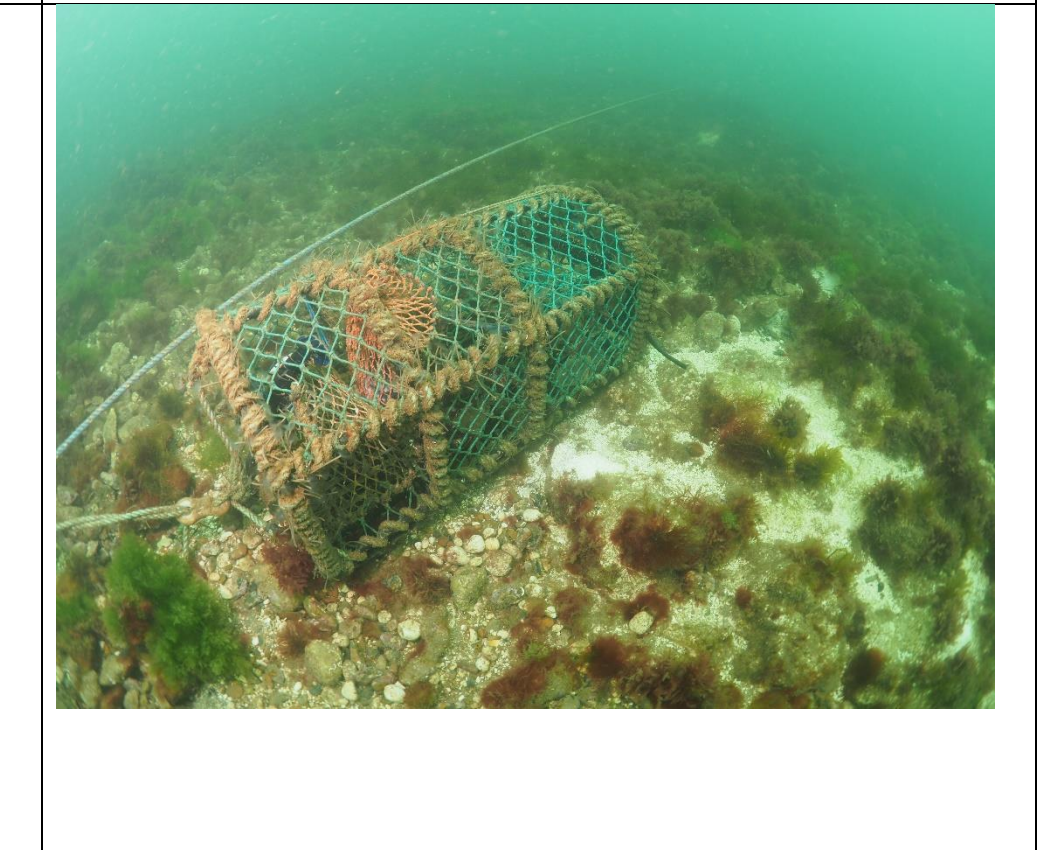
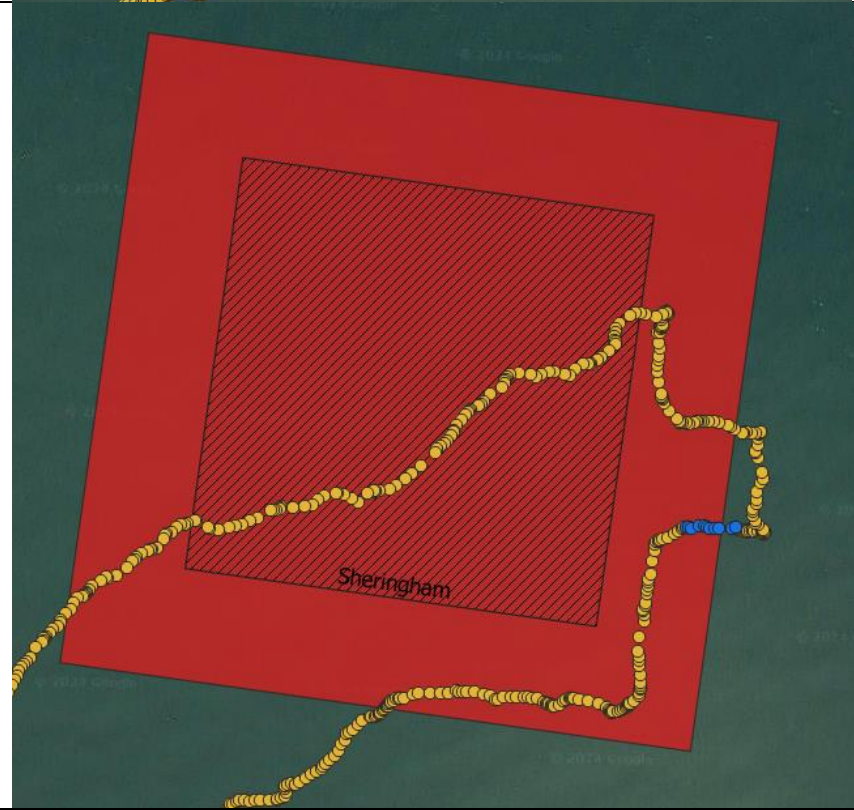
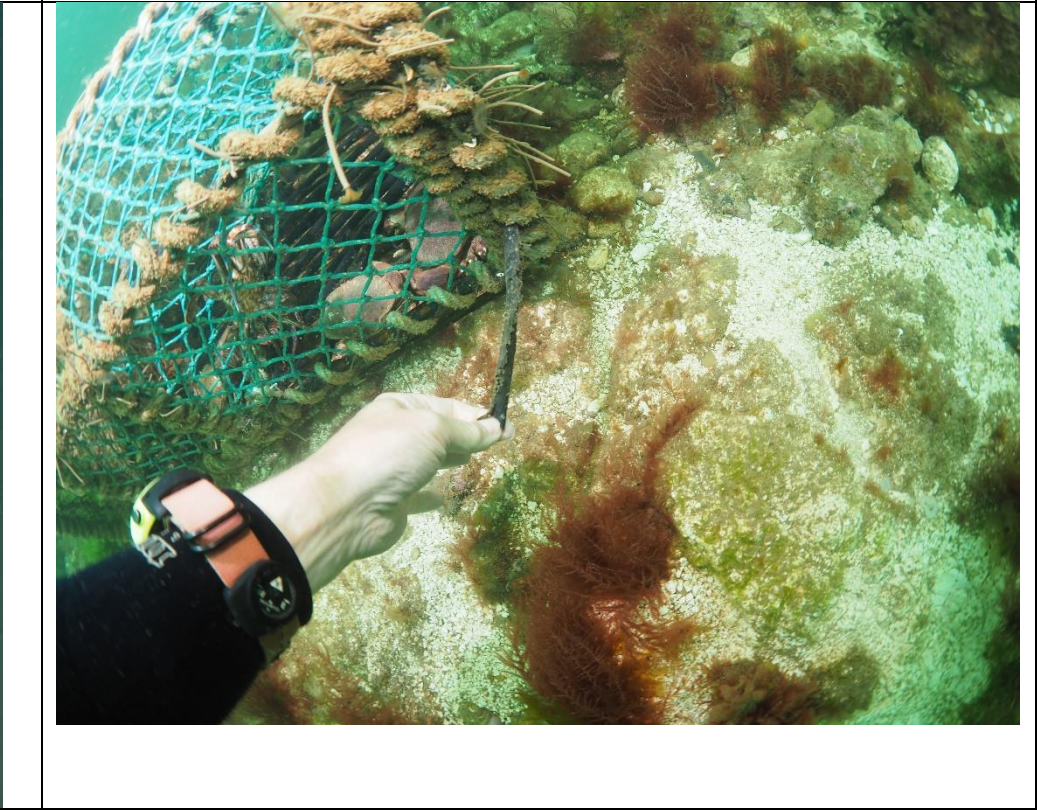
3



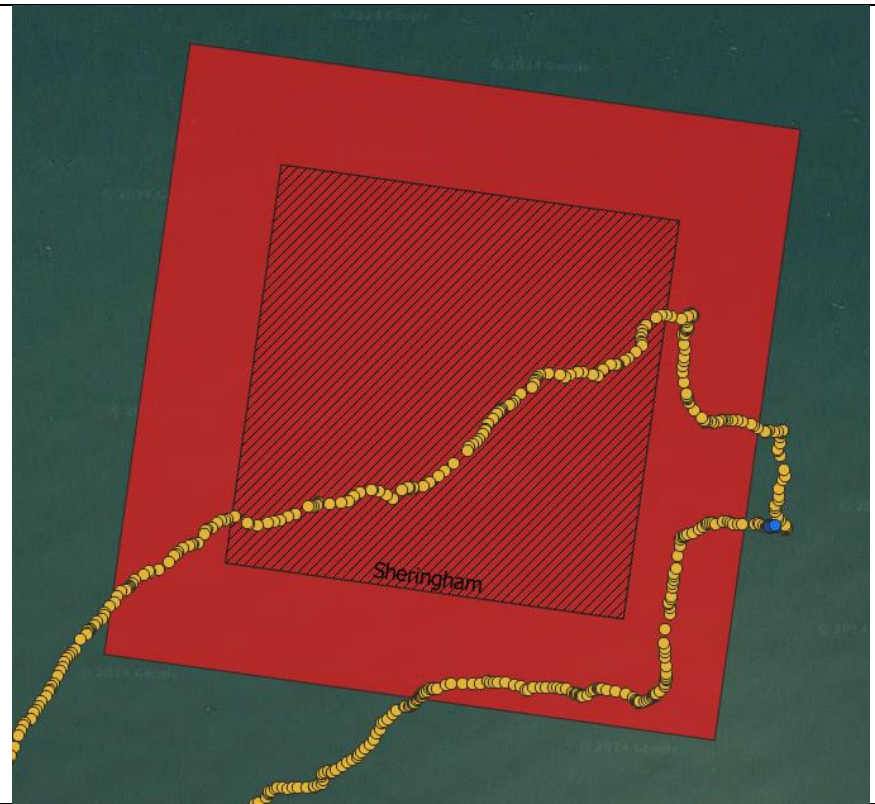
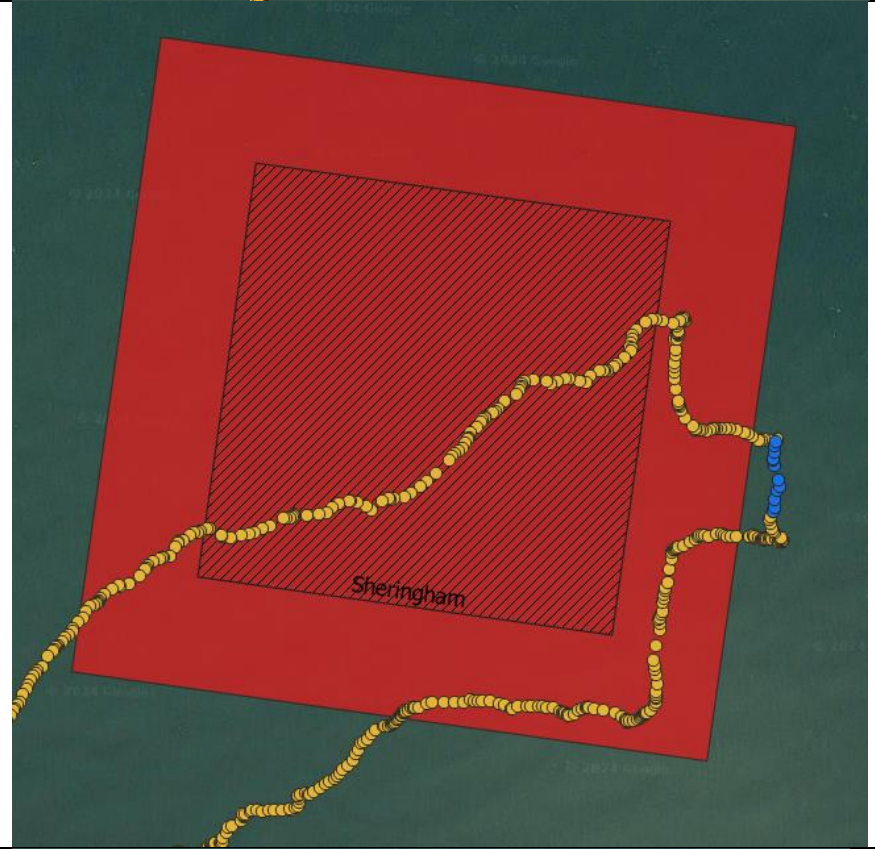
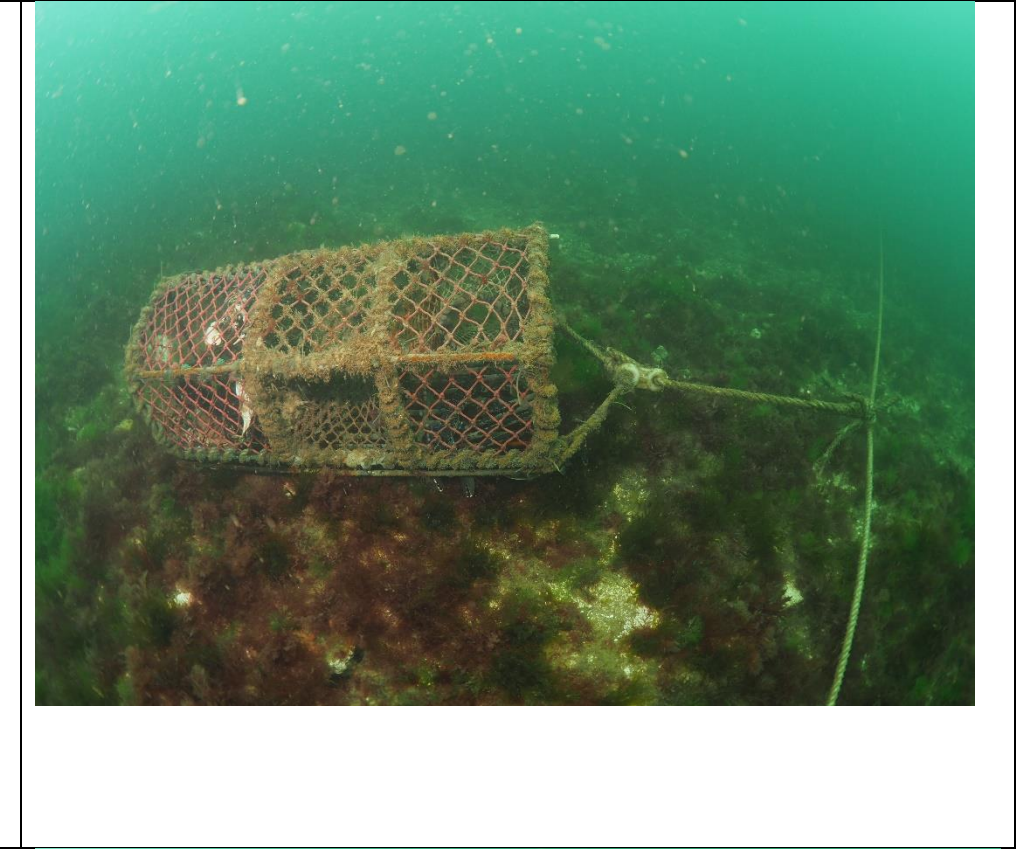
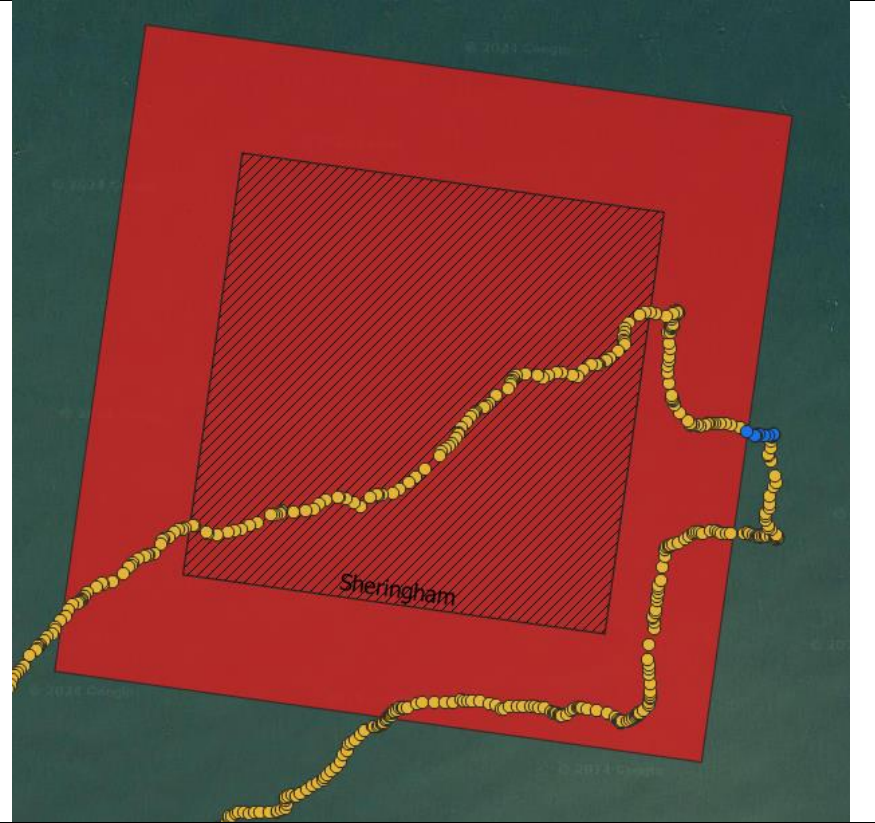
4



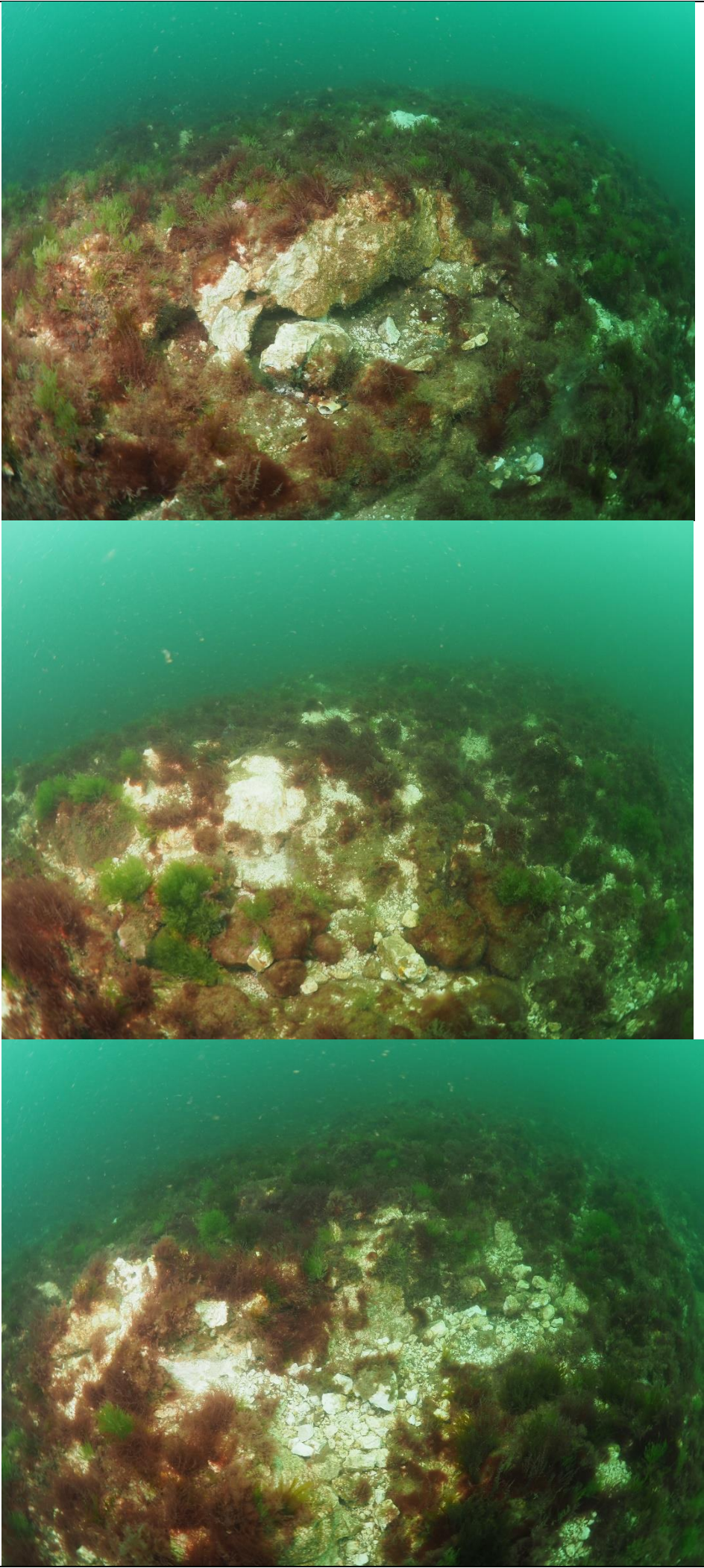
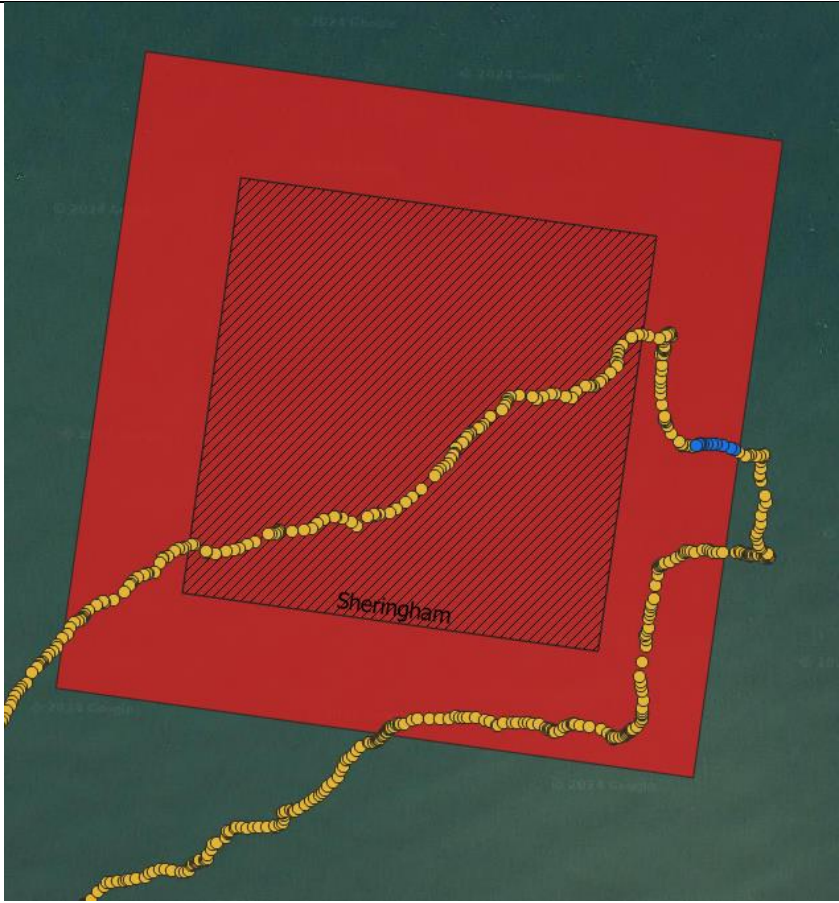


|   |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                 |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 |  <p>A map of the Sheringham area, showing a red boundary and a yellow line of buoys. The word "Sheringham" is written on the map.</p>   |  <p>An underwater photograph showing a lobster trap on the seabed. The trap is made of green mesh and is covered in seaweed. A rope is attached to the trap.</p>                              |
| 6 |  <p>A map of the Sheringham area, showing a red boundary and a yellow line of buoys. The word "Sheringham" is written on the map.</p>  |  <p>An underwater photograph showing a lobster trap on the seabed. The trap is made of green mesh and is covered in seaweed. A rope is attached to the trap.</p>                             |
| 7 |  <p>A map of the Sheringham area, showing a red boundary and a yellow line of buoys. The word "Sheringham" is written on the map.</p> |  <p>An underwater photograph showing a person's hand holding a tool near a lobster trap. The trap is made of green mesh and is covered in seaweed. The person is wearing a black watch.</p> |

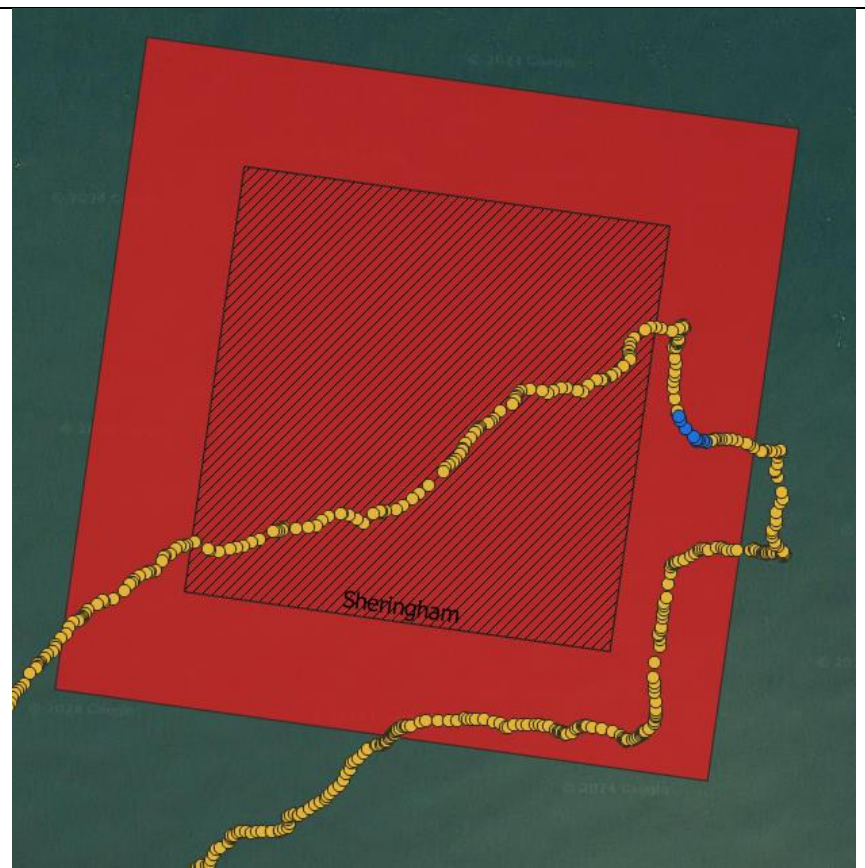
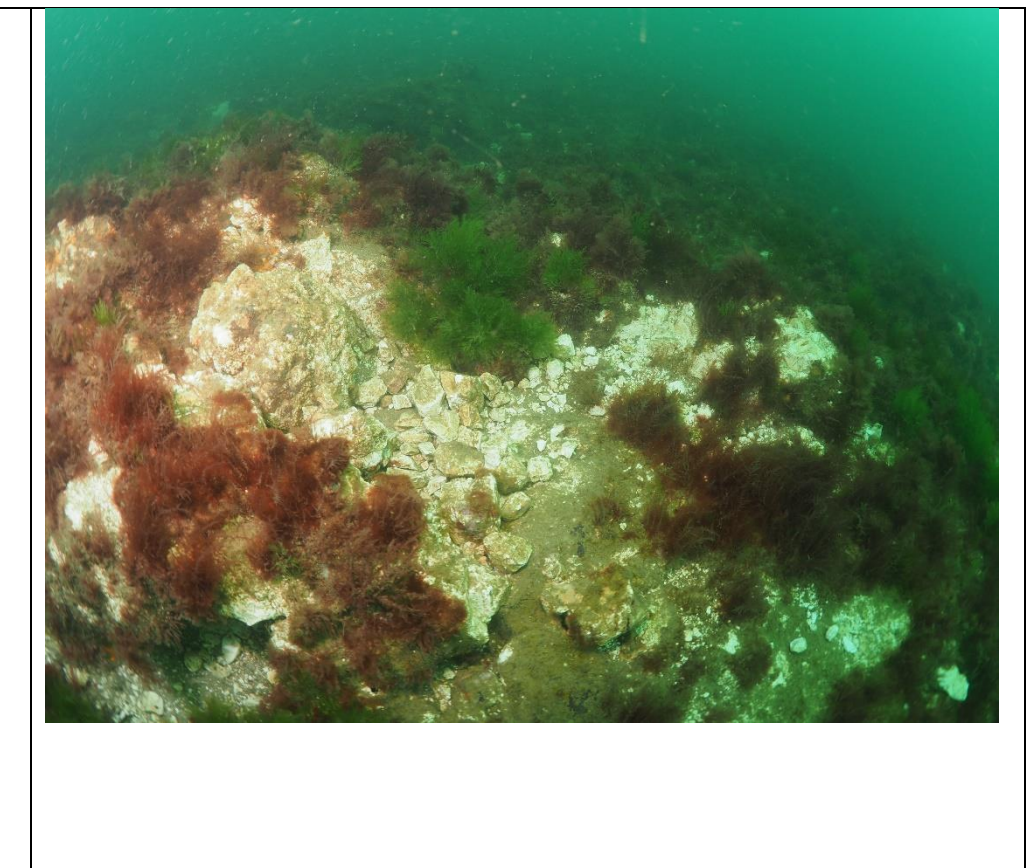
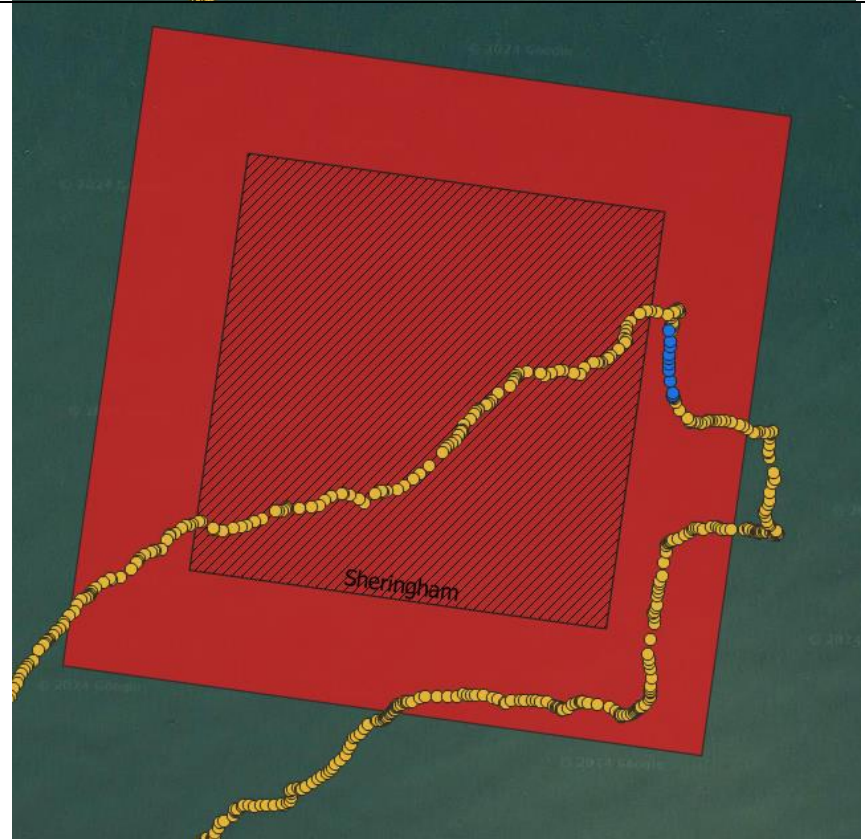
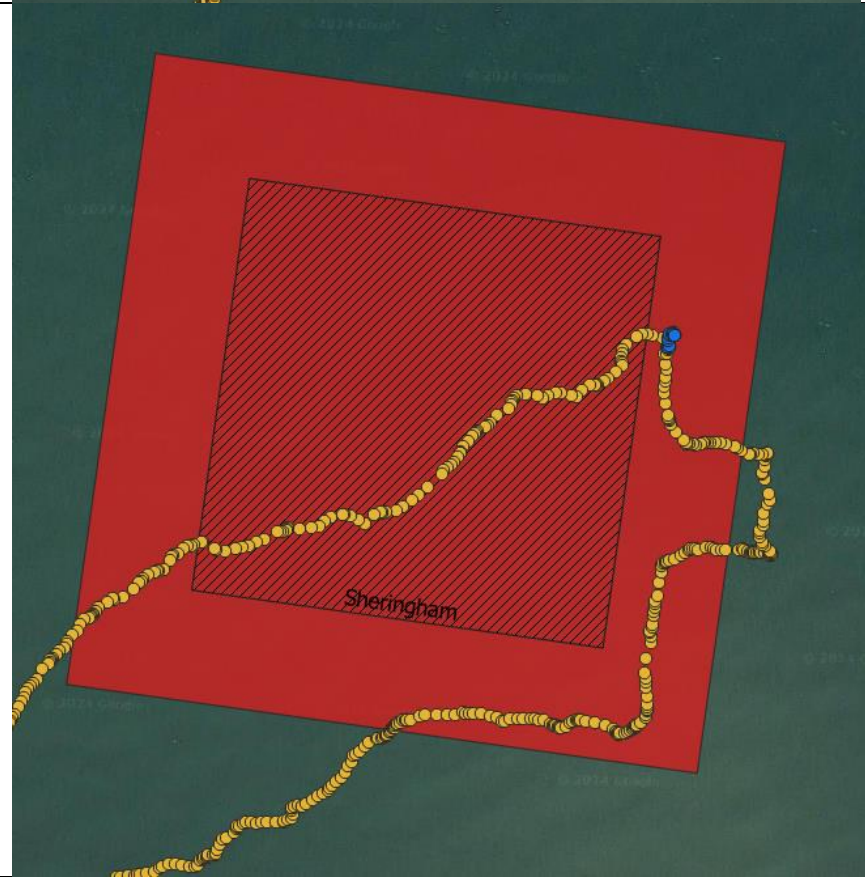


|    |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                    |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  |  <p>A map showing a red rectangular boundary on a dark background. Inside the boundary is a hatched rectangular area labeled "Sheringham". A yellow dotted line with a blue dot at the end follows a path that enters from the left, goes up, then right, then down, and finally right again, ending at the blue dot.</p>   |  <p>A close-up photograph of a blue mesh trap on the seabed. The trap is made of a blue plastic mesh and is filled with dark, possibly dead, fish or other marine life. The seabed is covered in rocks and some green algae.</p> |
| 9  |  <p>A map showing a red rectangular boundary on a dark background. Inside the boundary is a hatched rectangular area labeled "Sheringham". A yellow dotted line with a blue dot at the end follows a path that enters from the left, goes up, then right, then down, and finally right again, ending at the blue dot.</p>  |  <p>A photograph of a brown mesh trap on the seabed. The trap is made of a brown plastic mesh and is filled with dark, possibly dead, fish or other marine life. The seabed is covered in rocks and some green algae.</p>       |
| 10 |  <p>A map showing a red rectangular boundary on a dark background. Inside the boundary is a hatched rectangular area labeled "Sheringham". A yellow dotted line with a blue dot at the end follows a path that enters from the left, goes up, then right, then down, and finally right again, ending at the blue dot.</p> |  <p>A photograph of a brown mesh trap on the seabed. The trap is made of a brown plastic mesh and is filled with dark, possibly dead, fish or other marine life. The seabed is covered in rocks and some green algae.</p>      |

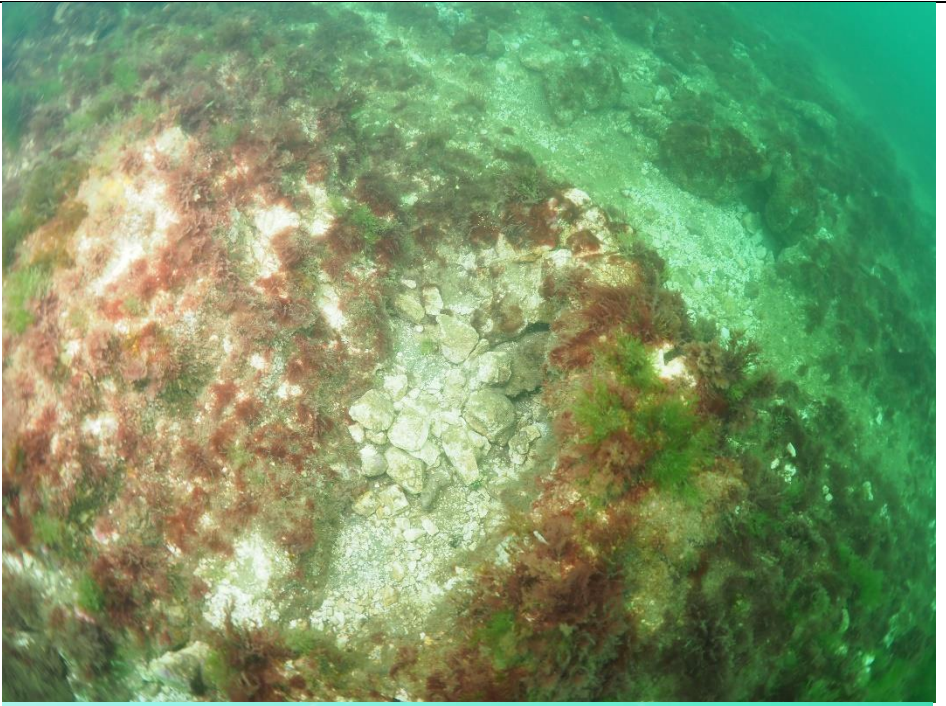
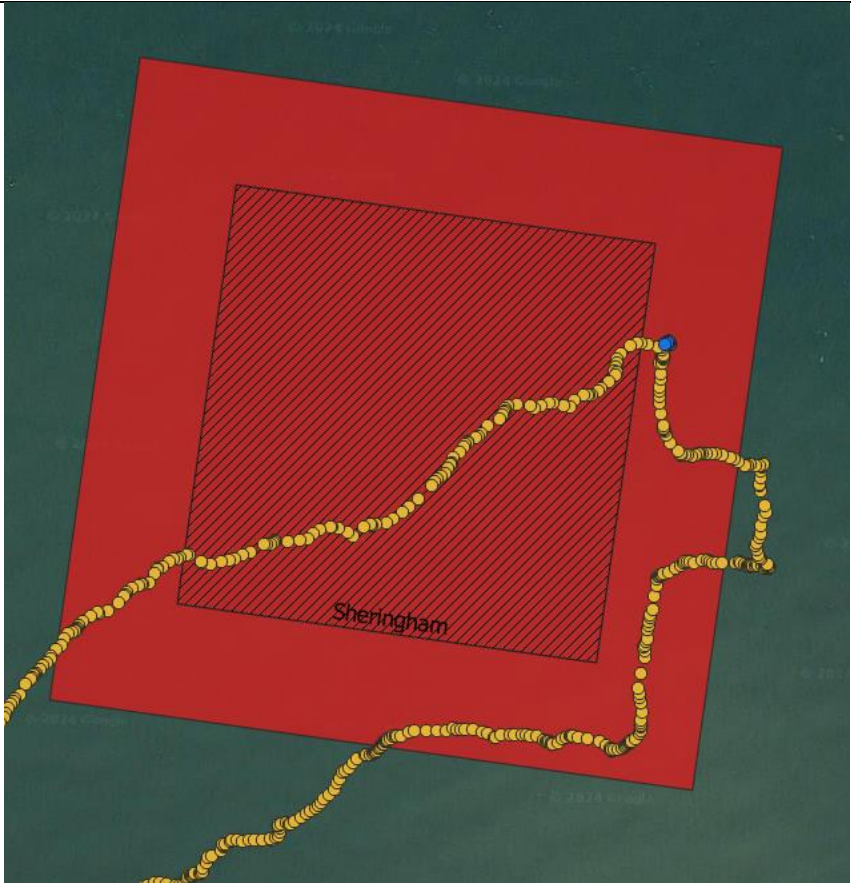






|    |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                            |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12 |  <p>A map of the Sheringham area, showing a red boundary and a yellow line of points. The word "Sheringham" is written inside the red boundary. The map is oriented with the red boundary on the left and the yellow line of points on the right.</p>   |  <p>An underwater photograph showing a rocky seabed covered in green and brown algae. The water is clear and blue.</p>   |
| 13 |  <p>A map of the Sheringham area, showing a red boundary and a yellow line of points. The word "Sheringham" is written inside the red boundary. The map is oriented with the red boundary on the left and the yellow line of points on the right.</p>  |  <p>An underwater photograph showing a rocky seabed covered in green and brown algae. The water is clear and blue.</p>  |
| 14 |  <p>A map of the Sheringham area, showing a red boundary and a yellow line of points. The word "Sheringham" is written inside the red boundary. The map is oriented with the red boundary on the left and the yellow line of points on the right.</p> |  <p>An underwater photograph showing a rocky seabed covered in green and brown algae. The water is clear and blue.</p> |

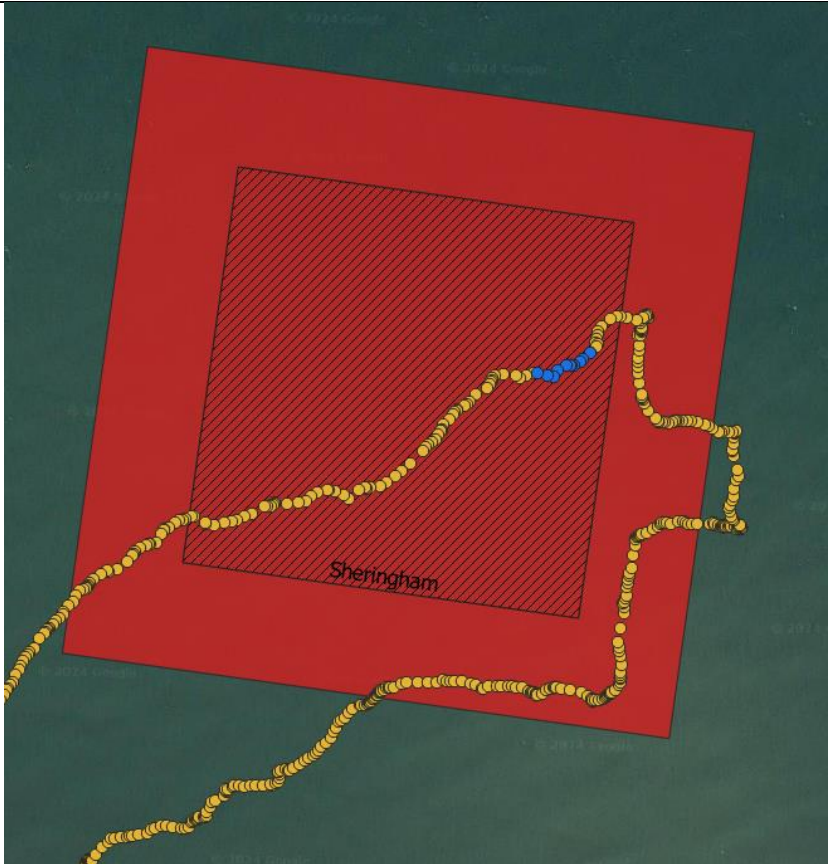




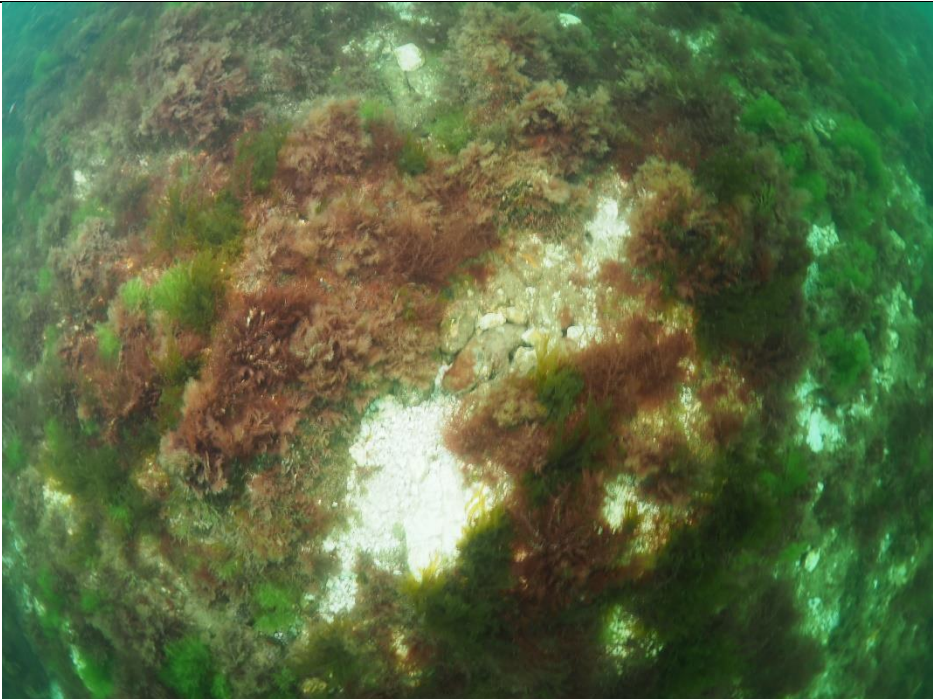




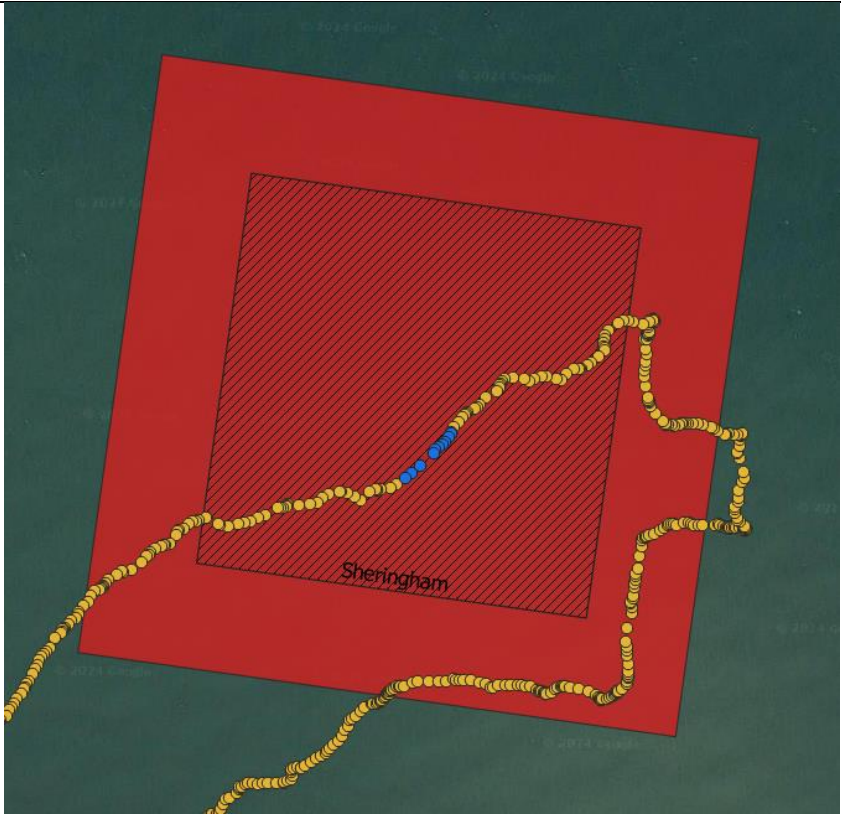






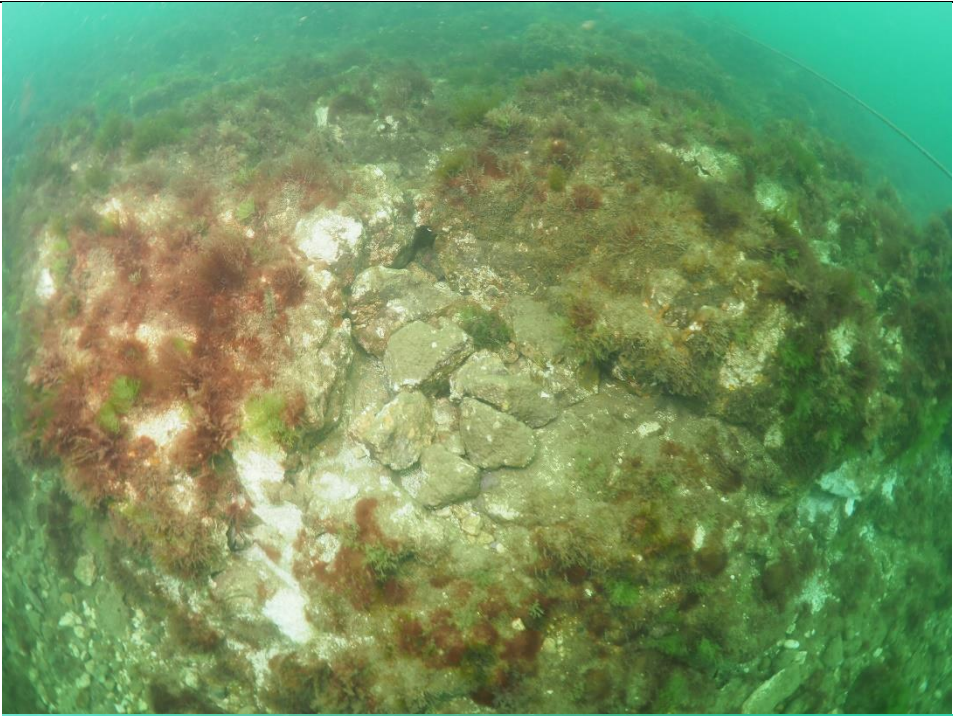
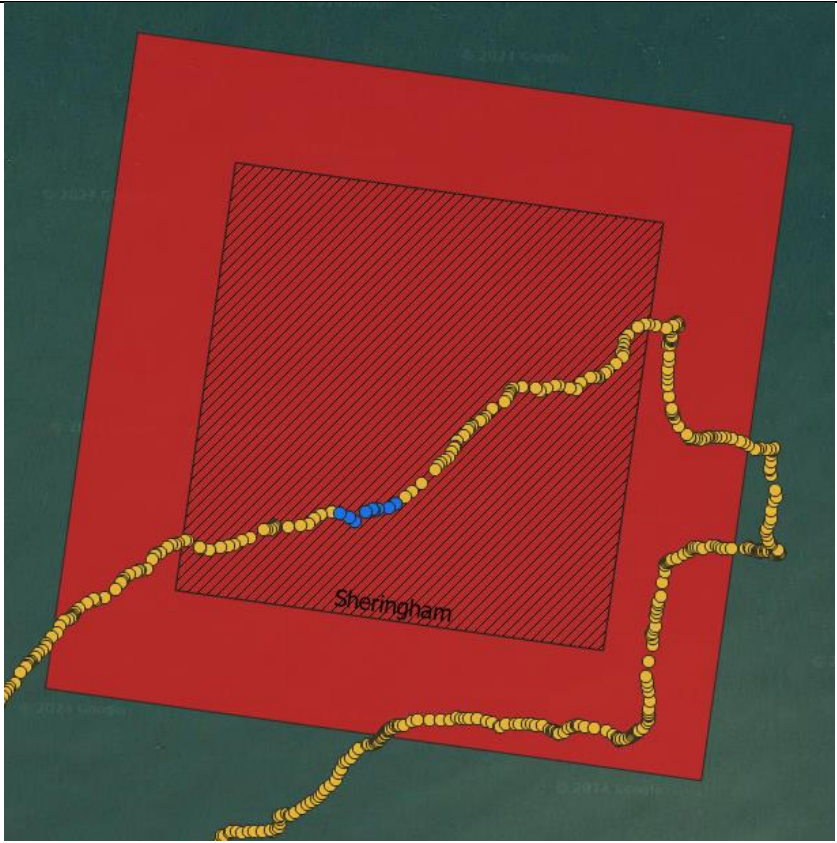




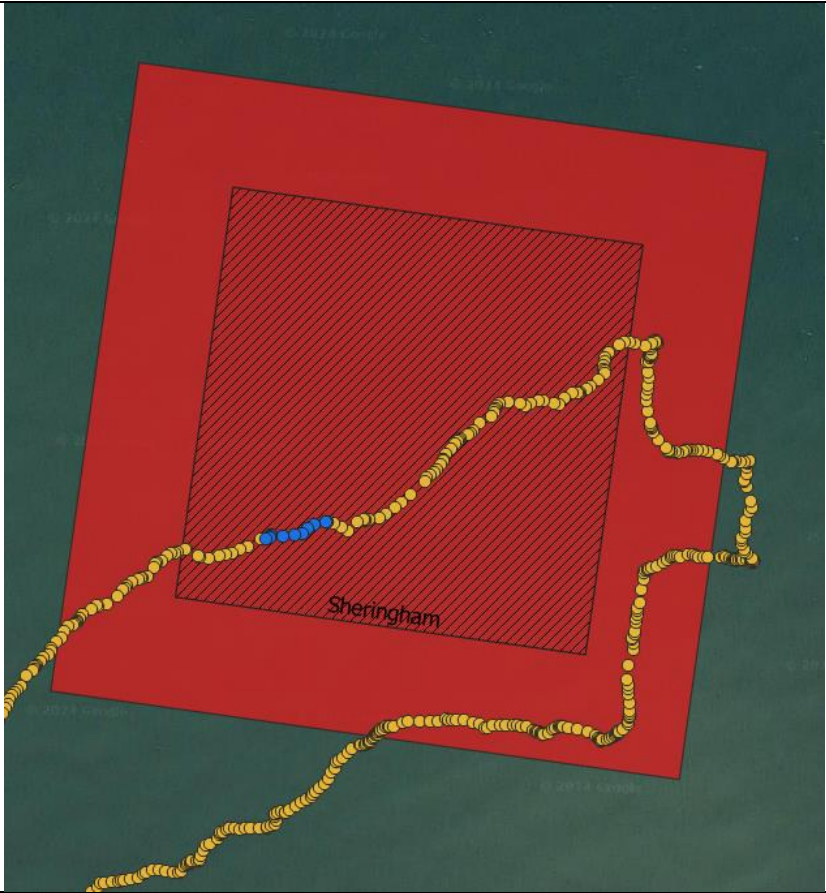




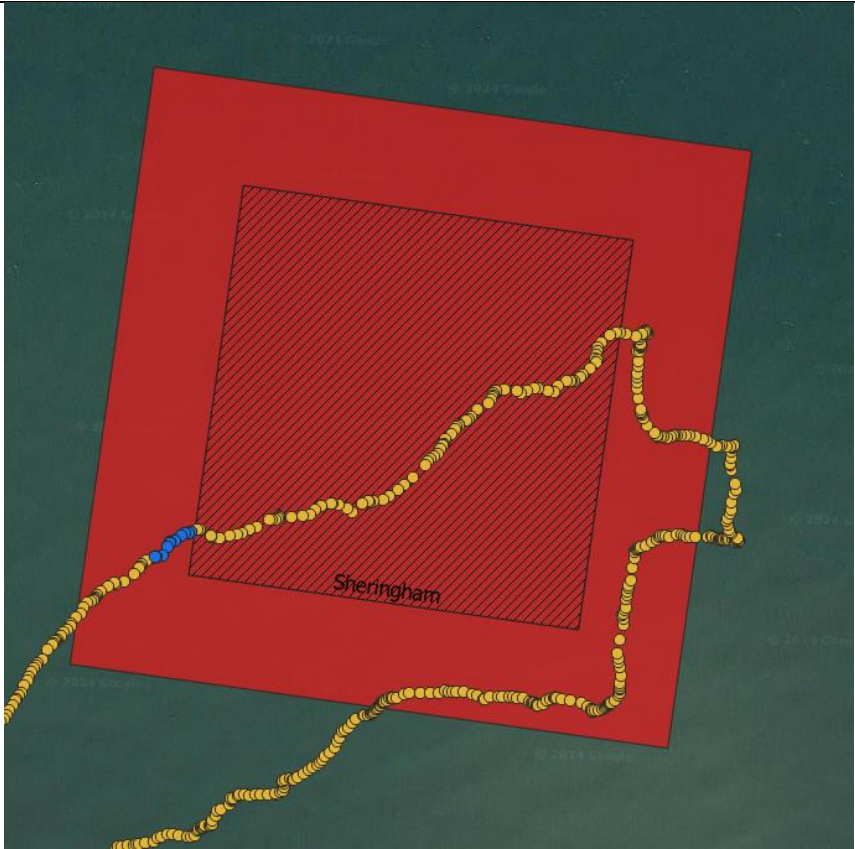
20



21







## **Annex 4: Activity in experimental open areas**

### 2022 Tracker data

Tracker data indicates that typically 20 pings are recorded per shank. Table 1 presents the number of tracker pings recorded in each open experimental area in 2022, the estimated total / year (based on the conservative estimate that tracker data collected in 2022 represented ~30% of activity for this year) and the estimated number of shanks of gear this corresponds to. Note that estimate were conservative and so this is considered likely an underestimate. The average number of shanks per year according to these estimates is 25.

Table 1: Activity in the experimental open areas in 2022

| <b>Open site</b> | <b>No. of pings (2022 tracker data ~30%)</b> | <b>Estimated total no. of pings / year (100%)</b> | <b>Estimated no. of shanks per year</b> |
|------------------|----------------------------------------------|---------------------------------------------------|-----------------------------------------|
| 1                | 160                                          | 533                                               | 26.65                                   |
| 2                | 85                                           | 283                                               | 14.15                                   |
| 3                | 203                                          | 670                                               | 33.50                                   |

### 2024 Tracker data

Tracker data available for 2024 is much more limited, with uptake ranging between 0-28% of those that pot in the study area since the multibeam baseline data was collected. Uptake of trackers is presented in Table 2, along with observations of activity using trackers, estimated level of activity and observed activity in the closed areas (from trackers and patrols). This data should be interpreted with caution as potting activity is typically territorial with individuals targeting specific patches. This tracker data is heavily biased by one individual who is known to typically fish between Weybourne and Sheringham, thus, the data likely overrepresents activity in Sheringham and underrepresents activity in West Runton and East Runton.



Table 2: 2024 tracker data between May and August

| Week          | Potters which fish in study area |                 |            | Tracker data             |    |    | Estimated level of activity |       |     | Tracker and patrols      |    |    |
|---------------|----------------------------------|-----------------|------------|--------------------------|----|----|-----------------------------|-------|-----|--------------------------|----|----|
|               | No. with tracker data            | % of total (17) | Multiplier | Activity in potted areas |    |    | Activity in potted areas    |       |     | Activity in closed areas |    |    |
|               |                                  |                 |            | SH                       | WR | ER | SH                          | WR    | ER  | SH                       | WR | ER |
| 17/05 - 23/05 | 2                                | 11.8            | 8.5        | 2                        | 0  | 0  | 17                          | 0     | 0   | 0                        | 0  | 0  |
| 24/05 - 30/05 | 2                                | 11.8            | 8.5        | 1                        | 1  |    | 8.5                         | 8.5   | 0   | 0                        | 0  | 0  |
| 31/05 - 06/06 | 1                                | 5.9             | 17.0       | 0                        | 0  | 0  | 0                           | 0     | 0   | 0                        | 0  | 0  |
| 07/06 - 13/06 | 0                                | 0.0             |            |                          |    |    |                             |       |     | 1                        | 0  | 0  |
| 14/06 - 20/06 | 1                                | 5.9             | 17.0       | 0                        | 0  | 0  | 0                           | 0     | 0   | 0                        | 0  | 0  |
| 21/06 - 27/06 | 0                                | 0.0             |            |                          |    |    |                             |       |     | 2                        | 0  | 0  |
| 28/06 - 04/07 | 1                                | 5.9             | 17.0       | 2                        | 0  | 0  | 34                          | 0     | 0   | 0                        | 0  | 0  |
| 05/07 - 11/07 | 2                                | 11.8            | 8.5        | 0                        | 0  | 1  | 0                           | 0     | 8.5 | 0                        | 0  | 0  |
| 12/07 - 18/07 | 3                                | 17.6            | 5.7        | 0                        | 0  | 0  | 0                           | 0     | 0   | 0                        | 0  | 0  |
| 19/07 - 25/07 | 4                                | 23.5            | 4.3        | 1                        | 1  | 0  | 4.25                        | 4.25  | 0   | 0                        | 0  | 0  |
| 26/07 - 01/08 | 4                                | 23.5            | 4.3        | 1                        | 2  | 0  | 4.25                        | 8.5   | 0   | 0                        | 0  | 0  |
| 02/08 - 08/08 | 4                                | 23.5            | 4.3        | 1                        | 2  | 0  | 4.25                        | 8.5   | 0   | 1                        | 0  | 0  |
| 09/08 - 15/08 | 2                                | 11.8            | 8.5        | 0                        | 0  | 0  | 0                           | 0     | 0   | 2                        | 5  | 0  |
| 16/08 - 22/08 | 2                                | 11.8            | 8.5        | 1                        | 0  | 0  | 8.5                         | 0     | 0   | 0                        | 1  | 0  |
| 23/08 - 29/08 | 2                                | 11.8            | 8.5        | 2                        | 0  | 0  | 17                          | 0     | 0   | 0                        | 0  | 0  |
| Total:        |                                  |                 |            | 11                       | 6  | 1  | 97.75                       | 29.75 | 8.5 | 6                        | 6  | 0  |