



Sea Trout SAMARCH 2019 Netting Survey Field Report 28th and 29th March



Survey Field Report for the Sea Trout SAMARCH Netting Survey in Whitsand Bay and off Rame Head

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1 Project Background

Cornwall Inshore Fisheries and Conservation Authority (IFCA) was contracted in 2018 to catch sea trout (*Salmo trutta*) in the south-west to support the Salmonid Management Around the Channel project (SAMARCH). SAMARCH is a five year multi-national partnership project that started in 2017. The project is collecting data from both sides of the Channel to inform the future management of salmon and sea trout fisheries.

This is Cornwall IFCA's second year of involvement in the project and netting for sea trout is proposed to take place in the spring on multiple dates in Plymouth Sound and surrounding areas. Dispensation has been sought and approved for this project from the Environment Agency, who are responsible for the management of salmonid fisheries.

1.1 Aims and objectives

1.1.1 Aims

- To net for sea trout to provide carcasses to the SAMARCH project.

1.1.2 Objectives

- To further refine the method of netting for sea trout to be repeated on future surveys by Cornwall IFCA.

2 Methodology

2.1 Survey Area

Whitsand Bay is a Marine Conservation Zone (MCZ) on the south coast of Cornwall, slightly to the west of Plymouth Sound. Rame Head is the prominent headland between Whitsand Bay and Plymouth Sound. The area used for the survey off Rame Head is just inside the Plymouth Sound and Estuaries special Area of Conservation (SAC). The survey location is shown in Figure 1.

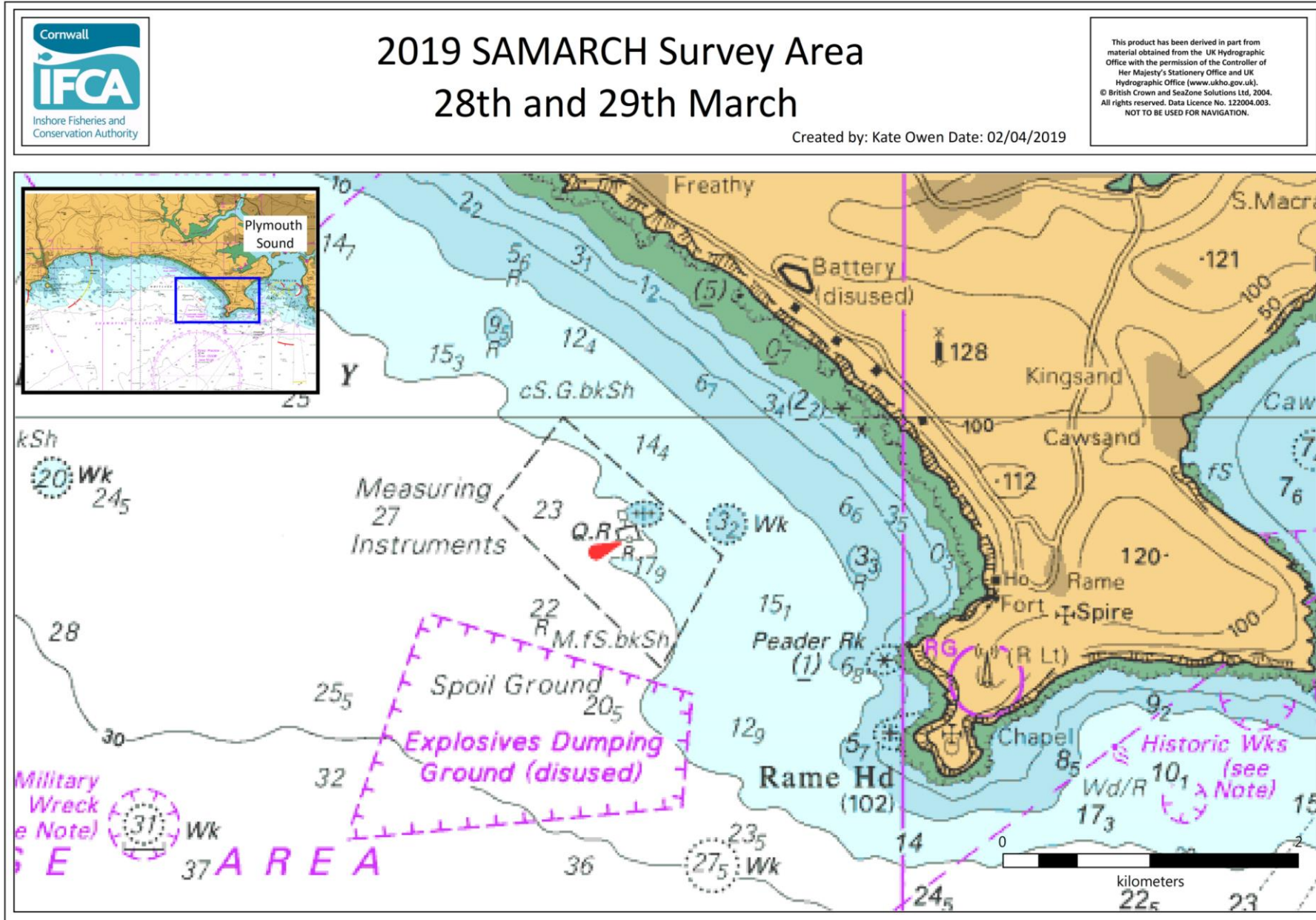


Figure 1: Map showing the location of the survey area in Whitsand Bay and off Rame Head

2.2 Vessel Specification

The Cornwall IFCA research vessel (R/V) Tiger Lily VI (Figure 2) has been refitted for survey work and includes a purpose built survey station within the wheelhouse, fitted with an inverter and uninterruptable power supply (UPS) for stable 240v power, NMEA outputs and dedicated GPS with WAAS enabled. All position information was recorded using the Long/Lat WGS84 projection taken from the dedicated survey GPS receiver. All times recorded are in UTC from a single source, a Furuno GP32 GPS. R/V Tiger Lily VI is MCA coded to Cat 2 and is fitted with all necessary safety equipment, including life rafts, lifejackets, first aid kits and fire suppression systems. The vessel specification is shown in Annex 1.



Figure 2: Cornwall IFCA's dedicated survey vessel, R/V Tiger Lily VI.

2.3 Personnel

The crew on the 28th and 29th March 2019 consisted of three Cornwall IFCA scientific officers (Colin Trundle, Annie Jenkin and Steph Sturgeon) and skipper (Chris Lowe).

2.4 Personal Protective Equipment (PPE)

While working on deck crew were required to wear lifejackets with safety knives and personal location beacons (PLBs) attached and steel toe cap boots. Toolbox Talks were carried out for all crew before any survey operations commenced. Crew were made aware whenever the net was being shot and kept well clear of the equipment as it went overboard. As the net was hauled, good communications were maintained and feet kept clear of the net, as sometime it was necessary to pay the net back out into the water. No accidents or near misses were reported.

2.5 Netting Survey

2.5.1 Equipment Specification

Two gill nets, with mesh sizes of 90 mm and 100 mm, were set on the 28th March 2019.

Floats were attached at regular intervals along the headlines to keep the nets at the surface of the water. A 5kg anchor was attached at each end of the nets and dahns used to mark the ends. Whilst transiting to the site the nets were stored in a container on deck at the stern of Tiger Lily, flaked and ready for deployment. Ends (anchors and dahns with flashing lights) were attached to the nets on the deck, prior to deployment (Figure 3).



Figure 3: Cornwall IFCA Principal Scientific Officer attaching ends to a net prior to deployment on board R/V Tiger Lily 28th March 2019

2.5.2 Methodology

Locations for deployment of the nets were chosen based on expert opinion and local knowledge of sea trout. Deployment of the net was from the stern of Tiger Lily, through the A-Frame. The first marker buoys were cast away and the net left to run out freely as the vessel moved slowly forwards against the tide. All crew were present on deck and kept clear of the net as it was deployed.

20190328_CIFCA_SAC_Netning_SeaTrout

Four targets were created in Hypack MAX Version 2018 for each net. A target was created for start of line (SOL – anchor overboard), when the net itself started to go overboard, when the second anchor went overboard and when all gear had gone overboard (end of line -EOL).

Nets were left in the water overnight. Dahns at the end of nets were located prior to hauling the nets and a boat hook used to pull in the line. Nets were hand-hauled through the gunwale door on the starboard side of Tiger Lily, with the vessel motoring against the tide. One crew member was responsible for hauling the nets on board (Figure 4) whilst the other two crew members flaked the nets back into the container on deck, ready for transit back to Falmouth Bay (Figure 5). Any fish caught were removed from the net for later identification and to be photographed.



Figure 4: Cornwall IFCA Principal Scientific Officer hauling net through the gunwhale door of R/V Tiger Lily on the 29th March 2019

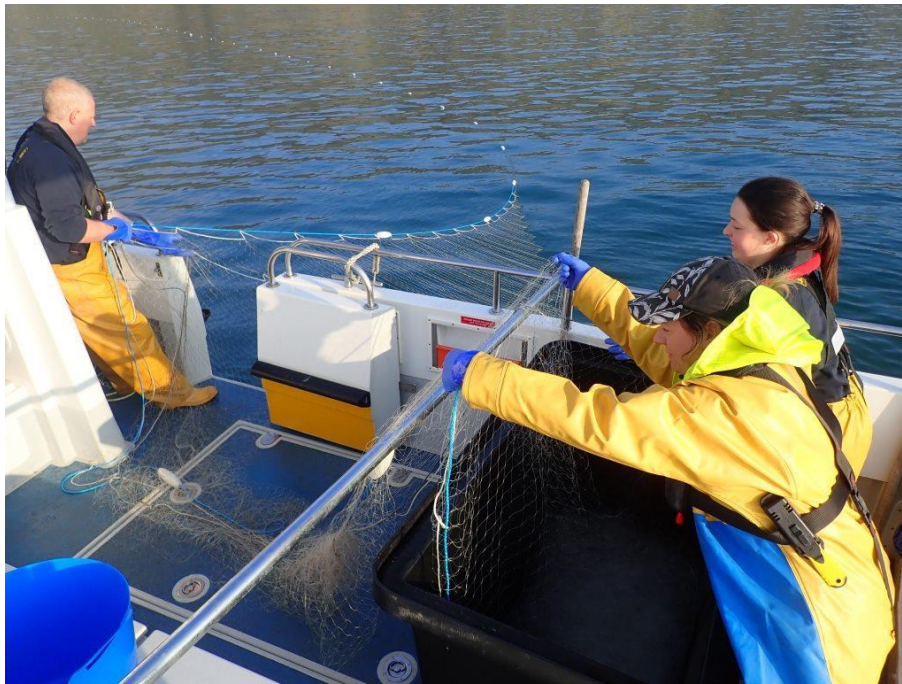


Figure 5: Cornwall IFCA Scientific Officers hauling net overboard and flaking it into the container on the deck of R/V Tiger Lily, 29th March 2019

2.5.2.1 Survey log

Arrival at the survey site on the 28th March was at approximately 19:45. Visibility had deteriorated during the afternoon and by 18:00 it was at times no more than one cable.

The first net (mesh size 100mm) was deployed in Whitsand Bay at approximately 19:45 (UTC). The shallowest end was set first, with the vessel moving in a south-westerly direction as the net was deployed. The second net (mesh size 90mm) was deployed just off Rame Head at approximately 20:16 (UTC). Again the shallowest end was set first, with the vessel moving in a south-easterly direction as the net was deployed. All nets were shot away without any issues. Tiger Lily then transited to her overnight mooring at Sutton Harbour Marina.

At approximately 07:00 (UTC) on the 29th March 2019 Tiger Lily left Sutton Harbour. R/V Tiger Lily then transited to the second net set, just off Rame Head. Net two (90mm) was hauled at 07:38 until 08:06 (UTC). Tiger Lily then transited to Whitsand Bay where net one (100mm) was hauled at 08:30 until 08:59 (UTC). Once all gear was onboard Tiger Lily then transited back to Falmouth Bay.

The daily logs for the 28th March and 29th March 2019 are shown in Annex Table A and Annex Table B.

20190328_CIFCA_SAC_Netteding_SeaTrout

3 Results

The exact locations of the net deployments on the 28th March 2019 are shown below in Table 1. Locations of the nets have been mapped and are shown in Figure 6 below.

Table 1: Time and location of the fishing net deployments from R/V Tiger Lily on 28th March 2019

| Date | Time | Name | WGS84 Latitude | WGS84 Longitude | Mesh size | Depth (m) |
|------------|----------|----------------------------|----------------|-----------------|-----------|-----------|
| 03/28/2019 | 19:45:15 | Arrive on survey site | 50.342035 | -4.260325 | | 9.7 |
| 03/28/2019 | 19:45:31 | Net 1 SOL - anchor away | 50.341947 | -4.260282 | 100 mm | 9.9 |
| 03/28/2019 | 19:45:53 | Net 1 - net goes overboard | 50.341772 | -4.260290 | | 10.1 |
| 03/28/2019 | 19:49:45 | Net 1 - 2nd anchor away | 50.340422 | -4.261782 | | 13.7 |
| 03/28/2019 | 19:49:48 | Net 1 EOL - all deployed | 50.340409 | -4.261813 | | 13.7 |
| 03/28/2019 | 20:16:32 | Net 2 SOL - anchor away | 50.314602 | -4.215318 | 90 mm | 10.5 |
| 03/28/2019 | 20:16:42 | Net 2 - net goes overboard | 50.314590 | -4.215152 | | 11.1 |
| 03/28/2019 | 20:18:18 | Net 2 - 2nd anchor away | 50.314082 | -4.212497 | | 14.6 |
| 03/28/2019 | 20:18:23 | Net 2 EOL - all deployed | 50.314072 | -4.212353 | | 15.2 |

No sea trout were caught in the nets on this survey. In net one (100mm) one dogfish (*Squalus acanthias*) was caught (Annex Figure A). In net two (90mm) one mackerel (*Scomber scombrus*) and one pollock (*Pollachius pollachius*) were caught.

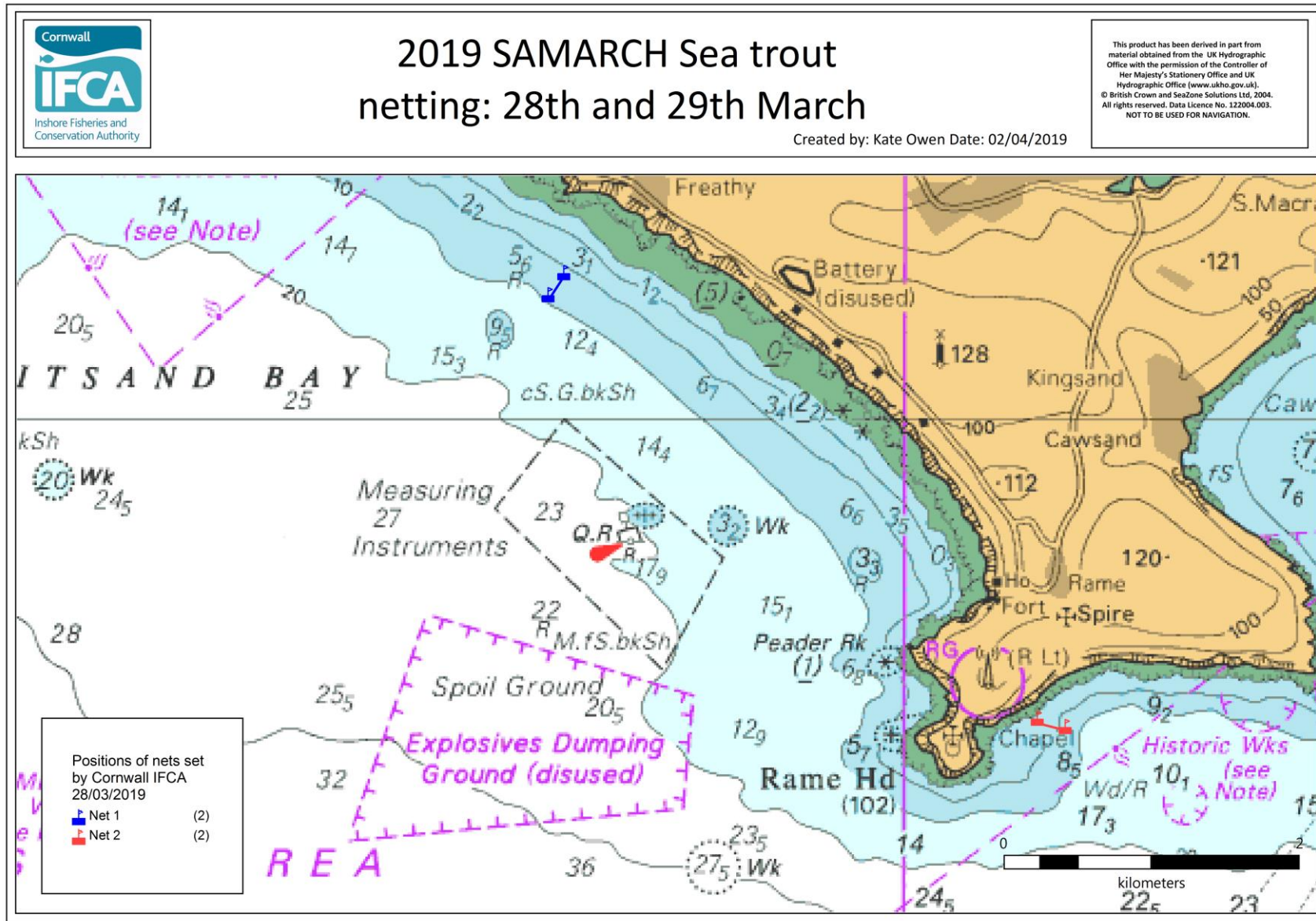


Figure 6: Map showing Whitsand Bay and the location of the two nets shot by Cornwall IFCA on 28th March 2019. Locations shown on the map are from where the start of the net went overboard to where the second anchor went overboard

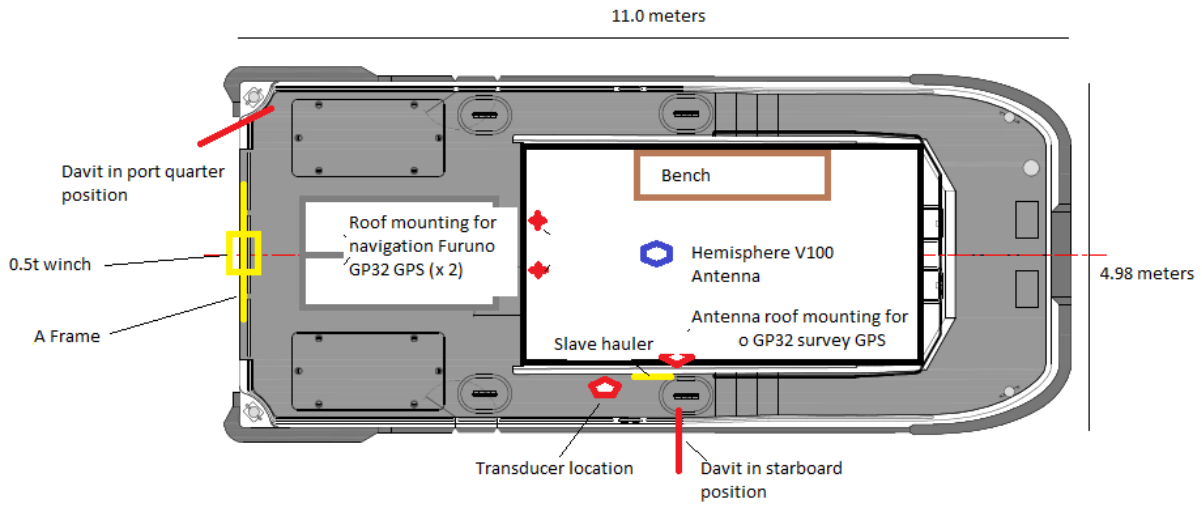
4 Appendices

Annex 1 – RV Tiger Lily Deck Plan & Offsets



| | |
|----------------------------|--|
| Builder | South Boats Ltd |
| Model | Island MkII |
| Built | 2007 |
| LOA | 11.0m |
| Beam | 4.98m |
| Draught | 1.1m (aft) |
| Tonnage | c.10 tonnes |
| Area of operation | MCA Category 2 |
| Call sign | MRWR7 |
| MMSI Number | 235054954 |
| MECAL Certification number | M07WB0111059 |
| Complement | 14 (including min 2 crew) |
| Propulsion | 2 x 450hp Iveco NEF series |
| Speed | Cruising: 16 – 18 knots Top: 24 – 26 knots |
| Range | c. 400 nautical miles |
| 240v AC supply | Victron 3Kw power inverter 5KvA Volvo-Perkins generator (All 240 AC power is accessed via APC Smart UPS C1500) |
| Stern Gantry | 500kg SWL |
| Winch (on stern gantry) | Spencer Carter 0.5t with scrolling level wind |
| Slave hauler | Sea Winch 200m dia. |
| Electric line hauler | 12v Spencer Carter Bandit |
| Positioning | Hemisphere V100 GNSS 3 x Furuno GP32 |
| NMEA data outputs | 4 x USB 4 x Serial 4 x banjo |
| Navigation | Olex with data export Knockle Hypack Max |

Tiger Lily VI General Layout - Plan view



Settings

| Equipment | | | Offset (m) | | |
|------------------|---------------|-------------------------|------------|----------|-------|
| NMEA Device | Make/Model | Offset Name | X (Forw'd) | Y (Port) | Z (+) |
| Navigation depth | Furuno Navnet | Furuno transducer | 5.5 | 0.75 | -0.5 |
| Survey GPS | Furuno GP32 | Furuno mushroom antenna | 4.8 | 1.0 | |

20190328_CIFCA_SAC_Netted_SeaTrout

Annex 2 – Daily Logs

Daily log 1 – 28th March 2019Annex Table A: Daily log for 28th March 2019

| Project information | | | | |
|------------------------------|--|----------------|----------------|-----------|
| Project | SAMARCH 2019 | | | |
| Survey code | 20190328_SAMARCH | | | |
| Location | Whitsand Bay and Rame Head | | | |
| Date | 28 th March 2019 | | | |
| Vessel | Tiger Lily | | | |
| Staff | | | | |
| Survey role | Company | Name | | |
| Principal Scientific Officer | Cornwall IFCA | Colin Trundle | | |
| Scientific Officer | Cornwall IFCA | Annie Jenkin | | |
| Scientific Officer | Cornwall IFCA | Steph Sturgeon | | |
| Skipper | Independent | Chris Lowe | | |
| Weather and tides | | | | |
| High water time: | 10:19 (UTC) | | | |
| High water (m) | 4.4m | | | |
| Wind direction | W | | | |
| Wind speed | 7mph | | | |
| Beaufort scale | 2 | | | |
| Cloud coverage | 8/8 (thick fog) | | | |
| Time weather recorded | 19:00 | | | |
| Safety | | | | |
| Toolbox talk time | 18:45 | | | |
| Induction | None required | | | |
| Summary of operations | | | | |
| Time start (UTC) | Activity | Latitude (DD) | Longitude (DD) | Depth (m) |
| 18:48 | Transit to Whitsand Bay for netting | | | |
| 19:45 | Arrive on survey site | | | |
| 19:45 | Net 1 (100mm) - start anchor away (Whitsand Bay) | 50.341947 | -4.260282 | 9.9 |
| 19:45 | Net 1 – net starts to be deployed | 50.341772 | -4.260290 | 10.1 |
| 19:49 | Net 1 - end anchor away | 50.340422 | -4.261782 | 13.7 |
| 19:49 | Net 1 - everything deployed | 50.340409 | -4.261813 | 13.7 |
| 20:16 | Net 2 (90mm) – start anchor away (Rame Head) | 50.314602 | -4.215318 | 10.5 |
| 20:16 | Net 2 – net starts to be deployed | 50.314590 | -4.215152 | 11.1 |
| 20:18 | Net 2 - end anchor away | 50.314082 | -4.212497 | 14.6 |
| 20:18 | Net 2 - everything deployed | 50.314072 | -4.212353 | 15.2 |
| 20:20 | Transit to Sutton Harbour | | | |
| 21:15 | Arrive Sutton Harbour | | | |
| Overall progress | | | | |
| Action | Total | | | |
| Nets shot | 2 | | | |

20190328_CIFCA_SAC_Netted_SeaTrout

Daily log 2 – 29th March 2019Annex Table B: Daily log for 29th March 2019

| Project information | | | | | |
|------------------------------|--|--|---------------|----------------|-----------|
| Project | SAMARCH 2019 | | | | |
| Survey code | 20190328_CIFCA_SAMARCH | | | | |
| Location | Whitsand Bay and Rame Head | | | | |
| Date | 29 th March 2019 | | | | |
| Vessel | Tiger Lily | | | | |
| Staff | | | | | |
| Survey role | Company | Name | | | |
| Principal Scientific Officer | Cornwall IFCA | Colin Trundle | | | |
| Scientific Officer | Cornwall IFCA | Annie Jenkin | | | |
| Scientific Officer | Cornwall IFCA | Steph Sturgeon | | | |
| Skipper | Independent | Chris Lowe | | | |
| Weather and tides | | | | | |
| High water time: | 11:24 | | | | |
| High water (m) | 4.2 | | | | |
| Wind direction | SE | | | | |
| Wind speed | 8mph | | | | |
| Beaufort scale | 2 | | | | |
| Cloud coverage | Thick fog to start with (8/8) – sunny from 11:00 | | | | |
| Time weather recorded | 07:00 | | | | |
| Safety | | | | | |
| Toolbox talk time | 07:00 | | | | |
| Induction | None required | | | | |
| Summary of operations | | | | | |
| Time start (UTC) | Activity | Species | Latitude (DD) | Longitude (DD) | Depth (m) |
| 07:05 | Depart Sutton harbour | | | | |
| 07:30 | Arrive survey site | | | | |
| 07:38 | Start hauling net 2 (90mm) | | 50.314201 | -4.212590 | 13.6 |
| 08:06 | Finish hauling net 2 | 1 pollock and 1 mackerel. Pollock still alive so released and mackerel fell out of the net | 50.314257 | -4.215518 | 11.2 |
| 08:13 | Transit to next net | | | | |
| 08:30 | Start hauling net 1 (100mm) buff from the end of this line missing | 1 dogfish | 50.341518 | -4.264277 | 13.7 |
| 08:59 | Finish hauling net 1 | | 50.340578 | -4.261812 | 13.6 |
| 09:10 | Start transit to Veryan Bay | | | | |
| Overall progress | | | | | |
| Action | Total | | | | |
| Nets hauled | 2 | | | | |

Annex 3 – Catch photographs



Annex Figure A: The catch from net 1 (110 mm) hauled on 29th March 2019.