

## Seasearch Survey of Alderney 2008



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### Background

In 2007 the first Seasearch survey of Alderney (Wood 2007) provided information on sublittoral species and habitats from 15 sites around the island. A combination of factors led to most of the sites surveyed being shallow, seaweed dominated, ones and the deeper animal dominated sites were under-recorded. The 2007 report recommended that 7 additional sites of this nature be surveyed and 3 of them were recorded during this survey. Two of these are in the RAMSAR area.

This report contains information on the three new sites surveyed, following the same format as in the 2007 report and species list.

In addition a dive was undertaken to ascertain the extent of the seagrass bed in Longis Bay as there was a current proposal to route a cable to a tidal turbine through it.

The dives were undertaken by Chris Wood with assistance from John Weir as buddy and Roland Gauvin and others manning the Alderney Wildlife Trust's boat.

C. Wood (2008), Seasearch, c/o Marine Conservation Society,  
Unit 3 Wolf Business Park, Alton Road, Ross-on-Wye, HR9 5NB.

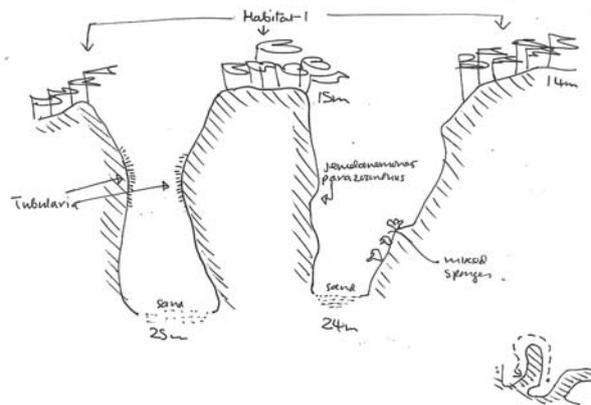
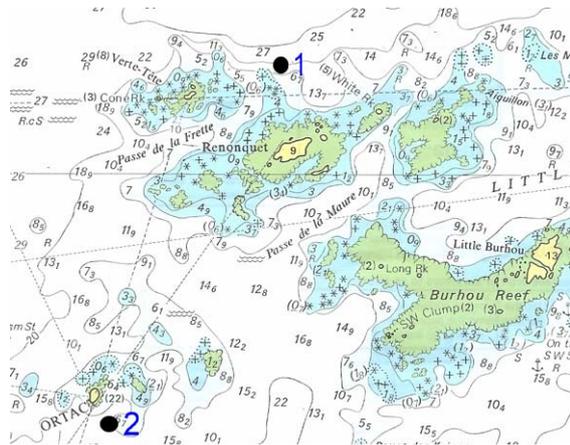
## Additional Sites Surveyed

Three additional sites were surveyed in 2008. It was only possible to undertake a single, relatively short, dive at each site and thus the time available for species recording was limited.

### Site 1: Renonquet (North)

(49° 44.237'N 002° 16.589'W)

Surveyed 30/06/08 by Chris Wood and John Weir. 1 Survey From completed



### Physical Environment

The site is in a very wave exposed location north-west of Renonquet rock and on the extreme north-west corner of the RAMSAR site and Alderney's group of rocks and islands. It comprised rocky reefs with deep gullies opening to the north and with vertical walls up to 10m high forming their sides. The area is subject to strong tidal streams.

### Habitat/Community Types

The shallow, upper, surfaces were dominated by a kelp forest of *Laminaria hyperborea* with an understory of red seaweeds and sponges. The vertical gully walls had a diverse mixed sponge turf with areas of oaten-pipe hydroids, *Tubularia indivisa*, and orange sea squirts, *Stolonica socialis*.

### Observations/Features of interest

The site had a rich circalittoral fauna dominated by sponges, with 17 species recorded in a short time. These included three species not recorded from Alderney's waters in 2007, one of which, *Hexadella racovitzi*, has only been recently identified as a species which can be reliably recorded in a visual survey. Other species which are typical of high energy sites are oaten pipe hydroids, *Tubularia indivisa* and orange sea squirts, *Stolonica socialis*. The combination of these species with pink sea fingers, *Alcyonium glomeratum*, yellow cluster anemones, *Parazoanthus axinellae* and occasional pink sea fans, *Eunicella verrucosa*, is a habitat frequently found in Sark and is probably typical of circalittoral rocky sites around Alderney.



Mixed faunal turf on a wall at Renonquet

## Site 2: Ortac

(49° 43.27'N 002° 17.29'W)

Surveyed 01/07/08 by Chris Wood and John Weir. 1 Survey Form completed

### Physical Environment

Ortac is a very wave exposed and tide swept site within the RAMSAR area and on the outer western edge of the Alderney group of rocks and islands. It is home to a gannet colony. Underwater there were fingers of rocky reef running from the rock to the south-west. Between the fingers, and beyond them, were flatter areas of rock, boulders and pebbles.

### Habitat/Community Types

There was a mixture of steep to vertical rock walls, boulders, cobbles, pebbles and coarse sand. Upper hard surfaces had a kelp park of mixed *Laminaria hyperborea* and *L. ochroleuca*, whilst all hard surfaces, both steep and upward facing, had large populations of oaten-pipe hydroids, *Tubularia indivisa*, typical of very high energy sites. Other fauna, particularly the sponges, was less diverse than other offshore sites such as Renonquet, Braye Rock and the southern side of Les Etacs.

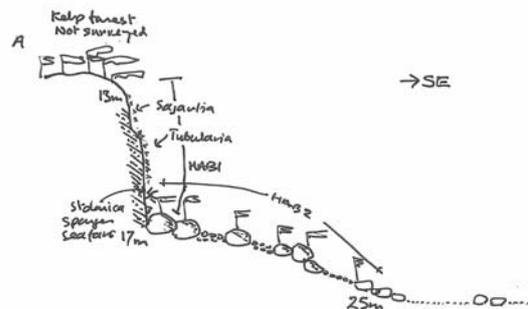
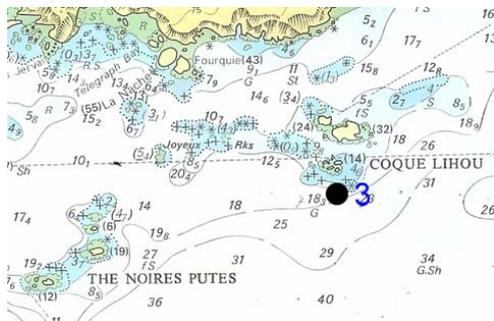
### Observations/Features of Interest

This site is probably typical of tide-swept middle depth rocky areas around Alderney where the topography is less dramatic than it was at either Renonquet or Braye Rock. The domination of the rock surfaces by oaten pipe hydroids is the characterising feature.

## Site 3: Coque Lihou

(49° 41.70'N 002° 12.60'W)

Surveyed 02/07/08 by Chris Wood and John Weir. 1 Survey Form completed



### Physical Environment

Coque Lihou lies off the south coast of Alderney and is outside the Ramsar site. Because of its southerly orientation it is less wave exposed than either Renonquet or Ortac. However it is on the edge of The Race and is therefore subject to strong tidal streams. The habitats were similar to Ortac with rock walls and steeply sloping surfaces flattening out at about 17m depth to a flatter seabed of large boulders, and cobbles.

### Habitat/Community Types

All of the flatter surfaces were characterised by the presence of kelp, *Laminaria hyperborea*, as forest on the upper surfaces and as park on the lower boulders. The steep surfaces were animal dominated with a dense covering of oaten pipe hydroids, *Tubularia indivisa*, and areas dominated by elegant anemones, *Sagartia elegans*, and a mixed turf of sponges and orange sea squirts, *Stolonica socialis*. A similar mix of species occurred on the boulders beneath the kelp park.

### Observations/Features of Interest

The habitats and species present here were very similar to those at Ortac.

## Summary of Habitats and Biotopes

The three sites surveyed were chosen because they were likely to include habitats and biotopes which were under-recorded in the 2007 survey. They were all wave and tide exposed sites with rocky surfaces in the lower infralittoral and circalittoral zones.

### ***Kelp forest on high energy infralittoral rock - IR.HIR.KFaR***

This habitat was present at all three sites and is likely to be widespread around Alderney. At Renonquet the presence of a faunal understorey with a variety of sponges indicates the biotope IR.HIR.KFaR.LhypFa which we did not identify elsewhere on Alderney in 2007.

### ***Kelp park on high energy infralittoral rock and boulders - IR.HIR.KFaR***

This habitat was present at both Ortac and Coque Lihou and was characterised by kelp park with an understorey dominated by oaten pipe hydroids, *Tubularia indivisa*, and sponges. This habitat does not appear in the JNCC biotope listing and is likely to reflect the strong tidal currents at these sites. *Tubularia indivisa* in the JNCC biotopes characterises the CR.HCR.FaT biotope complex 'very tide-swept faunal communities' which normally applies to tide-swept narrows and straits.

### ***Steep or vertical bedrock walls with a fauna turf of sponges and anemones - CR.HCR.XFa.SpAnVt***

This habitat was present on the gulley walls at Renonquet and has the most diverse fauna of any of the Alderney habitats. It differs a little from the biotope classification because of the presence of the orange sea-squirt, *Stolonica socialis*, in significant numbers, but this variation, which may be a southerly one, is also common in Sark and is found in South Devon.

### ***Tide-swept steep or vertical bedrock walls dominated by oaten pipe hydroids, Tubularia indivisa, and sponges - CR.HCR.FaT.CTub***

This habitat was present at both Ortac and Coque Lihou and is characterised by a less varied sessile fauna than above, dominated by oaten pipe hydroids, *Tubularia indivisa*. There were significant numbers of anemones in this habitat – elegant anemones, *Sagartia elegans*, at Coque Lihou and jewel anemones, *Corynactis viridis*, and *Devonshire cup-corals*, *Caryophyllia smithii*, at both sites.

## Summary of Species recorded

A total of 62 animal species were observed at the three sites, of which 6 had not been recorded in 2007. Seaweeds were not recorded, except for the large brown characterising species. A full species list is in the Appendix. The table below compares the 2008 sites to the three tide-swept circalittoral sites recorded in 2007 (Grois Rocks, Braye Rock and Les Etacs). Comparisons between sites are complicated by the fact that Braye Rock and Les Etacs were both visited twice in 2007 and by a number of surveyors, whereas the 2008 sites were only visited once, for relatively short dives, and there was only one surveyor.

|               | Grois Rocks | Braye Rock | Les Etacs | Renonquet | Ortac | Coque Lihou |
|---------------|-------------|------------|-----------|-----------|-------|-------------|
| Sponges       | 9           | 18         | 13        | 17        | 13    | 12          |
| Cnidaria      | 6           | 13         | 11        | 10        | 7     | 8           |
| Crustaceans   | 2           | 5          | 3         | 2         | 0     | 0           |
| Molluscs      | 1           | 5          | 2         | 1         | 4     | 3           |
| Bryozoans     | 4           | 8          | 11        | 2         | 4     | 3           |
| Echinoderms   | 2           | 4          | 4         | 3         | 4     | 1           |
| Tunicates     | 4           | 8          | 10        | 3         | 3     | 2           |
| Fishes        | 4           | 8          | 13        | 4         | 5     | 4           |
| Total animals | 32          | 69         | 67        | 42        | 40    | 33          |

It is likely that Braye Rock and Renonquet would have a similarly high diversity of fauna if it had been possible to survey them at a similar level of effort.

The additional species recorded which were not found in 2007 are:

**Sponges**

|                                   |                        |                     |            |
|-----------------------------------|------------------------|---------------------|------------|
| <i>Axinella infundibuliformis</i> | prawn cracker sponge   | Renonquet and Ortac | rare       |
| <i>Tethyspira spinulosa</i>       |                        | Renonquet           | rare       |
| <i>Hexadella racovitzai</i>       | pink encrusting sponge | Renonquet           | occasional |

**Cnidaria**

|                         |                 |             |          |
|-------------------------|-----------------|-------------|----------|
| <i>Sagartia elegans</i> | elegant anemone | Coque Lihou | frequent |
|-------------------------|-----------------|-------------|----------|

**Echinoderms**

|                        |                      |                     |      |
|------------------------|----------------------|---------------------|------|
| <i>Luidia ciliaris</i> | seven armed starfish | Renonquet and Ortac | rare |
|------------------------|----------------------|---------------------|------|

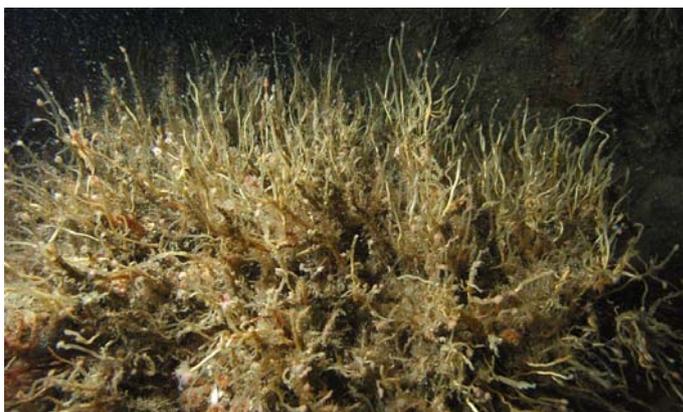
**Fishes**

|                           |      |       |      |
|---------------------------|------|-------|------|
| <i>Galeorhinus galeus</i> | tope | Ortac | rare |
|---------------------------|------|-------|------|

None of these new species are surprising records.



A variety of sponges at Renonquet including: *Axinella dissimilis*, *Polymastia boletiformis*, *Raspailia ramosa* and *Axinella damicornis*, with orange squirt, *Stolonica socialis*



Abundant oaten pipe hydroids, *Tubularia indivisa*, at Coque Lihou



Elegant anemones, *Sagartia elegans*, amongst *Tubularia indivisa* and encrusting bryozoan, Coque Lihou

## Appendix: List of species recorded

Abundances: SA = Superabundant, A = Abundant, C = Common, F = Frequent, O = Occasional, R = Rare, P = Present (abundance not recorded)

| <b>PORIFERA</b>  | <b>SPONGES</b>                                       | <b>Renonquet</b> | <b>Ortac</b> | <b>Coque Lihou</b> |
|--|--|------------------|--------------|--------------------|
| <i>Leucosolenia</i>  |  |                  | O            | FO                 |
| <i>Scypha ciliata</i>  | purse sponge   |                  | CF           | CF                 |
| <i>Pachymatisma johnstonia</i>   | elephant hide sponge                                 | O                | O            | O                  |
| <i>Tethya citrina</i>  | golf ball sponge                                     | O                | R            | O                  |
| <i>Polymastia boletiformis</i>   | hedgehog sponge                                      | FO               |              | O                  |
| <i>Polymastia penicillus</i><br>( <i>P. mamallaris</i> in 2007 report –<br>change of name) | chimney sponge                                       | R                |              | R                  |
| <i>Adreus fascicularis</i>   |  | O                |              | O                  |
| <i>Cliona celata</i>   | boring sponge  | O                | O            |                    |
| <i>Axinella damicornis</i>   |  | O                | O            |                    |
| <i>Axinella dissimilis</i>   | yellow staghorn sponge                               | C                | F            | FO                 |
| <i>Axinella infundibuliformis</i>  | prawn cracker sponge                                 | R                | R            |                    |
| <i>Homaxinella subdola</i>   | wiry staghorn sponge                                 | R                |              |                    |
| <i>Tethyspira spinulosa</i>  |  | R                |              |                    |
| <i>Ulosa digitata</i>  |  |                  | R            |                    |
| <i>Hexadella racovitzae</i>  | pink encrusting sponge                               | O                |              |                    |
| <i>Hemimycale columella</i>  | crater sponge  |                  | O            | FF                 |
| <i>Raspailia hispida</i>   |  | O                |              | O                  |
| <i>Raspailia ramosa</i>  | chocolate finger sponge                              | O                | F            | F                  |
| <i>Haliclona fistulosa</i>   |  | O                | R            |                    |
| <i>Dysidea fragilis</i>  | goosebump sponge                                     | O                | O            |                    |
|  | red encrusting sponge                                | O                |              |                    |
| <b>CNIDARIA</b>  | <b>HYDROIDS, ANEMONES, CORALS, JELLYFISH</b>         |                  |              |                    |
| <i>Tubularia indivisa</i>  | oaten pipe hydroid                                   | F                | AAC          | SA                 |
| <i>Gymnangium montagui</i>   | indian feathers hydroid                              | O                | OO           | O                  |
| <i>Obelia geniculata</i>   | kelp fur   |                  | F            |                    |
| <i>Alcyonium digitatum</i>   | dead men's fingers                                   | R                |              | O                  |
| <i>Alcyonium glomeratum</i>  | red fingers  | F                |              |                    |
| <i>Eunicella verrucosa</i>   | pink sea fan   | O                |              | R                  |
| <i>Parazoanthus axinellae</i>  | yellow cluster anemone                               | F                | O            |                    |
| <i>Isozoanthus sulcatus</i>  | peppercorn anemone                                   | O                |              |                    |
| <i>Actinothoe sphyrodeta</i>   | white lined anemone                                  | R                | O            | O                  |
| <i>Sagartia elegans</i>  | elegant anemone                                      |                  |              | F                  |
| <i>Corynactis viridis</i>  | jewel anemone  | O                | O            | FF                 |
| <i>Caryophyllia smithii</i>  | Devonshire cup-coral                                 | F                | FO           | FF                 |
| <b>CRUSTACEA</b>   | <b>CRABS, LOBSTERS, SHRIMPS &amp; PRAWNS</b>         |                  |              |                    |
| <i>Maja squinado</i>   | spiny spider crab                                    | R                |              |                    |
| <i>Cancer pagurus</i>  | edible crab  | R                |              |                    |
| <b>MOLLUSCA</b>  | <b>SHELLS, SEA SLUGS, BIVALVES &amp; CEPHALOPODS</b> |                  |              |                    |
| <i>Calliostoma zizyphinum</i>  | painted topshell                                     |                  | O            | O                  |
| <i>Trivia arctica</i>  | arctic cowrie  |                  | OR           |                    |
| <i>Ocenebra erinacea</i>   | sting winkle   |                  |              | R                  |
| <i>Tritonia nilsodhneri</i>  | sea fan sea slug                                     | R                |              |                    |
| <i>Polycera faeroensis</i>   | yellow edged polycera                                |                  | R            | R                  |
| <i>Cadlina laevis</i>  |  |                  | R            |                    |

|                                 |  |    |    |    |
|---------------------------------|--|----|----|----|
| <b>BRYOZOA</b>                  | <b>SEA MATS &amp; SEA MOSSES</b>                 |    |    |    |
| <i>Crisia</i>                   | white claw sea moss                              |    | P  |    |
| <i>Membranipora membranacea</i> | sea mat  |    | F  |    |
| <i>Flustra foliacea</i>         | hornwrack  |    |    | R  |
| <i>Bugula flabellata</i>        | spiral bryozoan                                  |    | O  |    |
| <i>Bugula plumosa</i>           | spiral bryozoan                                  | F  | F  | F  |
|                                 | encrusting bryozoans                             | O  |    | F  |
| <b>ECHINODERMATA</b>            | <b>STARFISH, SEA URCHINS &amp; SEA CUCUMBERS</b> |    |    |    |
| <i>Asterina gibbosa</i>         | cushion star                                     |    | R  | O  |
| <i>Henricia oculata</i>         | bloody henry                                     | R  | R  |    |
| <i>Marthasterias glacialis</i>  | spiny starfish                                   | O  | O  |    |
| <i>Luidia ciliaris</i>          | seven armed starfish                             | R  | R  |    |
| <b>TUNICATA</b>                 | <b>SEA SQUIRTS</b>                               |    |    |    |
| <i>Clavelina lepadiformis</i>   | light bulb sea squirt                            |    | R  |    |
| <i>Morchellium argus</i>        | four spotted sea squirt                          | O  | OO |    |
| <i>Lissoclinum perforatum</i>   | white perforated sea squirt                      |    | R  |    |
| <i>Ascidia mentula</i>          | red sea squirt                                   | O  |    | O  |
| <i>Stolonica socialis</i>       | orange sea squirt                                | C  |    | C  |
| <b>PISCES</b>                   | <b>FISHES</b>                                    |    |    |    |
| <i>Galeorhinus galeus</i>       | tope   |    | R  |    |
| <i>Pollachius pollachius</i>    | pollack  | C  | O  |    |
| <i>Centrolabrus exoletus</i>    | rock cook  |    |    | O  |
| <i>Crenilabrus melops</i>       | corkwing wrasse                                  | R  |    |    |
| <i>Ctenolabrus rupestris</i>    | goldsinny  |    | O  | O  |
| <i>Labrus bergylta</i>          | ballan wrasse                                    | O  | O  | O  |
| <i>Labrus mixtus</i>            | cuckoo wrasse                                    | R  | R  | O  |
| <b>ALGAE</b>                    | <b>SEAWEEDS</b>                                  |    |    |    |
| <i>Rhodophycota</i>             | red seaweeds indet.                              | F  | F  | C  |
| <i>Corallinales</i>             | pink encrusting algae                            |    | F  | O  |
| <i>Dictyopterus membranacea</i> | midrib fan weed                                  | O  |    |    |
| <i>Laminaria hyperborea</i>     | cuvie  | A  | CC | C  |
| <i>Laminaria ochroleuca</i>     | golden kelp                                      |    | F  |    |
| <b>TOTAL SPECIES RECORDED</b>   |  | 45 | 44 | 36 |

## Seagrass Survey of Longis Bay

In 2007 our survey identified an extensive seagrass bed in the entrance to Longis Bay. The discussion section includes the following paragraph:

Seagrasses are the only marine flowering plant and are found underwater only in shallow sheltered areas of sand. The sublittoral species is the eelgrass, *Zostera marina*. They are a threatened habitat due to coastal development and moorings and are a Biodiversity Action Plan habitat in the UK. We found three sites with eelgrass present. A little sparse eelgrass was found in the harbour close to the slipway on the breakwater and the permanent moorings. There was a small bed on the west side of Saye Bay, but the most extensive bed was in Longis Bay in the sandy centre of the bay between Raz Island and the Frying Pan Battery. This was a good bed of dense eelgrass and is shown in Figure 25. All three of the locations where eelgrass was found are mooring areas, permanent in the case of the harbour and temporary in the case of Saye and Longis Bays. Temporary anchoring, such as takes place in these two areas is much more likely to cause damage to the eelgrass because of the continual dropping and raising of the anchors and the danger of anchors dragging through the eelgrass. The provision of a permanent mooring buoy in both locations could be considered as preventing anchoring is unlikely to be acceptable.

In 2008 when a follow up survey was underway it became clear that there was a proposal to lay a cable from a trial current turbine situated in The Race into Longis Bay and we therefore decided to attempt to map the extent of the seagrass bed in more detail. This report covers the results of the survey.

### Methodology

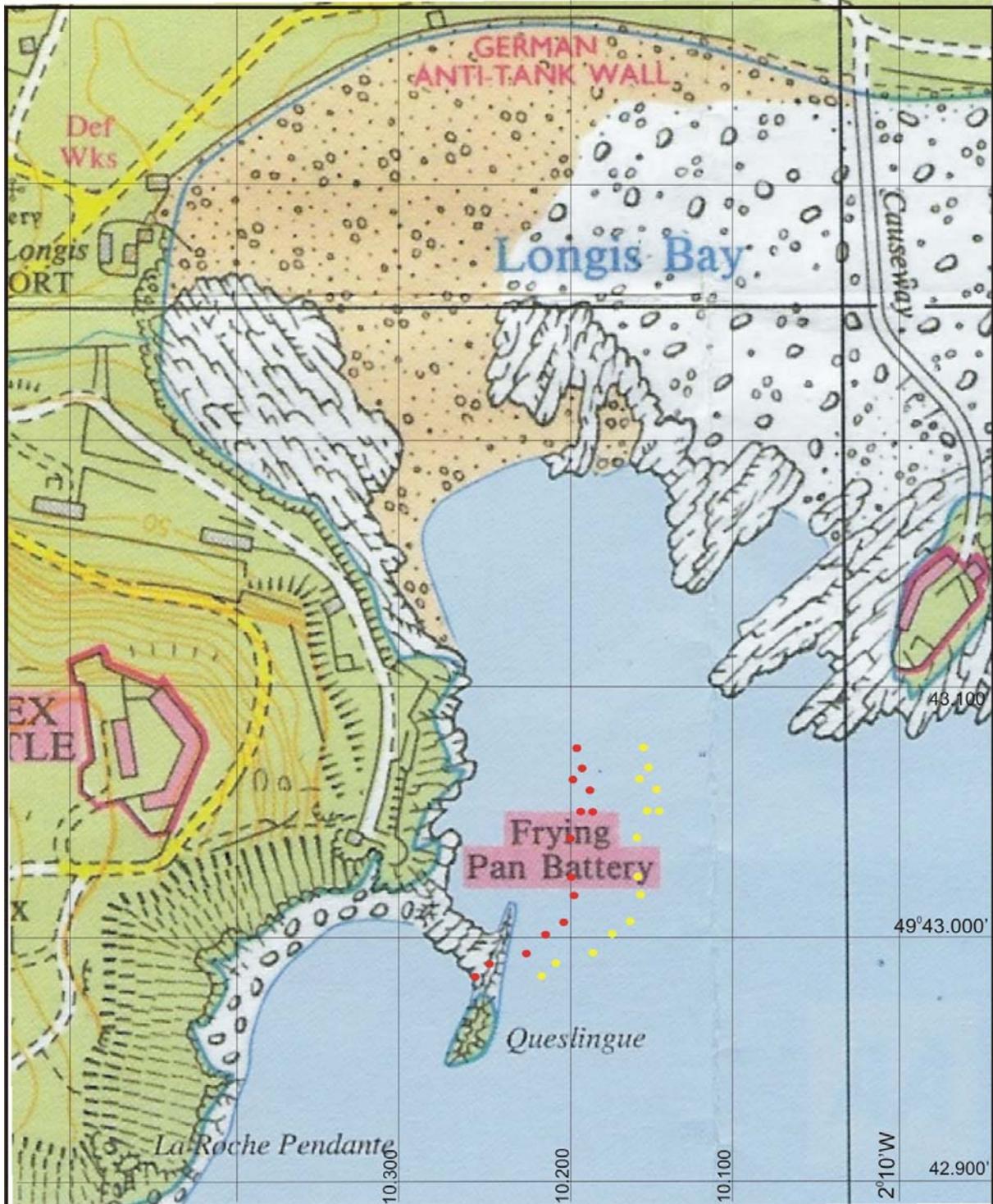
A single diver with a surface marker buoy swam underwater following the outer edge of the eelgrass bed. He was followed on the surface by a kayaker who took GPS readings at intervals throughout the dive. The readings taken have been plotted onto the Ordnance Survey map of Longis Bay.

Conditions at the time of the survey were not ideal as there was a unexpectedly strong current flowing across the mouth of the bay. This made the survey much more strenuous and it was not possible to swim around the whole of the seagrass bed as originally anticipated. In the event only a single swim across the bay was possible, starting from the Raz Island side of the bay and ending close to Queslinque on the western side.

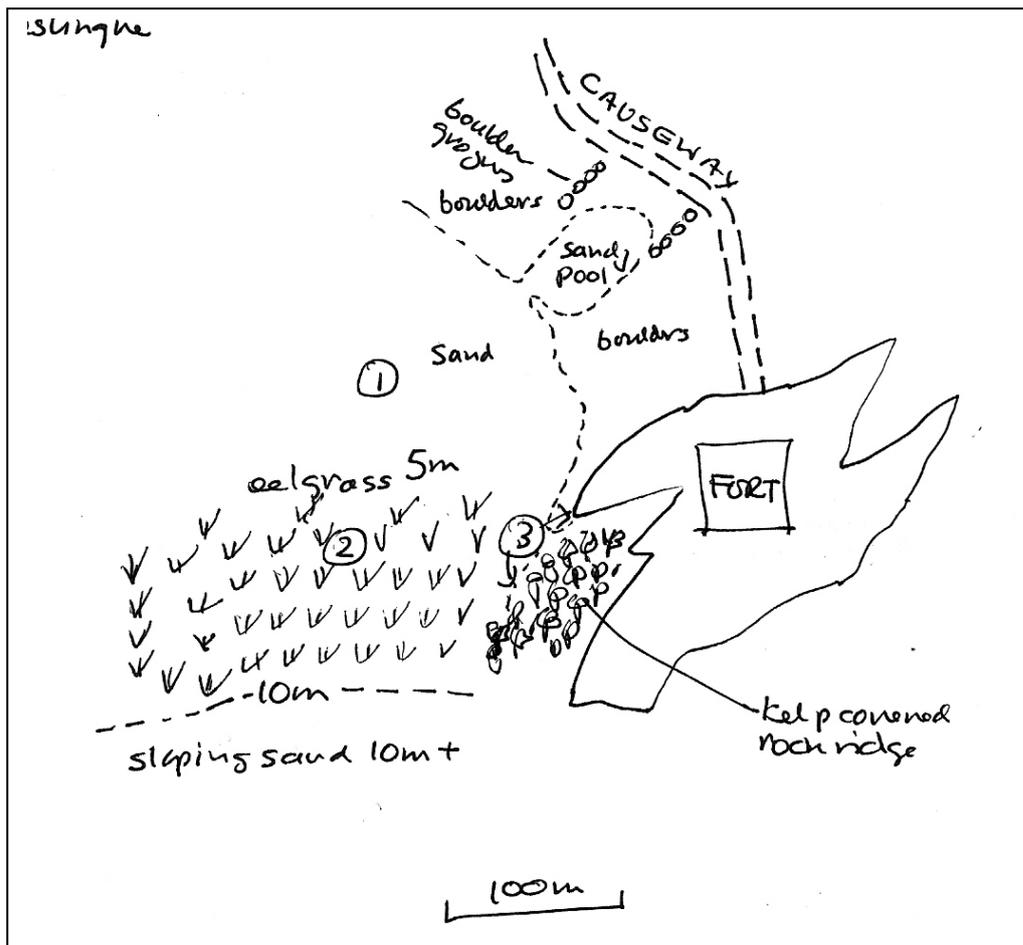
### Results

The positions for the outside edge of the seagrass bed have been plotted on the map on the following page. The original positions are shown in red and have not correlated well with the physical features. It appears that they are too far to the west, an anomaly related either to the GPS datum or the longitude shown on the OS map. However, if the final position close to Queslinque is plotted as it was at the time, the line shown in yellow results and appears to be a logical interpolation. This shows that there is continuous eelgrass across the whole of the western side of the bay but there is a gap closer to Raz Island. This conclusion is based on a single dive and should be investigated further before any decisions are based on it.

The results do not correlate fully with the sketch done in 2007, also starting from the Raz side of the bay, which shows eelgrass close to the rocky fringes of Raz Island (sketch below). This sketch is not based on any positions apart from the start and end of the dive, but was undertaken when there was no tide and was a longer dive. The two sources together suggest that there is eelgrass across the whole of the entrance to the bay.



Line of outer edge of seagrass bed as originally plotted (red dots) and as interpolated from final position (yellow dots).



2007 sketch of eelgrass in Longis Bay

### The conservation value of eelgrass

In the UK seagrass beds are one of the marine habitats included in the government's Biodiversity Action Planning (BAP) system. Clearly this does not apply to the Channel Islands which does not have a similar process, but it is highly relevant as the factors which have affected the decline of seagrass beds in the UK, and which have led to their inclusion in the BAP habitats, are equally important.

Of the three species of seagrasses occurring in the UK, eelgrass, *Zostera marina*, is the only one found in the shallow sublittoral. All three species are nationally scarce and thought to be in decline as a result of disease, natural cycles, physical disturbance, competition from invasive species such as *Sargassum muticum*, nutrient enrichment and marine pollution.

The Species Action Plan for seagrass beds ([www.ukbap.org.uk](http://www.ukbap.org.uk)) has two main objectives:

1. Maintain the extent and distribution of seagrass beds in UK waters.
2. Assess the feasibility of restoration of damaged or degraded seagrass beds.

Seasearch has undertaken surveys of the extent of eelgrass beds in a number of locations in England, Wales and Northern Ireland. The condition, density and extent of the bed in Longis Bay is comparable with the better examples we have surveyed in the Isles of Scilly and elsewhere.



The eelgrass bed in Longis Bay, June 2007

### **Conclusions**

At present the Longis eelgrass bed is potentially threatened by seasonal overnight anchoring and the presence of the non-native japweed, *Sargassum muticum*, which also occurs in the bay.

Of the marine species and habitat action plans set out in the UK BAP only eelgrass (habitat) and pink sea fans (species) have been identified by the limited marine surveys in Alderney. The sea fan population appears to be limited in numbers and in relatively poor condition (Wood, 2007) and thus the Longis eelgrass bed, as the best example in Alderney, is a particularly important biological resource. We have not surveyed eelgrass elsewhere in the Channel Islands but a search in a known area in Sark for eelgrass in 2008 yielded only very low numbers of individual plants and nothing resembling a seagrass bed.

Because of its importance we would recommend that disturbance should be avoided if at all possible. If it is considered that other factors outweigh the biological importance of this area then the route for a cable should be thoroughly investigated and the section close to the eelgrass in Longis Bay should be routed and placed by divers rather than mechanical means with the intention of minimising impact on the eelgrass bed. We would also suggest that the developer be required to monitor the condition and extent of the eelgrass bed both before and after construction, such monitoring to include density and condition as well as physical extent.