

NORTH ANGLESEY SEASEARCH SURVEY



MENAI SUB-AQUA CLUB

ANMO(1)

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North Anglesey Seasearch Survey

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Drawings and cover photograph by Rohan Holt ©

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We would like to thank the Countryside Council for Wales for providing financial support for this project. We would also like to thank all the divers who took part, together with Dave Jones, skipper of the MV Cirrus.

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Introduction

Seasearch is a project for volunteer divers to record information about the sea bed and the animals and plants living on it. The project is managed in partnership by the Marine Conservation Society and the Marine Nature Conservation Review and is supported by the European-funded Biomar project. The Countryside Council for Wales provides support for the project in Wales.

The Seasearch survey of North Anglesey is an ongoing project carried out by members of the Menai Sub-Aqua Club. The North Anglesey coastline was chosen for this survey as, to our knowledge, no other systematic sublittoral biological surveys have been carried out in this area. To date, 10 sites have been surveyed during August and September 1996. Two shore dives were carried out on 25th August, whilst the remainder of the diving was done from the MV Cirrus, skippered by Dave Jones, on the 31st August and 1st September. This report describes the findings of these Seasearch dives.

The area of coastline surveyed is approximately 20 km long, and is subject to fairly strong tides (maximum of 3.3 Kt.) and has a tidal range of between 1.9 m (neaps) and 5.8 m (springs).

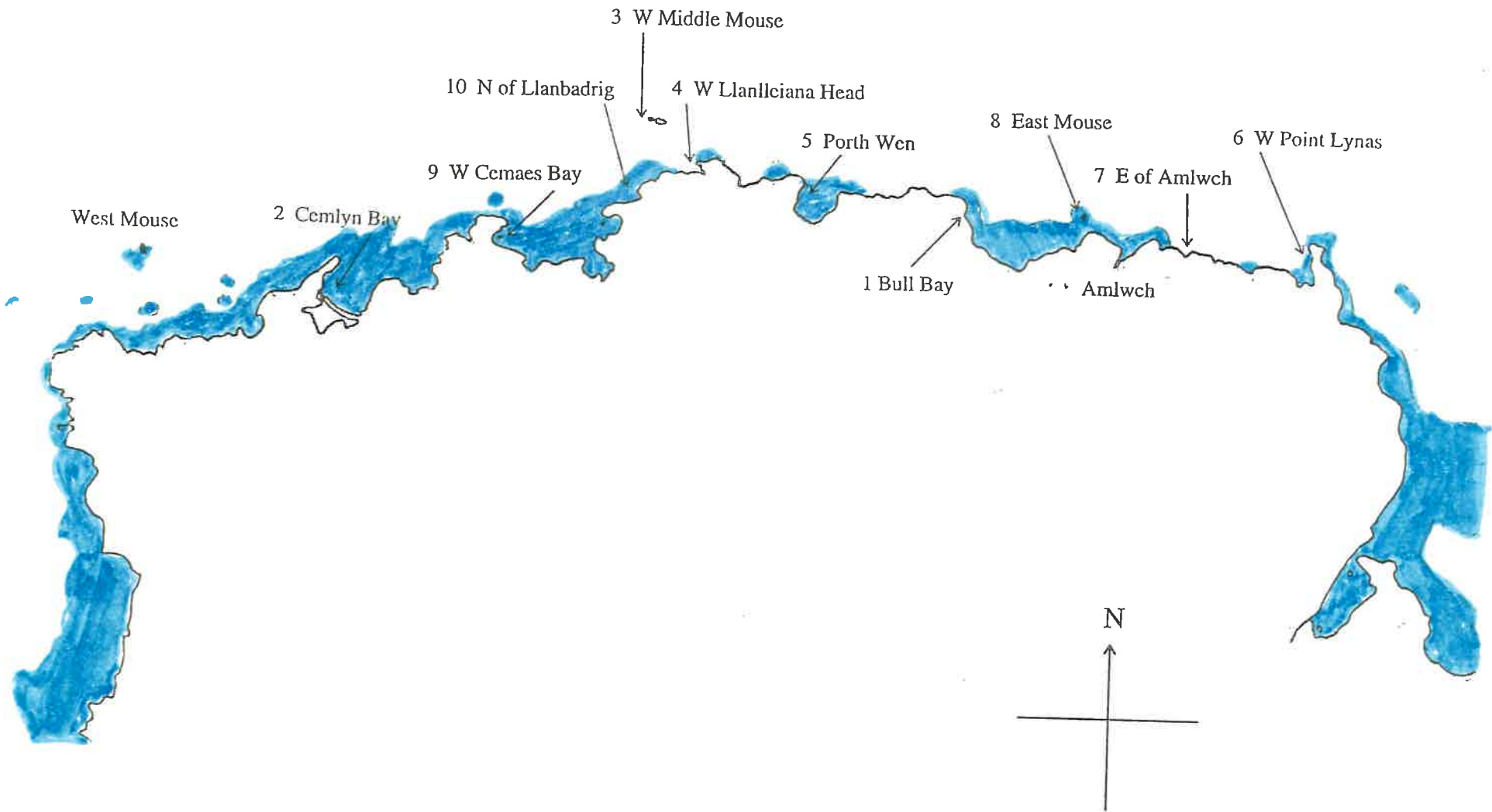
Above the water, the coastline has two areas of conservation importance; an RSPB reserve at Cemlyn Bay and the area around Carmel Head which is owned by the National Trust.

There is a harbour at Amlwch and a bromide factory to the west of this harbour. Further west along the coast is Wylfa nuclear power station.

The area is fairly heavily used for recreational purposes, with angling, yachting and power boating being most popular. Most of the recreational SCUBA diving is carried out on the wrecks offshore. Amlwch is a small fishing port, with the majority of boats involved in potting, otter trawling or sea angling charters.



The North coast of Anglesey, with sites dived and site numbers.
The blue area marks the 10 m contour.



Marine wildlife of the area

The majority of the sites surveyed were rocky seabed; either boulders or bedrock, although a few sandy and muddy sites were also surveyed. All except the most exposed rocky surfaces were covered in a thick layer of silt. Underwater visibility was correspondingly poor; never exceeding 3 m for the duration of the survey.

Shallow rock was generally dominated by kelp down to a maximum depth of 3 m (depth below chart datum). This then gave way to red algal turfs which were present to a maximum depth of 9.5 m. Below this rock was generally found to be dominated by featherstars *Antedon bifida*, bryozoa (several species including *Crisia* spp and *Flustra*) and sponge (including *Polymastia* spp and *Suberites* spp). Areas with cobbles had similar flora and fauna to that described on rock.

Sediment communities encountered generally consisted of fine sand or mud with brittlestars (*Ophiura ophiura*), polychaete worms (*Lagis koreni*) and crab burrows (*Goneplax rhomboides*).

One other substratum type was surveyed; this was pea-sized gravel which was assumed to be highly mobile. This was very species poor with sparse mussels (*Mytilus edulis*) starfish (*Asterias rubens*) and hermit crabs (*Pagurus bernhardus*).

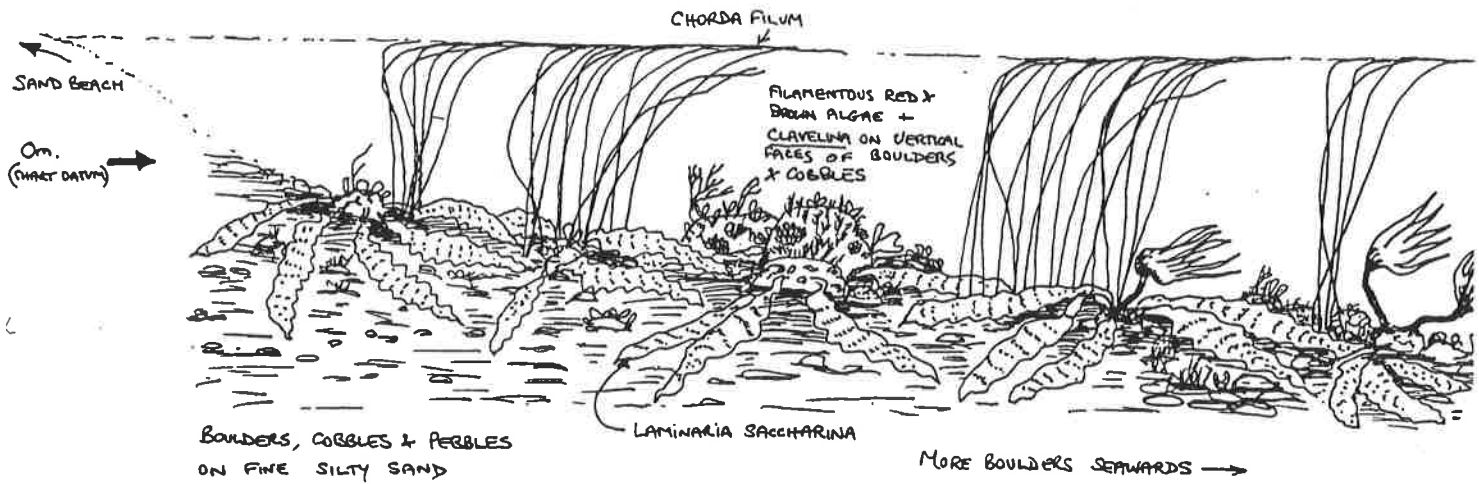
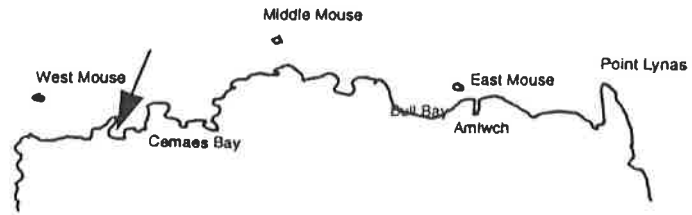
The following pages describe each site surveyed, using a pictorial representation of the dive site and a description of the communities and depths at which they were recorded.

Although Seasearch does not require divers to be able to record all species present, some of the divers involved in this survey had considerable knowledge of species in UK waters and this report makes use of all the information collected. More detailed biological descriptions of the flora and fauna found are in Appendix 2 and Appendix 3.



Site number
Site name
Divers

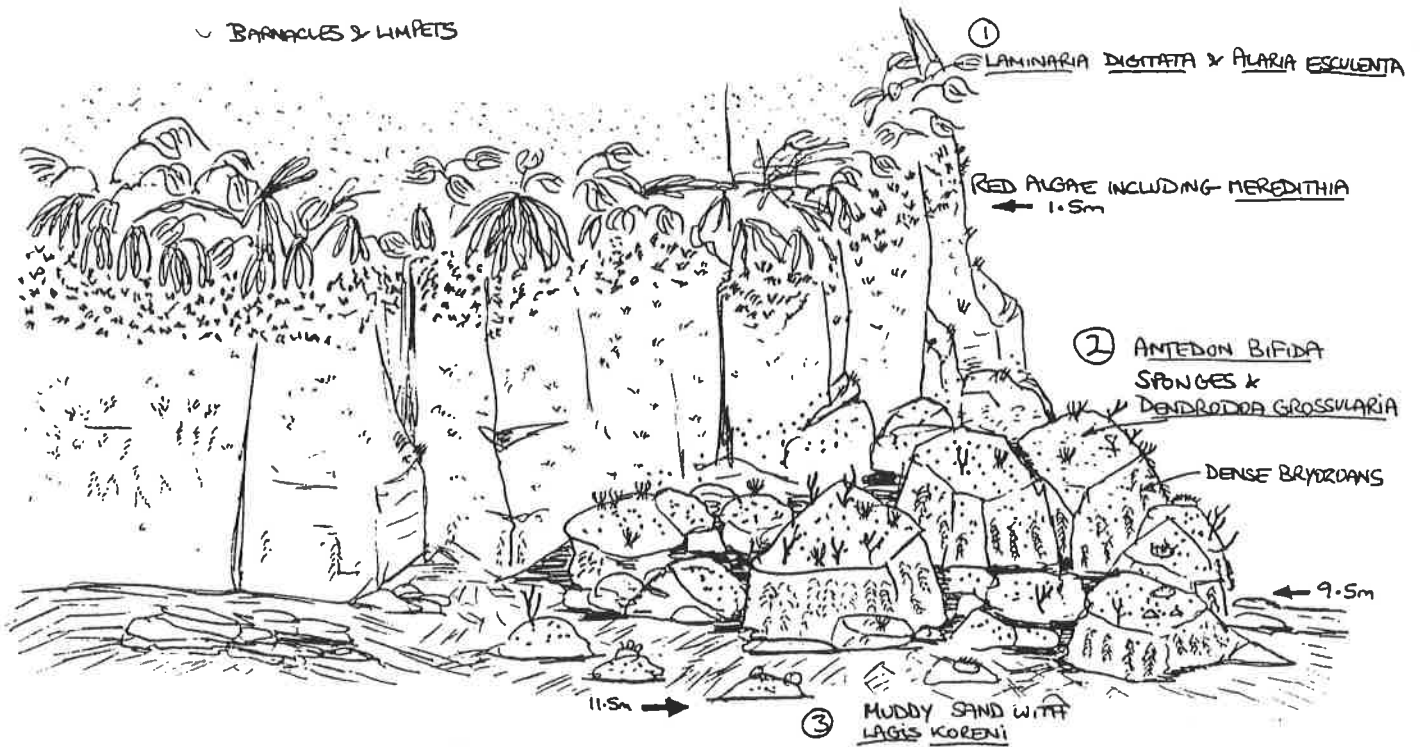
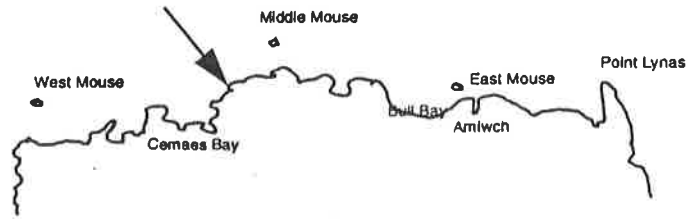
2 / 1
Cemlyn Bay
Neil Cowie, Kirsten Ramsay, Mary Harvey



Habitat 1:
Depth Range: 0-0.5 m
Description: Pebbles and cobbles, gaps filled with fine sand / silt. Kelp *Laminaria saccharina* and *L. digitata*, *Chorda filum* and algal turf.

Comments:

Site number 10 / 1
 Site name North of Llanbadrig
 Divers Bill Sanderson, Paul Brazier



Habitat 1:
Depth Range: 1.5 m
Description: Bedrock with kelp *Alaria esculenta* and *Laminaria digitata*

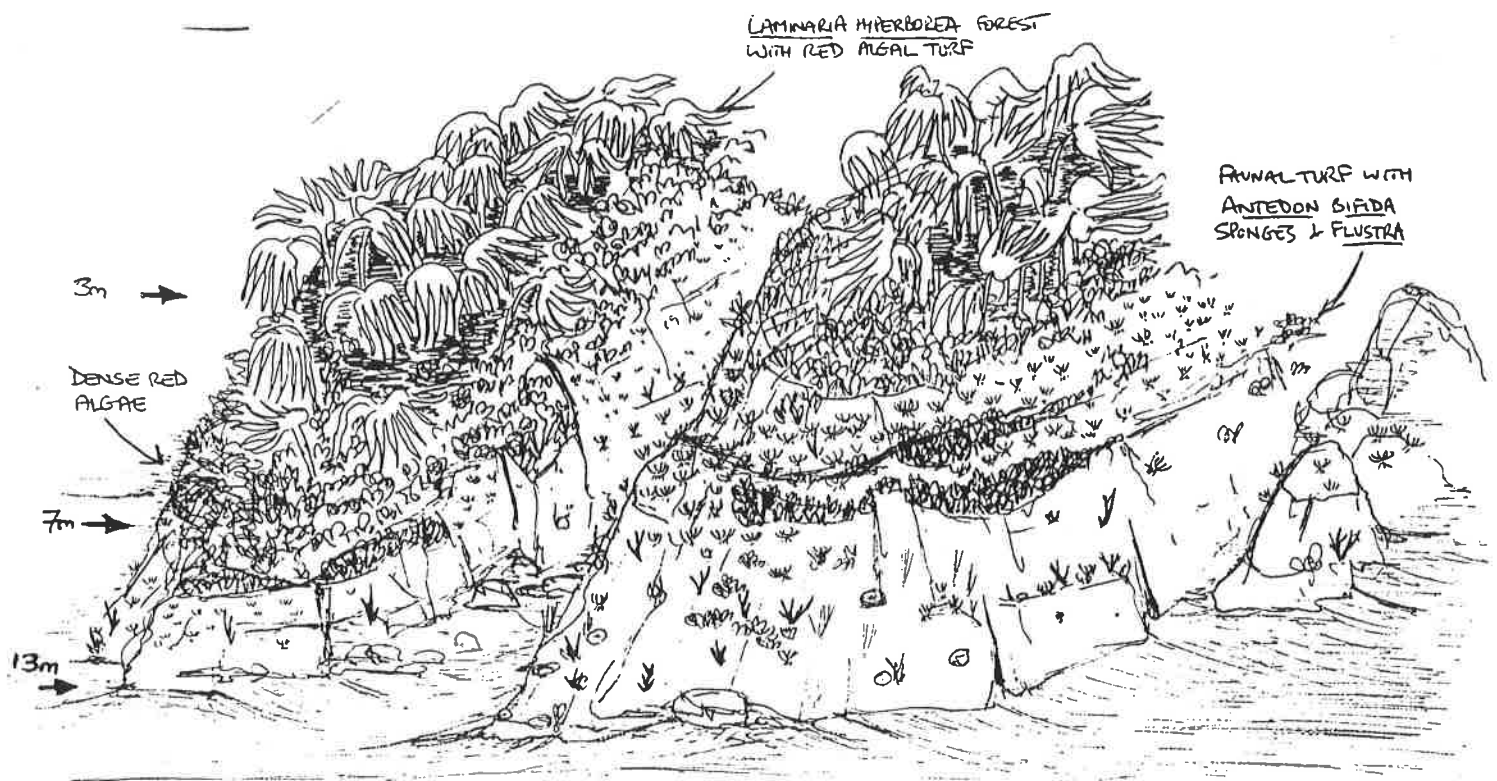
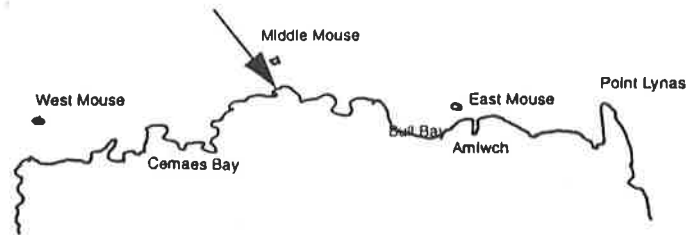
Habitat 2:
Depth Range: 1.5-11.5 m
Description: Bedrock and boulders with featherstars *Antedon bifida*, sponges *Polymastia boletiformis*, bryozoans *Flustra* and squirts *Dendrodoa*.

Habitat 3:
Depth Range: 9.5 m
Description: Mud between boulders with polychaete worms *Lagis koreni*.

Comments: Cushion stars *Asterina phylactica* and *Asterina gibbosa* present in habitat 1.

Site number
Site name
Divers

4 / 1
West of Llanlleiana Head
Paul Brazier, Bill Sanderson, Jeff Tang



Habitat 1:

Depth Range: 2 - 3 m

Description: Bedrock ridges with boulders and cobbles, gaps filled with silt. Kelp forest (*Laminaria hyperborea*) with red algal turf

Habitat 2:

Depth Range: 2 - 7 m

Description: Bedrock ridges with boulders and cobbles, gaps filled with silt. Red algal turf

Habitat 3:

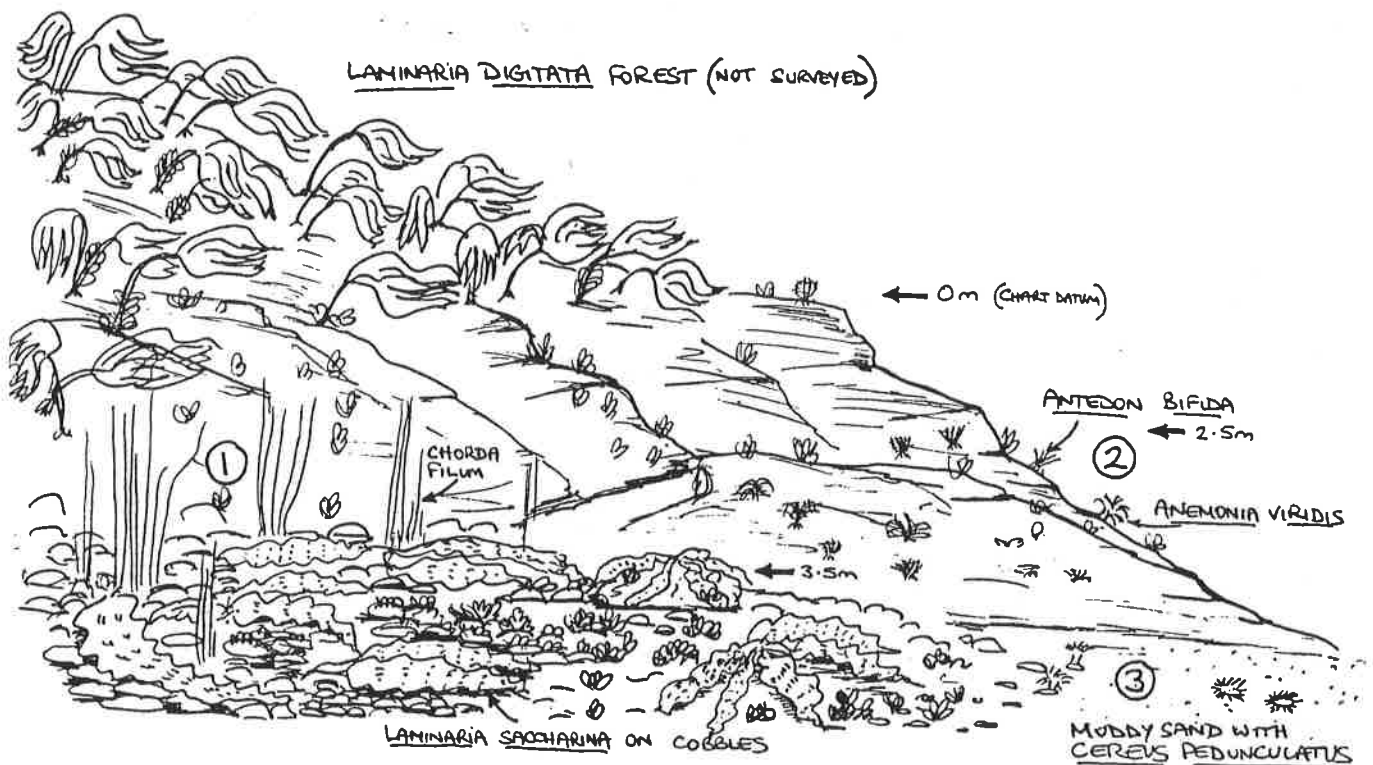
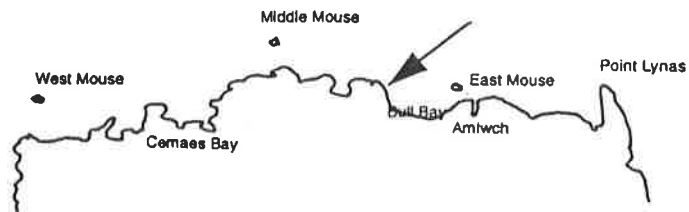
Depth Range: 7 - 13 m

Description: Bedrock ridges with boulders and cobbles, gaps filled with silt. Faunal turf with featherstars *Antedon bifida*, sponge *Polymastia boletiformis*, *P. mammaliris* and bryozoans *Flustra foliacea*.

Comments:

Cushion stars *Asterina phylactica* and *A. gibbosa* present in habitat 2.

Site number 1/1
 Site name Bull Bay
 Divers Kirsten Ramsay, Neil Cowie, Mary Harvey



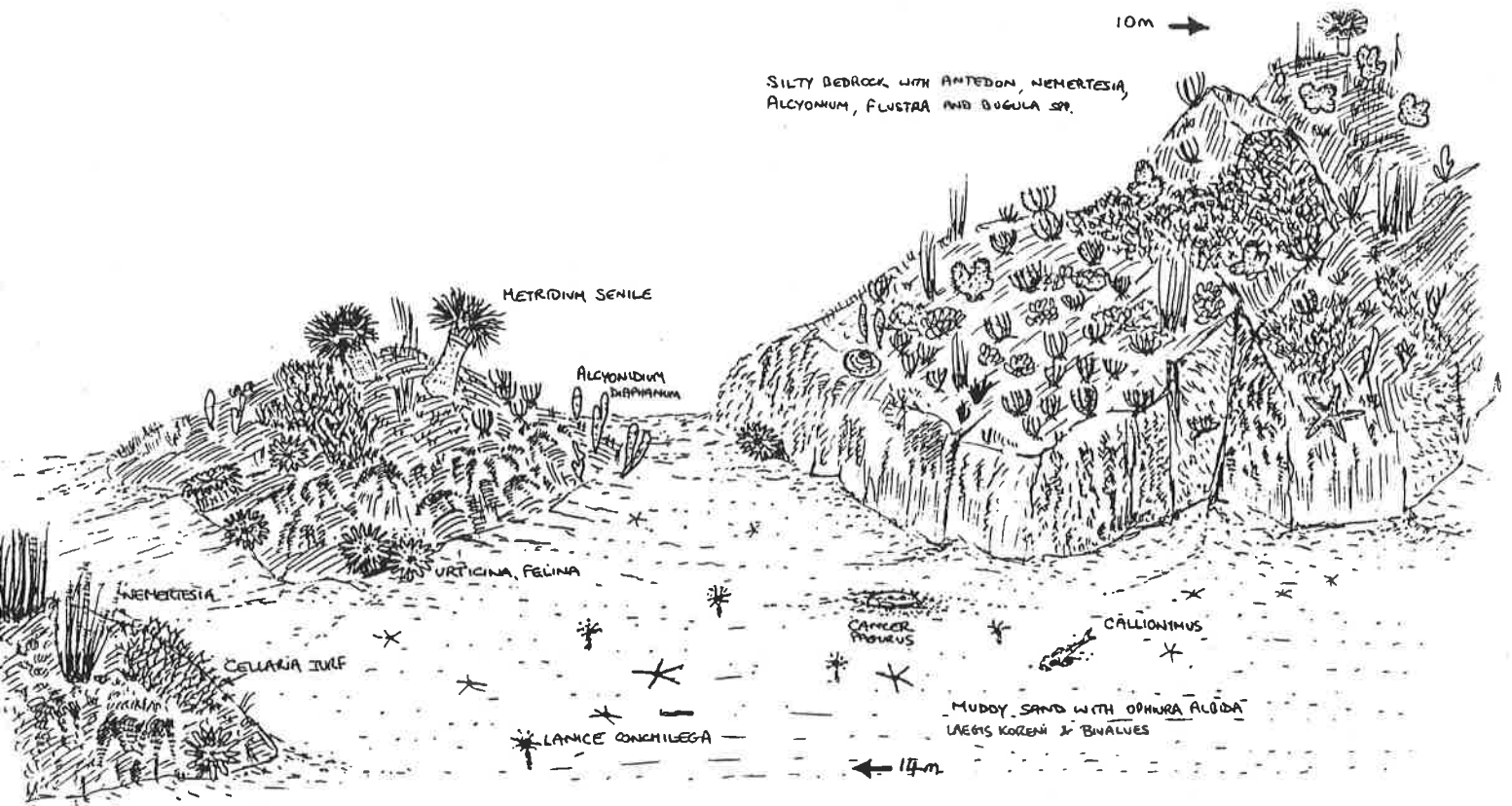
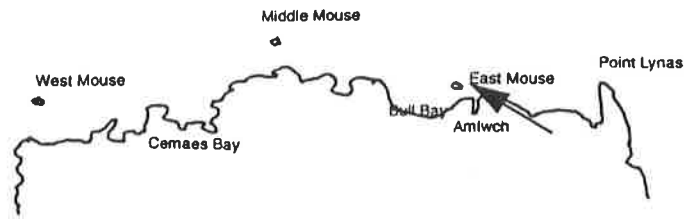
Habitat 1:
Depth Range: 0-3.5 m
Description: Cobbles with kelp *Laminaria saccharina*, *Laminaria hyperborea*, bootlace weed *Corda filum*, snakelocks anemones *Anemonia viridis* and algal turf.

Habitat 2:
Depth Range: 2.5-3.5 m
Description: Bedrock or boulders with red algae, snakelocks anemone *Anemonia viridis*, featherstars *Antedon bifida*.

Habitat 3:
Depth Range: 3.5 m
Description: Mud with patches of diatoms, anoxic c. 2 cm below surface with a few daisy anemones *Cereus pedunculatus*.

Comments:

Site number 8/2
 Site name East Mouse (NE side)
 Divers Bill Sanderson, Paul Brazier



Habitat 1:
Depth Range: 5-14 m
Description: Bedrock with featherstars *Antedon bifida*, bryozoans *Cellaria* and dahlia anemones *Urticina felina*

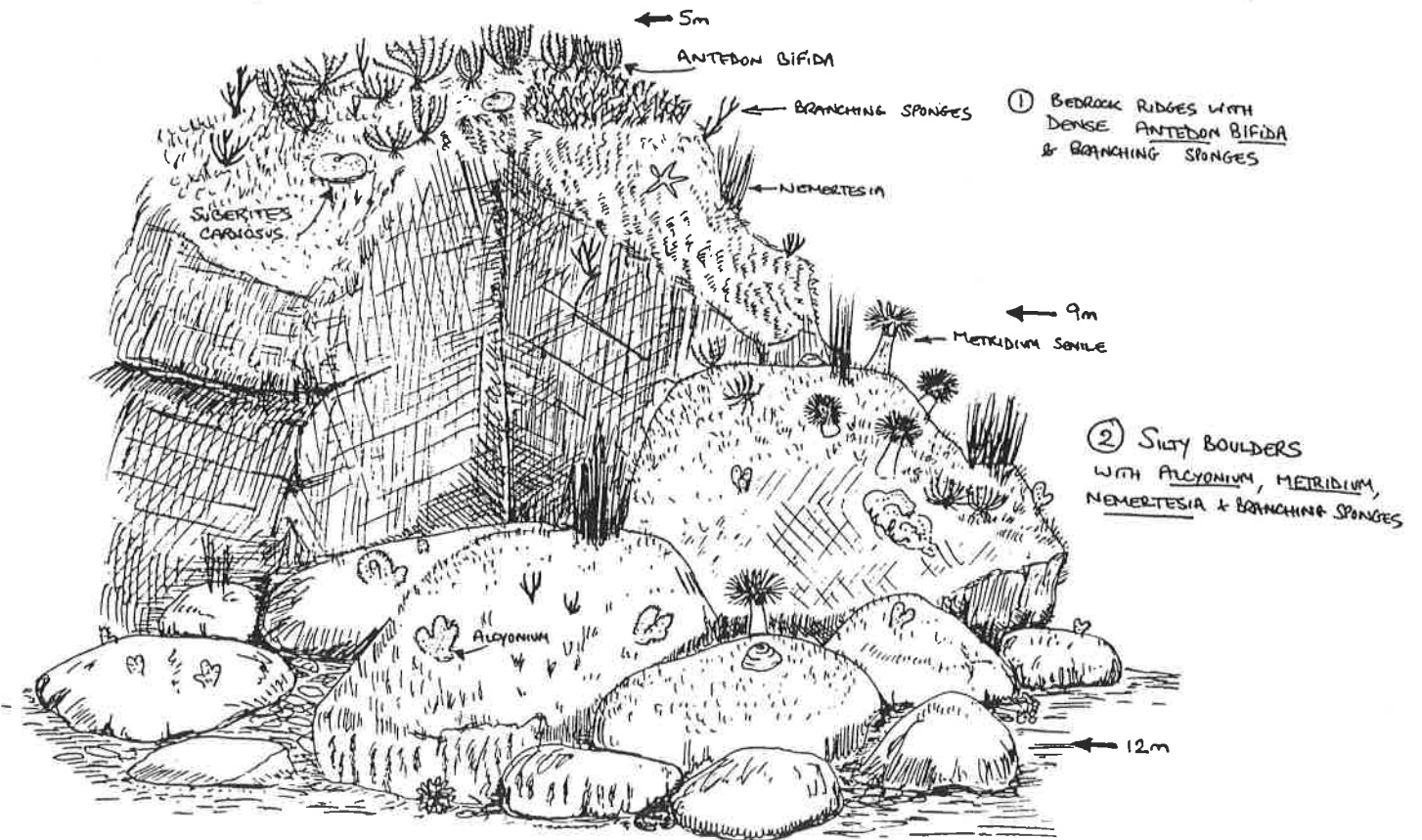
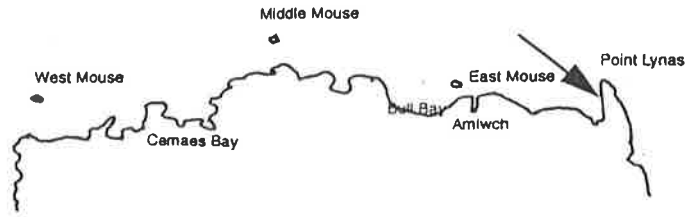
Habitat 2:
Depth Range: 12-15 m
Description: Rocky outcrops with dead mans fingers *Alcyonium*, bryozoans *Bugula* and dahlia anemones *Urticina felina*.

Habitat 3:
Depth Range: 13 m
Description: Patches of sand with polychaete worms *Lagis koreni*, brittlestars *Ophiura ophiura* and dragonets *Callionymus sp.*

Comments:

Site number
Site name
Divers

6/1
West of Point Lynas
Lucy Kay, Paul Kay, Bill Sanderson, Paul Brazier, Jeff Tang



Habitat 1:

Depth Range: 5.5-9.5 m

Description: Bedrock ridges with featherstars *Antedon bifida* and bryozoan and sparse red algal turf.

Habitat 2:

Depth Range: 9.5-11.5 m

Description: Boulder slope with featherstars *Antedon bifida* and bryozoan and hydroid turf.

Comments:

Diving logistics**Slack water**

(All tide times relate to Liverpool)

Local knowledge suggested the following slack water times for inshore North Anglesey.
45 mins before low or high water, 15 - 20 mins earlier on spring tides.

During our survey slack water occurred 1 h 20 mins before HW on middle mouse (duration about 5 mins) and 2 h before HW on East mouse (duration 25 mins). Note that these dives took place during large spring tides.

The following sites were sheltered from, or received little tide:

Bull Bay, Cemlyn Bay (within bay sheltered at all states of tide)
W Llanlleiana Head, W Point Lynas (sheltered on ebb)
N of Llanbadrig (fairly sheltered on ebb)
Porth Wen (shelter increases as you go into the bay)
E of Amlwch (little tide at most times)
W Cemaes Bay (fairly sheltered especially on flood)

Boat launching

There are slipways at Bull Bay, Cemaes Bay and Amlwch Harbour. Of these, the one at Bull Bay is probably most suitable for launching small boats.

Diving facilities

The only hardboat known in the area is the MV Cirrus; contact Dave Jones 01407 830278. Air can be obtained from Treaddur Bay (Anglesey Diver Training College 01407 764547 or Diving Services Anglesey 01407 860318).

Marine wildlife features - habitat types**K1. Kelp (*Laminaria hyperborea*) on infralittoral bedrock, boulders and cobbles**

Wave exposure: moderately exposed

Tidal stream: moderately strong

Infralittoral rock dominated by kelp down to a maximum depth of 3 m (depth below chart datum).

K2. Kelp (*Laminaria hyperborea* & *Laminaria saccharina*) on infralittoral bedrock, boulders and cobbles

Wave exposure: very sheltered

Tidal stream: very weak - weak

Infralittoral rock dominated by kelp (including cape form of *L. saccharina*) down to a maximum depth of 5 m.

R1. Red algal turf on lower infralittoral bedrock, boulders and cobbles

Wave exposure: moderately exposed

Tidal stream: moderately strong

Red algal turfs were present to a maximum depth of 9.5 m.

R2. Red algal turf with *Anemonia viridis* on lower infralittoral bedrock, boulders and cobbles

Wave exposure: very sheltered

Tidal stream: weak

Red algal turfs with *Anemonia viridis*, were present at one site at depths of 2.5-3.5 m.

F1. *Antedon bifida*, bryozoan and sponge turf on circalittoral bedrock, boulders and cobbles

Wave exposure: sheltered - moderately exposed

Tidal stream: weak - moderately strong

Circalittoral rock was generally found to be dominated by *Antedon bifida*, bryozoa, (several species including *Crisia* and *Flustra*) and sponge (including *Polymastia* and *Suberites* spp). Areas with cobbles had similar flora and fauna to that described on rock.

F2. Bryozoan turf on circalittoral bedrock and boulders

Wave exposure: moderately exposed

Tidal stream: moderately strong

Bryozoan dominant turf with *Bicellaria*, *Cellaria*, *Bugula*

F3. *Alcyonium digitatum*, *Bugula* and *Urticina felina* on circalittoral rocky outcrops

Wave exposure: moderately exposed

Tidal stream: moderately strong

S1. *Ophiura ophiura*, *Lagis* and *Goneplax* burrows on circalittoral mud and sand

Wave exposure: very sheltered - sheltered

Tidal stream: weak - moderately strong

Sediment communities encountered generally consisted of fine sand or mud with *Ophiura ophiura*, *Lagis koreni* and *Goneplax* burrows.

Appendix 3

Species list

See end of section for key to site numbers and divers.

| Site number | Divers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8/1 | 8/2 | 9 | 10 |
|-----------------------------------|-----------------------------------|-------------|-------------|----------------|-------------|-------|----------------------|-------|-------|-------|-------|-------|
| | | NC MH KR | NC MH KR | RH KR LK PK | PB BS JT | RH KR | PB BS JT LK PK | RH KR | LK PK | PB BS | RH KR | PB BS |
| Porifera | Sponges | | | | | | | | | | | |
| <i>Clathrina lacunosa</i> | | | | | | | | | | | | X |
| <i>Pachymatisma johnstonia</i> | elephants ear sponge | | | | | | X | | | | | X |
| <i>Axinella dissimilis</i> | | | | | X | | | | | | | |
| <i>Tethya aurantium</i> | | X | | | X | | X | | | | | X |
| <i>Suberites sp</i> | | X | | | | | | | | | | |
| <i>Suberites carnosus</i> | | | | | X | | X | X | | | X | X |
| <i>Suberites domuncula</i> | | | | | | | | X | | | | |
| <i>Polymastia boletiformis</i> | | | | | X | | X | | | | | X |
| <i>Polymastia mammalaris</i> | | | | | X | | | | | | | |
| <i>Cliona celata</i> | sulphur sponge | | | | | | X | | | | | |
| <i>Axinella infundibuliformis</i> | cup sponge | X | | | X | | | | | | | |
| <i>Stelligera sp.</i> | | | | | | | | | X | | | |
| <i>Stelligera rigida</i> | | | | | | | X | X | | X | | X |
| <i>Stelligera stuposa</i> | | | | | X | | X | | | | X | X |
| <i>Raspailia hispida</i> | | | | | X | | X | | | X | | X |
| <i>Raspailia ramosa</i> | | | | | X | | X | | | X | | X |
| <i>Esperiopsis fucorum</i> | | | | | X | | X | | | X | | |
| <i>Hemimycale columella</i> | moon-crater sponge | | | | | | | | | | | X |
| <i>Haliclona oculata</i> | | | | | | | | X | | | X | X |
| <i>Dysidea fragilis</i> | | | | | X | X | X | | | | | X |
| <i>Aplysilla sulfurea</i> | | | | | | X | | | | | | |
| Cnidaria | Anemones, hydroids etc | | | | | | | | | | | |
| <i>Bougainvillia sp.</i> | | | | | | | X | | | | | |
| <i>Halecium sp.</i> | | | | | | | X | | | | | |
| <i>Nemertesia antennina</i> | | | | | X | | X | X | X | X | | X |
| <i>Abietinaria abietina</i> | | | | | | | | | X | X | | |
| <i>Hydrallmania falcata</i> | | | | X | | | X | | X | X | | |
| <i>Sertularia argentea</i> | | | | | | | | | X | | | |

| Site number | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8/1 | 8/2 | 9 | 10 |
|---------------------------------|-------------------|-------------|-------------|----------------|-------------|-------|----------------------|-------|-------|-------|-------|-------|
| Divers | | NC MH KR | NC MH KR | RH KR LK PK | PB BS JT | RH KR | PB BS JT LK PK | RH KR | LK PK | PB BS | RH KR | PB BS |
| <i>Goneplax rhomboides</i> | mud runner crab | | | | | X | | | | | X | |
| Mollusca | Molluscs | | | | | | | | | | | |
| <i>Gibbula cineraria</i> | grey topshell | | | | | | | | | X | | |
| <i>Elysia viridis</i> | green sea hare | X | | | | | | | | | | |
| <i>Tritonia</i> sp. | sea slug | | | | X | | | | | | | |
| <i>Tritonia lineata</i> | sea slug | | | | | | X | X | | | | |
| <i>Mytilus edulis</i> | muschel | | | X | | | | | | | | |
| <i>Chlamys varia</i> | white scallop | | | | | | | | | X | | |
| <i>Pododesmus patelliformis</i> | saddle oyster | | | | | X | | | | | | X |
| <i>Calliostoma zizyphinum</i> | painted topshell | | | | | | | | | X | | |
| <i>Spisula</i> sp. | | | | | | | | | | X | | |
| <i>Abra</i> sp. | | | | | | | | | | X | | |
| <i>Sepioloa atlantica</i> | little cuttlefish | | | X | | | | | | | | |
| Bryozoa | Bryozoans | | | | | X | X | | X | | | |
| <i>Crisia</i> sp. | | | | | X | | X | X | X | | | X |
| <i>Alcyonidium diaphanum</i> | | | | | | | | X | | X | | |
| <i>Alcyonidium hirsutum</i> | | | | | | | | | X | | | |
| <i>Vesicularia spinosa</i> | | | | | | | X | | | X | | X |
| <i>Bowerbankia</i> sp. | | | | | X | | X | | | X | | X |
| <i>Bowerbankia citrina</i> | | | | | X | | | X | | | | |
| <i>Membranipora membranacea</i> | | | | | | | | | | | X | X |
| <i>Electra</i> sp. | | | | | | | | X | | | | X |
| <i>Flustra foliacea</i> | sea mat | | | | X | | X | X | | X | | X |
| <i>Chartella papyracea</i> | | | | | | | | X | | | | |
| <i>Cellaria</i> sp. | | X | | | X | | X | | X | X | | X |
| <i>Cellaria fistulosa</i> | | | | | | | | X | | | | |
| <i>Scrupocellaria</i> sp. | | | | | | | X | X | | X | | X |
| <i>Bicellariella ciliata</i> | | | | | | | | | X | X | | |
| <i>Bugula</i> sp. | | X | | | | | | | | | | |
| <i>Bugula flabellata</i> | | | | | | | X | X | X | X | | X |
| <i>Bugula plumosa</i> | | | | | X | | X | X | X | X | X | |
| <i>Bugula turbinata</i> | | | | | | | | X | | X | | X |
| <i>Eucratea loricata</i> | | | | | | | | X | | X | | |

| Site number | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8/1 | 8/2 | 9 | 10 |
|-------------------------------------|-----------------------|-------------|-------------|----------------|-------------|-------|----------------------|-------|-------|-------|-------|-------|
| Divers | | NC MH KR | NC MH KR | RH KR LK PK | PB BS JT | RH KR | PB BS JT LK PK | RH KR | LK PK | PB BS | RH KR | PB BS |
| <i>Dilsea carnosa</i> | pepper dulse | | | | X | X | | | | | X | X |
| <i>Meredithia microphylla</i> | | | | | | | X | | | | | |
| corralline crust indet | | | X | | X | | X | | | | | |
| <i>Halurus flosculosus</i> | | | | | | X | X | | | | X | |
| <i>Phyllophora</i> sp. | | | | | | | | X | | | | |
| <i>Phyllophora crispa</i> | | | | | X | | | | | | | |
| <i>Phyllophora pseudoceranoides</i> | | | | | X | | | | | | | |
| <i>Schottera nicaeensis</i> | | | | | | | X | X | | | | |
| <i>Plocamium cartilaginium</i> | | | | | X | X | X | X | | | X | |
| <i>Furcellaria lumbricalis</i> | | | | | | X | | | | | | |
| <i>Calliblepharis jubata</i> | | | | | | | | | | | X | |
| <i>Griffithsia flosculosa</i> | | | | | | | | X | | | | |
| <i>Cryptopleura ramosa</i> | | | | | X | | | | | | | X |
| <i>Delesseria sanguinea</i> | | | | | | | | X | | | X | |
| <i>Hypoglossum hypoglossoides</i> | | | | | X | | | | | | | |
| <i>Membranoptera alata</i> | | | | | | | | | | | X | |
| <i>Phycodrys rubens</i> | sea oak/beach | | | | X | X | X | X | | | X | |
| <i>Heterosiphonia plumosa</i> | | | | | X | | | | | | | X |
| <i>Brongniartella byssoides</i> | | | | | | X | | | | | | |
| Chromophycota | Brown seaweeds | | | | | | | | | | | |
| <i>Dictyota dichotoma</i> | | X | | | | X | | X | | | | X |
| <i>Chorda filum</i> | | X | X | | | | | | | | | |
| <i>Laminaria digitata</i> | kelp or oarweed | | X | | | | | | | | | |
| <i>Laminaria hyperborea</i> | kelp | X | | | X | X | X | X | X | | | X |
| <i>Laminaria saccharina</i> | sugar kelp | X | X | | | X | | | | | | |
| <i>Halidrys siliquosa</i> | | | | | | X | | | | | X | |
| Chlorophycota | Green seaweeds | | | | | | | | | | | |
| <i>Ulva</i> sp. | sea lettuce | | X | | | | | | | | | |
| diatoms (benthic) | slime | X | | | X | | | | | | | |