

MARINE CONSERVATION SOCIETY

LANCASHIRE AREA GROUP

REPORT OF SEASEARCH SURVEY

LOCH RYAN, S.W. SCOTLAND

JUNE 1989

Report compiled by Ron Crosby

The Survey Team was made up of members of :-

Lancaster University Branch BS-AC
Castle Rushen Divers Branch BS-AC
Solway Branch BS-AC
Preston Branch BS-AC
Burnley Branch BS-AC
Barrow Branch BS-AC



**MARINE CONSERVATION
SOCIETY**

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ACKNOWLEDGMENTS

Many thanks to all members of the survey team as listed below for their hard work and enthusiasm during the weekend enabling the survey to be completed in the short time available.

Thanks also to Preston S.A.C. Lancaster University S.A.C., Dr. Mark Woombs and Gil and Betty Green for the loan of boats and equipment without which it would not have been possible to carry out this survey.

Dr. Susan Gubbay of the Marine Conservation Society provided very useful information with the selection of the survey sites in the Loch and we would like to thank her for her help.

SURVEY TEAM :-

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Tony Mitchell	
Sue Thornley	
Ken Wallace	
Michael Turner	
Dave O'Holland	

1. INTRODUCTION

The aim of this SEASEARCH expedition was to describe the major habitats and community types in Loch Ryan, a sea loch on the south west coast of Scotland. The limits of the survey area are shown in Figure 1.

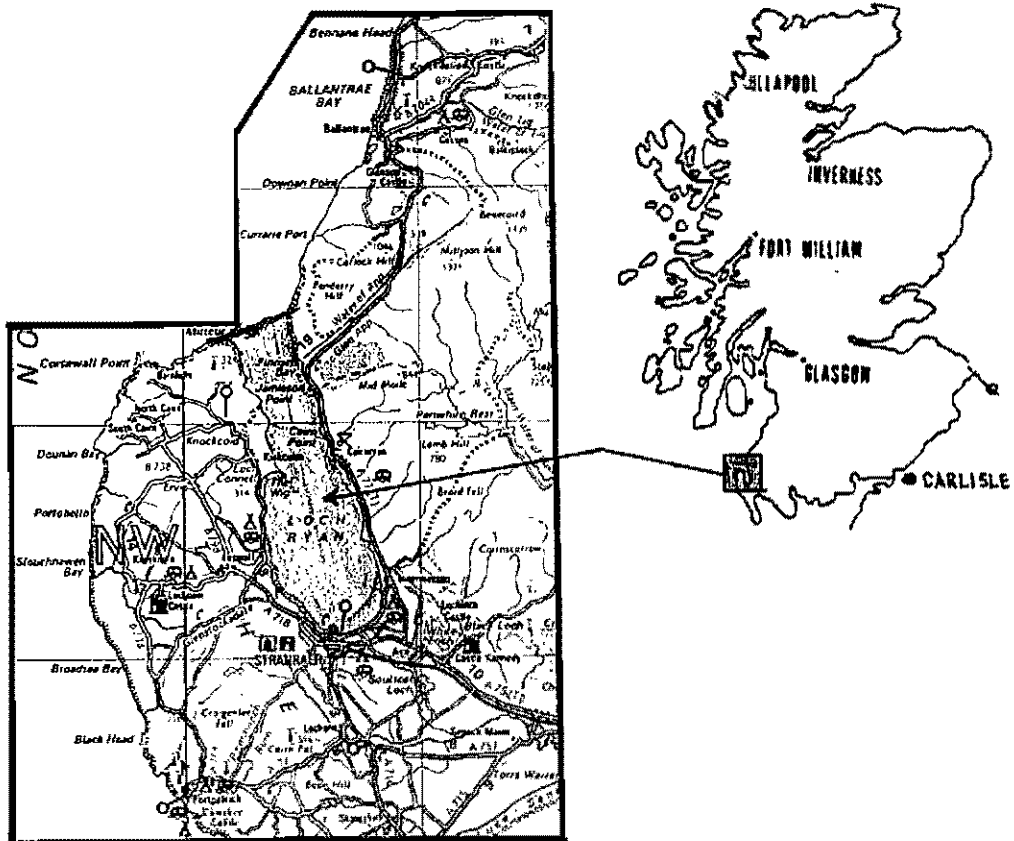
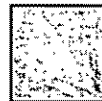


Figure 1. Location and Limits of Survey Area.

SEASEARCH Survey area shown thus:-



Sea lochs are one of the most conspicuous large scale coastal features on the west coast of Scotland. Their formation, present topography and bathymetry have all been significantly influenced by the last ice age, the characteristic features of such activity are clearly apparent in many of the sea lochs. The general direction of ice movement was outwards from the central highlands with a resultant scouring of valleys leading to the sea on the west coast. The effect of glaciation in such situations results in the formation of deep 'basins' with 'passes' and 'sills' as the material collected by the glaciers is deposited.

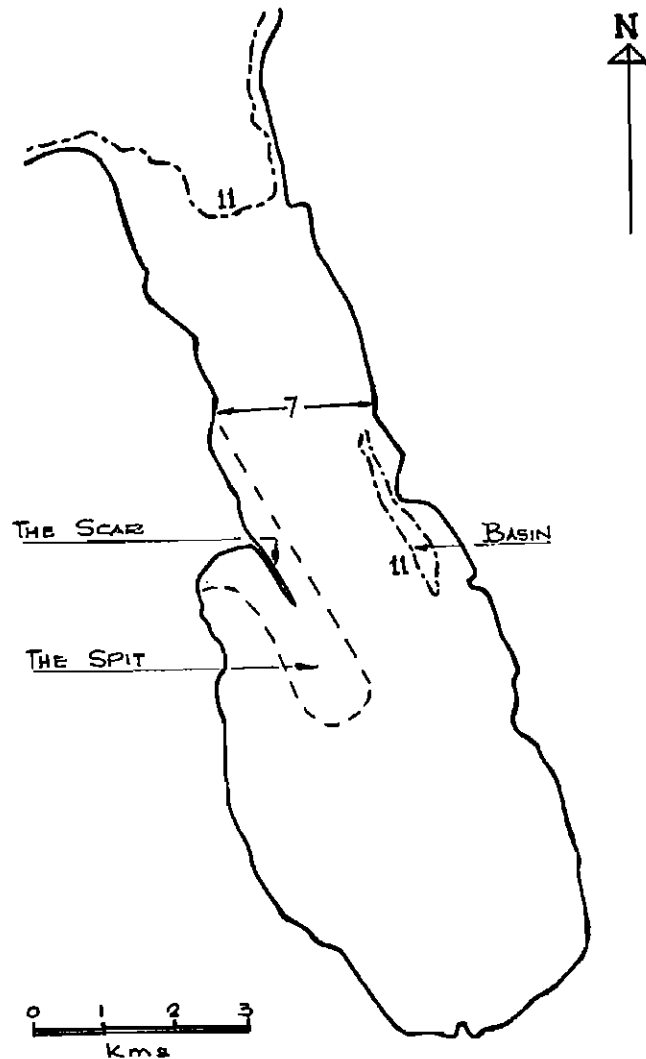


Figure 2. Large scale features in Loch Ryan
Annotated from Edwards (1986)

The geology of an area influences the broad distribution of habitats and communities. Rock types and geological activity, such as folding and faulting not only influence what is found within a particular sea loch, but also help to explain differences between sea lochs. The Ordovician rocks to the north of the Southern Upland fault which runs through the mouth of the loch between Lady Bay and Garry Point consists of conglomerates, siltstones and greywakes and are known as the Corsewall Group. A narrow band of millstone grit outcrops on the western shore just south of Lady Bay. Permian sandstones on Upper Carboniferous rocks form much of the southern and western shores of the loch and here raised beaches are much in evidence, a legacy of the last glaciation. (Figure 3). A number of characteristics of the loch have been reported in a survey of sea lochs by Edwards (1986) and are summarized in Table 1.

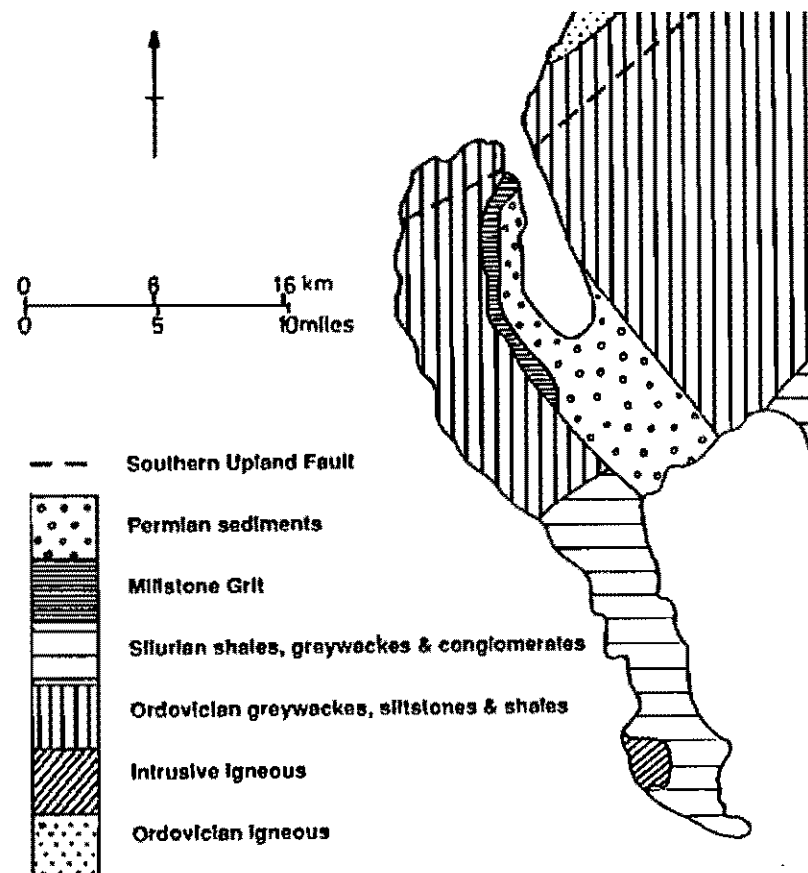


Figure 3. Geology of the Loch Ryan Area.

Table 1.

PHYSICAL CHARACTERISTICS OF LOCH RYAN

O.S. Grid reference	NR203574
Chart number	1403
Loch length (kms)	13.4
Tidal range (m)	2.8
Maximum depth (m)	16.0
HW area (sq.kms)	41.6
LW area (sq. kms)	40.3
LW volume (million m ³)	189.2
Watershed (sq.kms)	197
Annual rainfall (mm)	1100
Runoff (M m ³ /year)	167

Sill Data:-

Sill number	1 (see Fig. 2)
Length (m)	3450
HW width (m)	2200
LW width (m)	2130
Depth (m)	7
Mean depth (m)	5
Current (cm/s)	23
Basin depth (m)	15

(from Edwards 1986)

Very little published information was available on the marine habitats and communities in Loch Ryan prior to this survey. Information which was available and was referred to prior to the survey includes Edwards (1986) for the broad characteristics of the loch, and a dive site guide by Ridley which contains brief descriptions of the sublittoral habitats at a number of locations in the survey area. Useful background information on Loch Ryan was also made available by Ron Crosby who has dived in the area for a number of years.

(Published since this survey. MNCR SURVEY OF SCOTTISH SEA LOCHS. LOCH RYAN, CHRISTINE HOWSON MARCH 1989).

2. SURVEY AIMS

The aim of the survey was to identify the major habitat and community types within Loch Ryan and to give an overall description of their distribution in relation to the topography of the survey area.

3. METHODS

The survey was carried out by divers working in pairs at locations identified by Dr. Susan Gubbay. With the exception of sites 25 & 27 all diving was done from inflatable boats. Information collected on each dive was transcribed onto standard SEASEARCH forms.

4. ACCESS TO SITES

Access to dive sites presented no problems. During the survey inflatable boats were launched from two different locations to make access easier. Extreme caution and a good look-out were needed when diving in areas used by the ferries.

Launch point

Lady Bay car park
and picnic area.
Firm sand beach.

Wig Bay sailing Club
Slipway. Not suitable
at LW springs.

Survey area

Mouth and Central
section of the Loch

Central section and
Head of the Loch

5. RESULTS

The survey was carried out using methods designed to provide an overview of the habitats and communities in the area. The results are set out on the following pages for each of the three parts of the survey area, mouth, central section and head of the Loch. The information is summarised in Table 2, on the location map, Fig. 4 and substrate map, Fig. 5 which should be referred to in conjunction with the detailed dive site descriptions that follow. Maximum depths shown in Table 2 are corrected to Chart Datum.

6. GENERAL DESCRIPTION OF HABITATS IN LOCH RYAN

For the purpose of describing the habitats and the dominant communities in Loch Ryan it is convenient to divide the loch into three separate areas, the mouth or outer area of the loch, the central section and the head or inner section of the loch.

The outer section of the loch faces north and is therefore exposed to wind and wave action from that quarter, otherwise it is quite well sheltered from the prevailing south westerly winds. The mouth on both east and west shores is bounded by quite steep rocky cliffs grading down to a short boulder slope then to a coarse sand with shell debris and broken shell.

The lower sub-tidal area of the cliffs and the larger boulders have a healthy kelp forest cover of *Laminaria hyperborea*. The smaller boulders and pebbles on the coarse sand support *Laminaria saccharina*. The deeper middle area consists mainly of coarse sand with broken shell and shell debris, large patches of *Ophiothrix fragilis* were recorded as well as *Urticina felina* and *Buccinum undatum*. The cliffs on the west side which stretch from the mouth of the loch to the south of Jameison Point are interrupted by a small sandy bay (Lady Bay). *Arenicola marina* is common in the bay. There is a sub-tidal bedrock reef running parallel to the shoreline for almost the whole length of Lady bay. This reef is covered by a dense *L. hyperborea* forest where *Echinus esculentus* and numerous crustaceans are very common. On the eastern shore opposite Lady bay is Finnarts Bay. Here we have a steep beach consisting of boulders, cobbles and pebbles running out onto coarse sand. The beach material is subject to a lot of movement due to tide and wave action and does not appear to support much life. At the north end of Finnarts Bay the only river of any size (River App) enters the loch. This usually results in quite a large area of brackish peat stained water (noted on previous visits) running north beyond Garry Point, however at the time of this survey in almost drought conditions the river was reduced to only a trickle. The maximum depth in the entrance section is approx. 17metres below C.D. Tidal streams are almost negligible, reaching only 1 knot max. at spring tides.

The dominant feature of the central section of the loch is a large shingle, stone and mud bank (The Scar) continuing as a sand bank (The Spit) which runs diagonally in a south easterly direction about two thirds of the way across the loch from Kirkcolm Point on the western shore towards Leffnol Point on the eastern side. The whole of the central section is quite shallow (5metres below C.D. max.) except for a long narrow trough running parallel to the eastern shore off Cairn Ryan Point which is in excess of 14metres below C.D. It is this narrow section that experiences the fastest tidal flow in the loch, however this barely reaches 1.5 knots. Because of ferry traffic we were not able to survey the middle of the central section and had to be content with looking at sites along both shores. The sites examined were all very gradual slopes, almost level in places. Starting from C.D. all sites were very similar, fine sand/mud with cobble and pebble patches and abundant isolated boulders supporting *L. saccharina*. This gave way to flat sand with shell debris, small pebble patches and the occasional boulder with *L. saccharina* and numerous hermit crabs.

With the exception of an area between the end of the Spit and Leffnol Point in which a depth of 6metres below C.D. is recorded and a 5metre deep dredged channel from Stranraer harbour towards Cairn Ryan the whole of the inner section of the loch is a very shallow almost flat muddy bottomed basin (see fig 5).

Most of the sub-tidal areas around the margin of the inner loch consist of fine sandy mud with stony patches, pebbles and abundant boulders. On the western side this gave way to fine flat sand before terminating in the flat muddy plain across the middle of the loch. The eastern side appears to grade direct from the sand, mud and stones to the muddy plain. The area to the east of Stranraer harbour is fine sand (not surveyed) and the bay inside the Scar (The Wig) comprises of sand with stones and cobbles giving way to fine sand. This inner section is almost free from the effects of tidal streams, but because of the low lying nature of the surrounding land it is affected by wind from any quarter.

L. saccharina is common on the boulders and stones all around the inner loch. Patches of *Zostera sp.* were recorded at three sites on the western side. A large area of *Lanice conchilega* were found in shallow water off Beoch Burn and Breadcrumb sponge, *Halichondria panacea* was common on stony patches on the eastern shore. *Arenicola marina* were noted on the sandy substrates whilst *Sabella pavonina*, *Myxicola infundibulum*, *Virgularia mirabilis* and *Cerianthus lloydii* were all common in the muddy regions. The bottom of the dredged channel was found to be compacted hard mud and on either side of the channel is a continuous mound of empty turret shells, whether the shells were washed out by the wash from the ferry traffic or are a result of dredging was not determined.

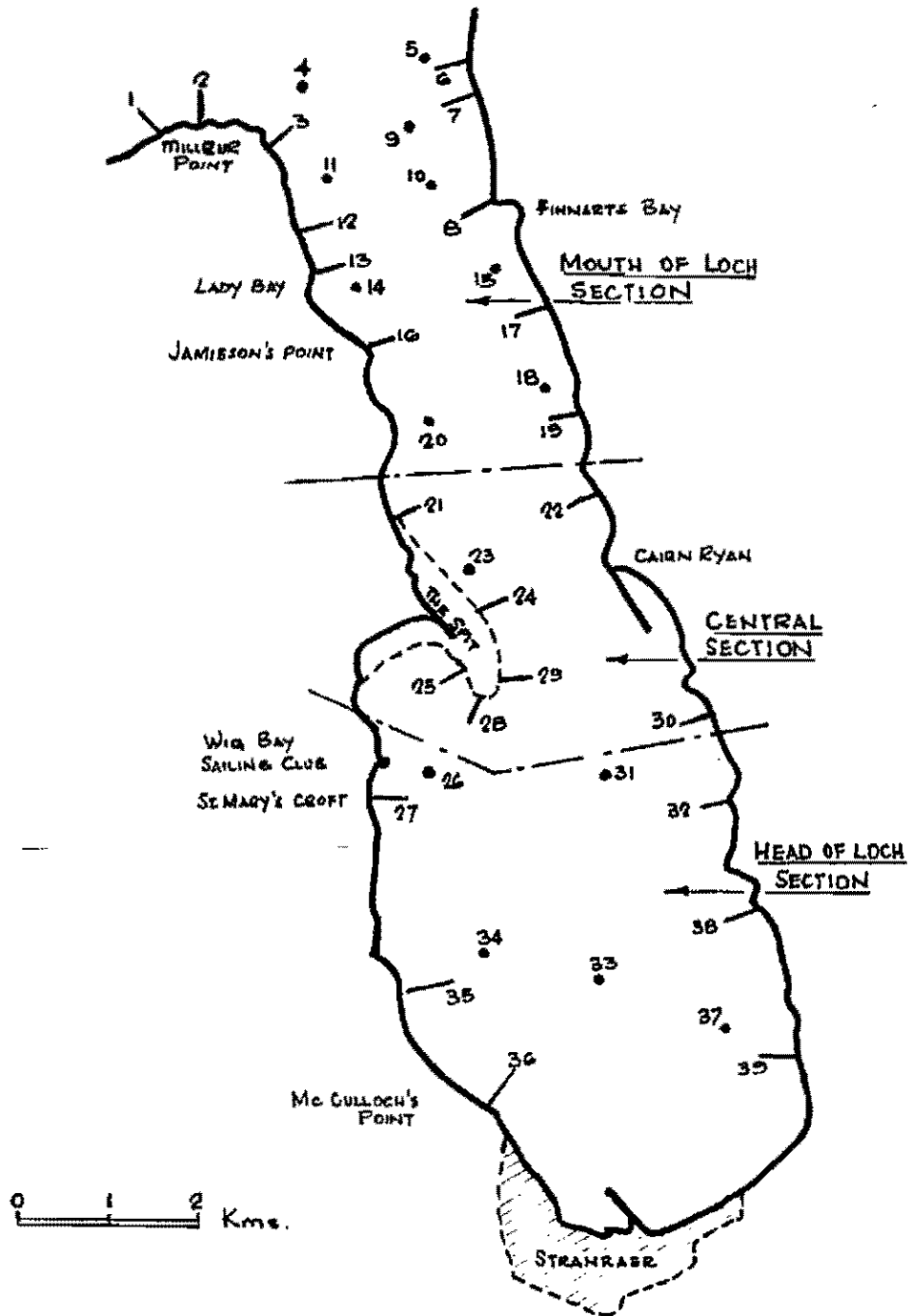
7. HUMAN IMPACTS IN THE SURVEY AREA

Two ferry services operating frequent daily crossings from Stranraer and Cairn Ryan across the North channel to Belfast and Larne constitute the major commercial shipping activity in the loch.

For many years the pier and surrounding area at Cairn Ryan was used as a ship breakers yard, mainly ex. military vessels. The yard closed in 1988 and was generally tidied up, however quite a lot of rubbish is to found underwater around the pier.

Very few fishing boats use the loch, the only commercial fishing activities appear to be static netting gear (for salmon) occasionally in use at Lady Bay, this is in the form of a box shaped trap staked out off the bay with a leader net running parallel to the western shore towards the mouth of the loch. There is also a limited amount of lobster potting in the loch and cockles are collected on the Spit. Information gathered on the oyster fishery in the loch was only sparse, but it is understood that work is still being carried out on the beds. There is a small trout farm at Finnarts Bay using the River App as its water supply. The largest recreational impact is angling, from both the shore and boats, the popular launch site being Lady Bay where access to the beach and a picnic area have been created in recent years. There is also a very large slipway about half way along the western shore sheltered by The Wig where Stranraer Sailing Club have their HQ. and moorings.

In association with the angling activities fairly extensive bait digging takes place along the southern shore of the loch in the vicinity of Stranraer. The major source of sewage effluent is discharged via an outfall near Stranraer Harbour. In addition there are a number of much smaller outfalls, the principle pipes being from Kirkcolm and Cairn Ryan. Milk waste material from the creamery at the south west corner of the loch was as far as could be ascertained the only industrial effluent being put into the loch at the present time.





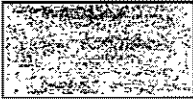


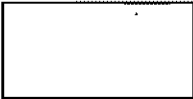
Transect dives are shown thus: -..... —




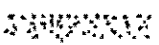

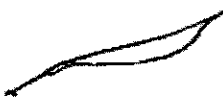


Spot dives are shown thus: -..... ●

Figure 4. Location of dive sites in Loch Ryan.

Table 2.**DETAILS OF DIVE SITES IN LOCH RYAN**

Site No.	Site Name	N.G.R.	Lat/Long	Max. Depth (m) Corrected to C.D.
1.	W. of Bradock	NX008 735	55-01N 05-07W	12.4
2.	Boak Port	NX015 737	55-01.1N 05-06.2W	14.3
3.	S.E. of Milleur Point	NX023 735	55-01N 05-05.6W	6.7
4.	Approach to loch(middle)	NX030 755	55-01.6N 05-05W	14.4
5.	Approach to loch(E.Side)	NX041 748	55-01.8N 05-04W	15.0
6.	Finnarts Point	NX048 728	55-01.8N 05-03.5W	9.6
7.	S. of Finnarts Pt.(Dyke Foot)	NX047 739	55-01.4N 05-03.5W	10.3
8.	Garry Point	NX048 728	55-00.7N 05-03.2W	9.4
9.	Mouth of loch, (Centre)	NX036 740	55-01.3N 05-04.5W	14.0
10.	Mouth of loch, (E.Side)	NX045 732	55-00.9N 05-03.8W	11.5
11.	Mouth of loch, (W.Side)	NX028 731	55-00.7N 05-04.7W	9.0
12.	Craignally	NX026 725	55-00.4N 05-05.2W	5.4
13.	Lady Rue	NX028 720	55-00.2N 05-05W	5.7
14.	E. of Lady Bay	NX034 718	55-00.1N 05-04.4W	7.8
15.	W. of Marchburn	NX054 712	55-00.2N 05-03.2W	4.9
16.	Jamieson's Point	NX034 711	54-59.7N 05-04.4W	2.6
17.	Marchburn Waterfalls	NX057 712	55-00.2N 05-02.7W	3.5
18.	Forbes Shoal	NX055 707	54-59.5N 05-02.8W	7.8
19.	Little Laight	NX058 703	54-59.4N 05-02.2W	2.4
20.	E. of Clachan	NX039 699	54-59.1N 05-03.4W	5.3
21.	W. of Kirkcolm Buoy	NX040 689	54-58.8N 05-03.8W	0.5
22.	S. of Old House Point	NX058 695	54-58.9N 05-02W	0.7
23.	W. of Cairn Point	NX050 684	54-58.4N 05-02.7W	0.6
24.	Kirkcolm Point	NX049 681	54-58.1N 05-02.7W	1.75
25.	The Wig	NX044 677	54-57.6N 05-03W	2.3
26.	The Wig Bay	NX041 662	54-57N 05-03.4W	3.6
27.	St. Mary's Croft	NX037 655	54-56.8N 05-03.9W	1.1
28.	W. side of The Spit	NX045 671	54-57N 05-02.2W	1.5
29.	E. side of The Spit	NX049 073	54-57.3N 05-01.8W	0.5
30.	Bankhead	NX073 668	54-57.5N 05-00.6W	3.1
31.	W. of Drummuckloch	NX069 662	54-57.2N 05-01W	1.5
32.	Leffnoll	NX075 659	54-56.9N 05-00.6W	1.2
33.	Dredged Channel	NX060 639	54-55.8N 05-01.5W	8.1
34.	E. of Soleburn	NX047 642	54-55.9N 05-02.8W	2.8
35.	Hillhead of Criachmore	NX042 638	54-55.7N 05-03.5W	2.4
36.	Broadstone	NX049 627	54-55.2N 05-02.6W	1.8
37.	W. of Rock McGibbon	NX075 633	54-55.6N 05-00.7W	4.4
38.	Beoch Burn	NX077 646	54-56.4N 05-00W	3.8
39.	Innermessan	NX079 630	54-55.5N 04-59.6W	2.6

<u>Colour</u>	<u>Substrate</u>	<u>Sites where substrate is present</u>
	Bedrock	1, 2, 3, 6, 7, 8, 12, 13, 16, 17.
	Boulders	6, 8, 12, 13, 19.
	Cobbles/Pebbles/Stones	6, 27, 32.
	Sand	2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 25, 30, 34, 36, 38, 39.
	Muddy sand	24, 27, 28, 30, 31, 32, 35.
	Mud	2, 19, 21, 22, 23, 26, 29, 30, 33, 37, 38.

			
<u>BEDROCK</u>	<u>BOULDERS</u>	<u>PEBBLES</u> <u>COBBLES</u>	<u>SAND</u>
			
<u>L. hyperborea</u>	<u>L. saccharina</u>	<u>Sabella pavonina</u>	<u>Zostera (sp.)</u>

Key for substrate map & detailed sections

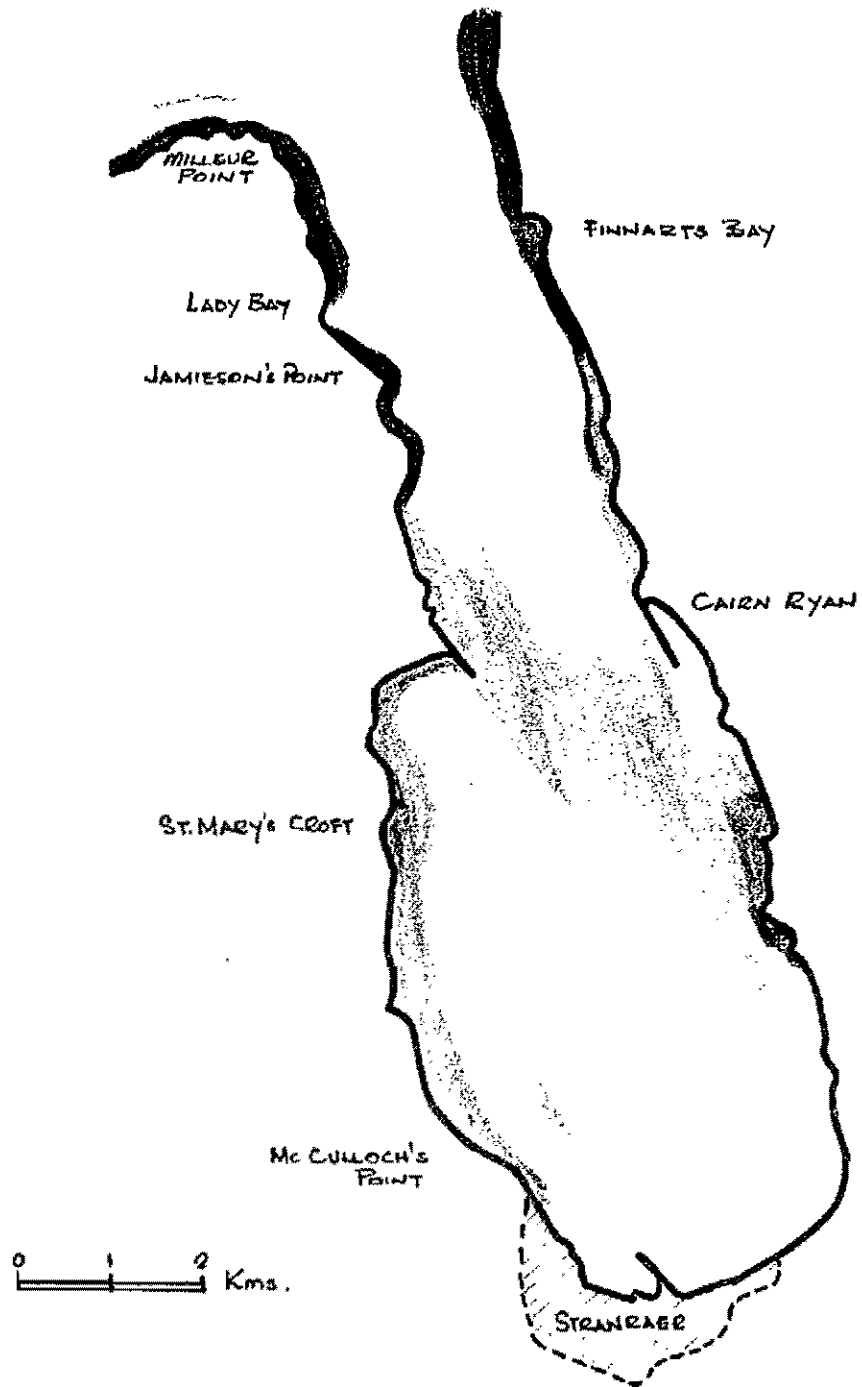


Fig. 5. Map showing different substrates within the Loch

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 1

SITE NAME WEST of BRADDOCK

POSITION .. 55° 01' N 05° 07' W

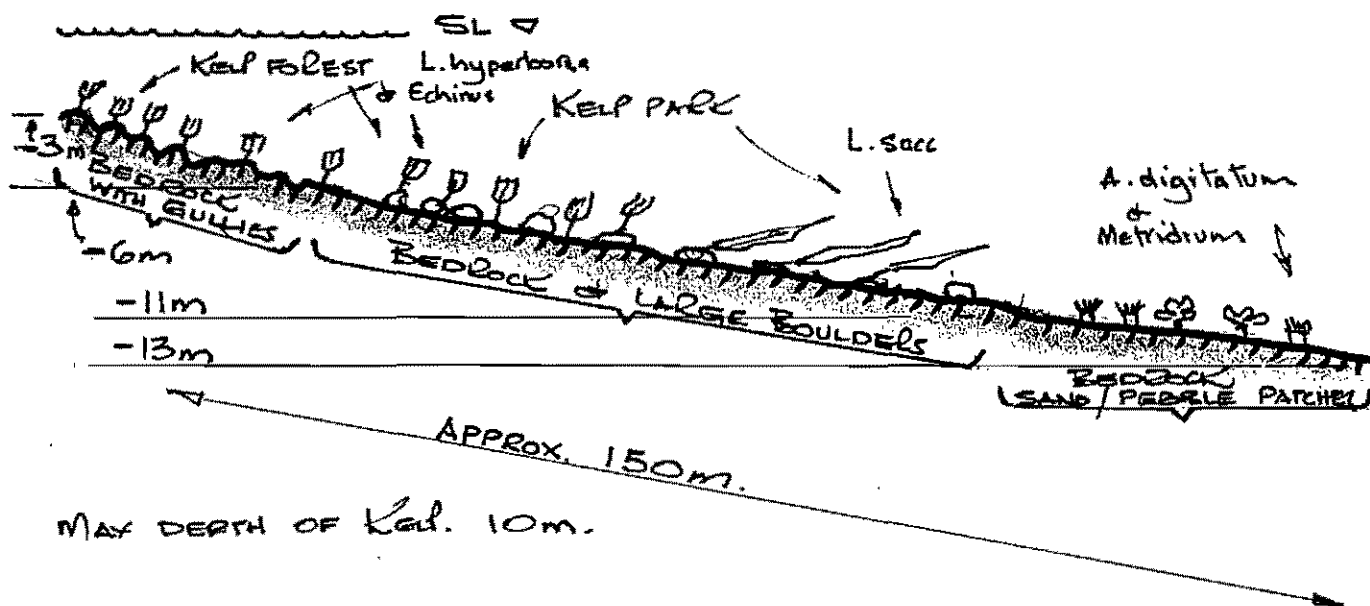
Name of recorder STUART DEVEREUX

Date .. 24.06.89

Dive time .. 12.00 hrs

Duration .. 35 mins

Description of seabed and marine life.



Marine species noted.

- L. hyperborea*
- L. saccharina*
- Echinus esculentus*
- Alcyonium digitatum*
- Metridium senile*
- Ophiotricha fragilis*
- Clavelina lepadiformis*
- Scyliorhinus caniculus*
- Cancer pagurus*
- Carcinus maenas*
- Cerianthus lloydii*

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 2

SITE NAME BOAK PORT

POSITION 55° 01' 1" N, 05° 06' 2" W

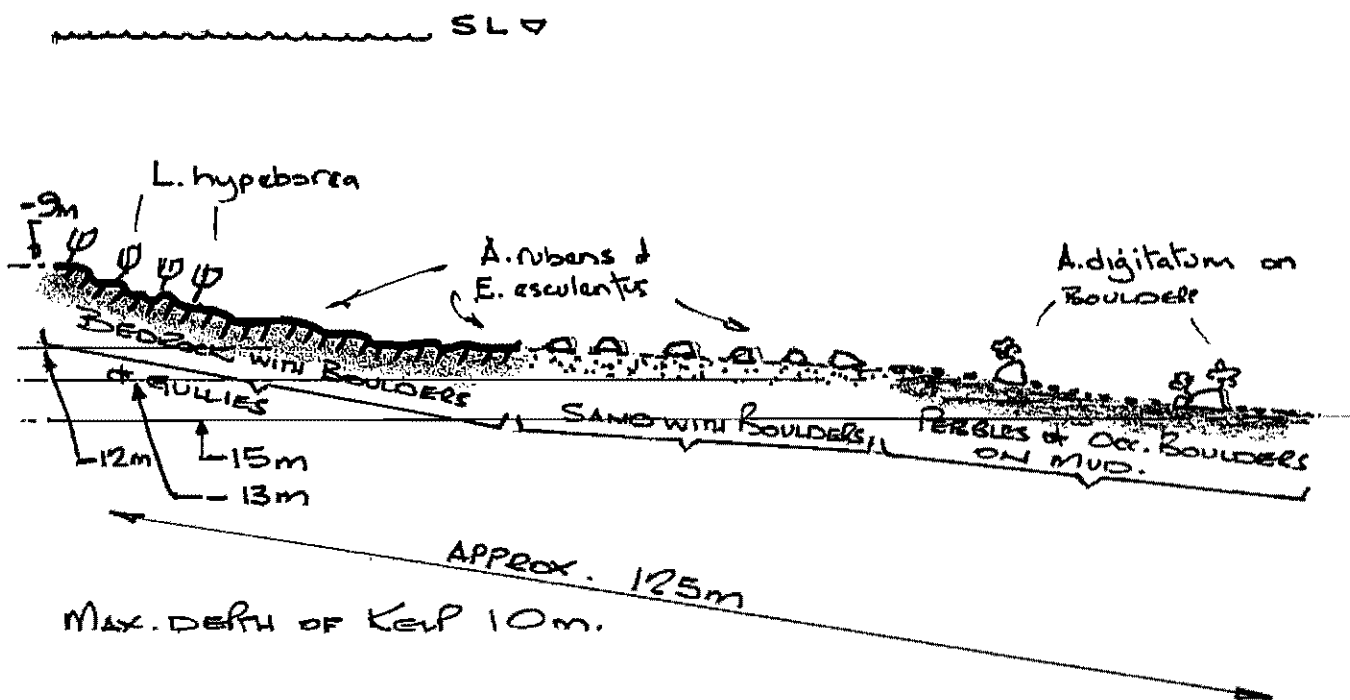
Name of recorder PAUL CHEETHAM
JOHN RICHARDS

Date 24.6.89

Dive time 12.10 hrs.

Duration 25 mins

Description of seabed and marine life.



Marine species noted.

L. hyperborea

Echinus asculentus

Asterias rubens

Acyonium digitatum

Cancer pagurus

Carcinus maenas

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 3

SITE NAME... S.E. OF MILEUR POINT
IAN LOCHART.

POSITION... 55° 01' N 05° 05' W

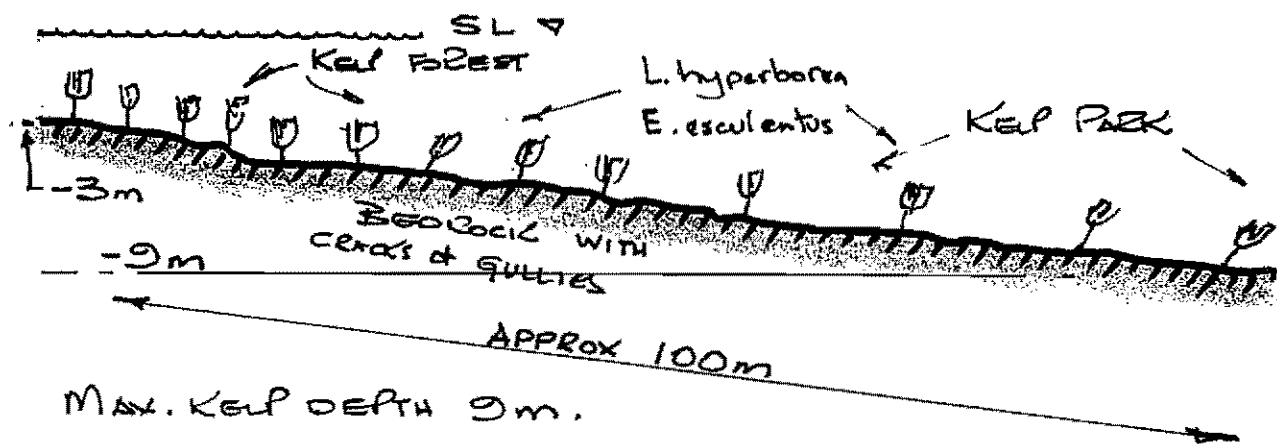
Name of recorder... DAVE QUIRK...

Date... 24.06.89...

Dive time... 13.00 hrs.

Duration... 25 mins....

Description of seabed and marine life.



Marine species noted.

- L. hyperborea
- Echinus esculentus.
- Asterias rubens
- Cancer pagurus
- Urticina felina
- ENCrustING PLUK ALGAE
- HELMIT CRABS
- Labrus bergylla

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 4

SITE NAME... APPROACH TO LOCH
RYAN... (MIDDLE)... ..

POSITION... 55° 01.6' N 05° 05' W

Name of recorder... MARK WOONES

Date... 24.06.89

Dive time... 13.25 hrs

Duration... 15 mins

Description of seabed and marine life.

~~~~~ SL ▽

SEA BED COVERED WITH EXTENSIVE  
DENSE BED OF BRITTLE STARS.  
Ophiothrix fragilis.

-10m

.....

FLAT RIPPLED FINE SAND  
WITH SCATTERED SMALL PEBBLES

### Marine species noted.

Alcyonium digitatum

Urticina felina

Ophiothrix fragilis

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) .....5.....

SITE NAME...<sup>APPROACH TO LOCH</sup>RYAN...<sub>(E. SIDE)</sub>.....

POSITION...55° 01' 8" N 05° 04' 1" W

Name of recorder...MARK WOOMBAS...

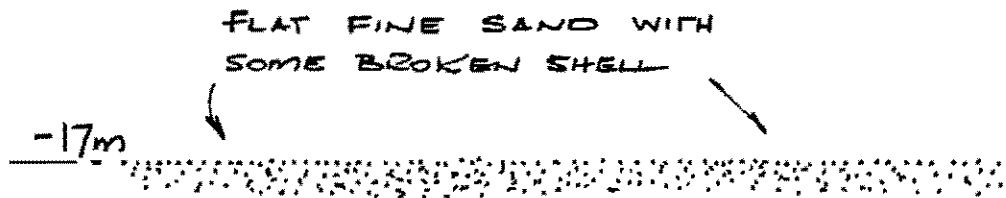
Date...24.06.89...

Dive time...14.10 hrs. ....

Duration...15 mins....

### Description of seabed and marine life.

~~~~~ SLV



Marine species noted.

HERMIT CRABS

Asterias rubens

Pomatoschistus minutus

Corystes cassivelaunus

Geneplax rhomboidea

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 6

SITE NAME. FINNARTS POINT...
STEPHEN LAINSON

POSITION. 55° 0' 18" N 05° 03' 5" W

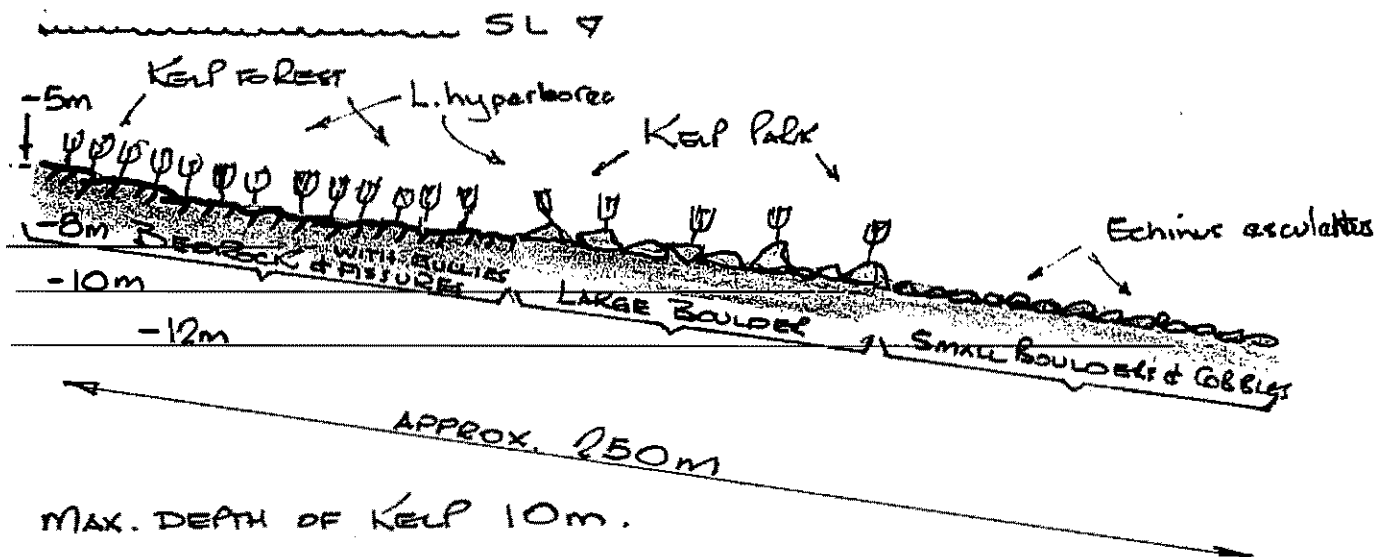
Name of recorder. MANDY LAINSON

Date. 24.06.89

Dive time. 14:47 hrs.

Duration. 27 mins.

Description of seabed and marine life.



Marine species noted.

L. hyperborea

Echinus esculentus

Asterias rubens

Comb jellies

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)7.....

S. of FINNARTS POINT.
SITE NAME.....(DYKE FOOT).....

POSITION. 55° 01.4' N 05° 03.5' W

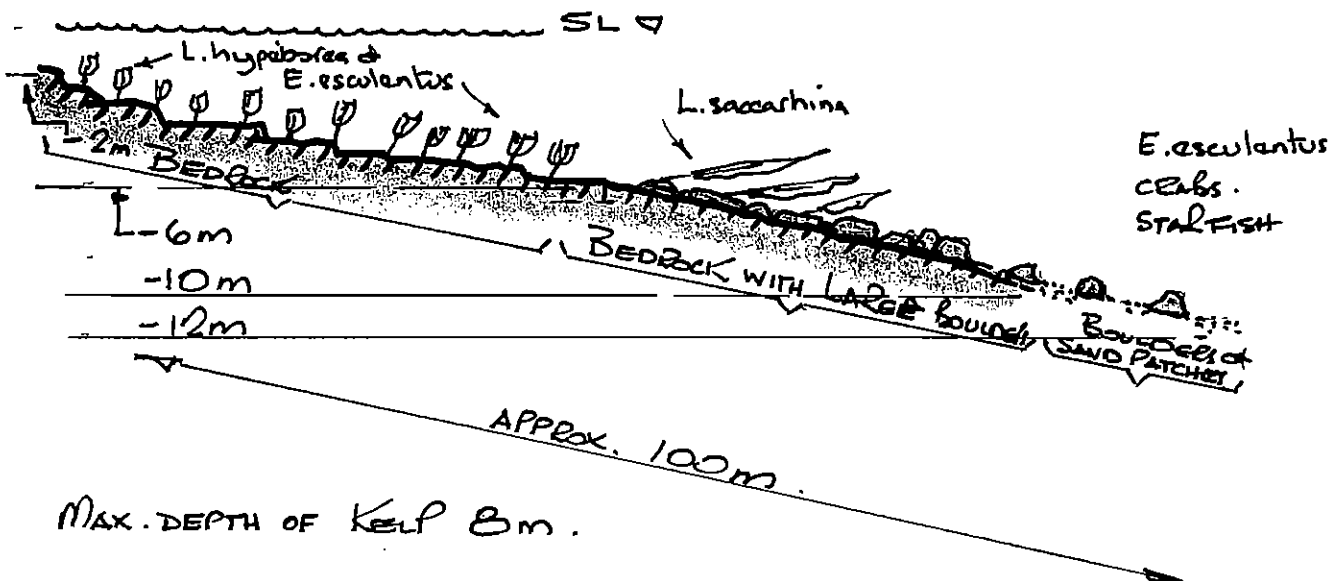
Name of recorder. HAZEL CARTWRIGHT

Date. 24.06.89

Dive time.....12:00 hrs.....

Duration...26 mins.....

Description of seabed and marine life.



Marine species noted.

| | |
|-------------------------|---------------------|
| L. hyperborea | Nucella lapillus |
| L. saccharina | Buccinum undatum |
| Echinus esculentus | Crossaster papposus |
| HERMIT crabs. | |
| Asterias rubens | |
| Cancer pagurus | |
| Carcinus maenas | |
| Seyliorchinus caniculus | |
| TUBE worms | |
| SPONGE | |

LOCH RYAN
SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 8

SITE NAME... GARRY POINT.....

POSITION... 55° 00' 7" N 05° 03' 2" W

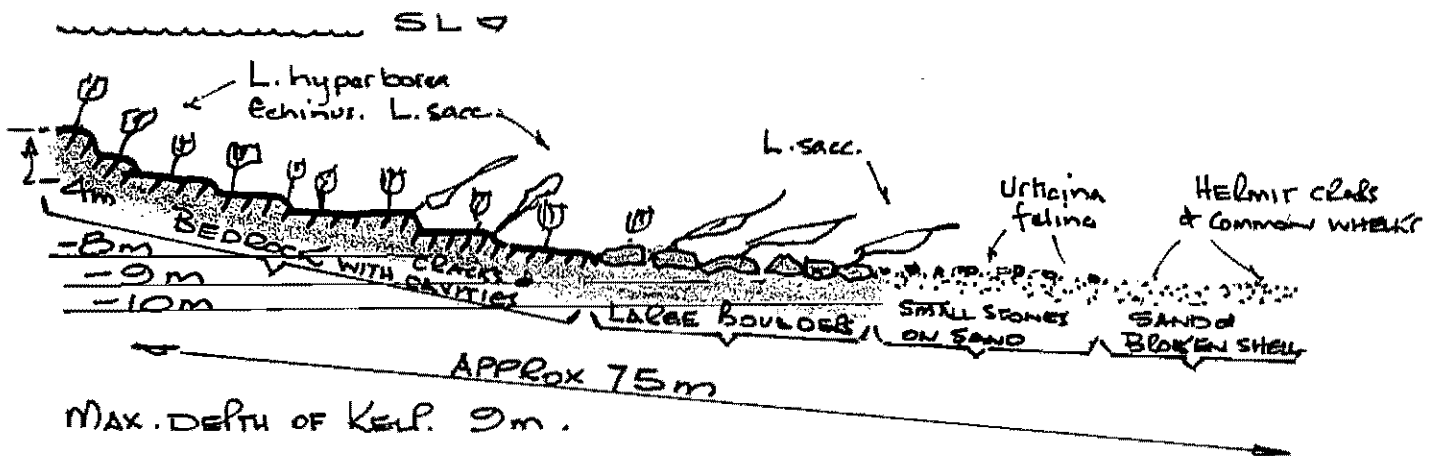
Name of recorder... LINDA HULSON.....

Date... 24.06.89.....

Dive time... 12.00 hrs.....

Duration... 27 mins.....

Description of seabed and marine life.



Marine species noted.

- | | |
|---------------------|-------------------------|
| L. hyperborea | Helmit crabs |
| L. saccharina | Marthasterias glacialis |
| Echinus esculentus | Nemertea antennina |
| Urticina felina | Necora puber |
| Buccinum undatum | Hyas araneus |
| Cancer pagurus | |
| Carcinus maenas | |
| Homarus gammarus | |
| Metridium senile | |
| Alcyonium digitatum | |
| Asterias rubens | |

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 9

SITE NAME..... MOUTH of LOCH RYAN.
(CENTRE)..... POSITION. 55°-01'3"N 05°-04'5"W

Name of recorder. JOHN SMILLIE..... Date. 24.06.89.....

Dive time. 12.30 hrs. Duration. 15 mins.....

Description of seabed and marine life.

~~~~~ SL ▽

FLAT SAND WITH  
BROKEN SHELL

-15m  
.....

### Marine species noted.

Asterias rubens  
HERMIT CRABS.  
Cyanea lamarckii  
Comb jellies

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) .....10.....  
MOUTH of LOCH RYAN  
SITE NAME.....(E. SIDE)..... POSITION. 55°-00.9'N 05°-03.8'W  
Name of recorder.....RON CROSBY..... Date.....24.06.89.  
Dive time.....10.30 hrs..... Duration.....12 mins.....

### Description of seabed and marine life.

~~~~~ SL ▽

FLAT FINE SAND WITH
BROKEN SHELL.

-12m

~~~~~

### Marine species noted.

Buccinum undatum  
HERMIT CRABS.



# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) ..... 11 .....

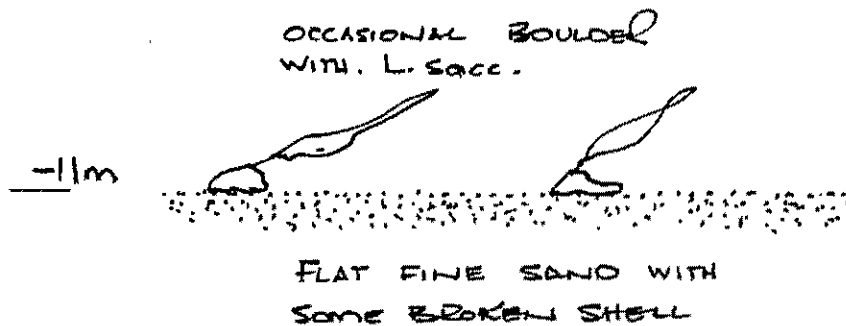
SITE NAME..... MOUTH of LOCH RYAN  
(W. SIDE)..... POSITION..... 55°-00.7'N 05°-04.7'W

Name of recorder..... STEWART SWAIN..... Date..... 24.06.89.....

Dive time..... 13:50 hrs..... Duration..... 26 mins.....

### Description of seabed and marine life.

~~~~~ SL ▽



Marine species noted.

L. saccharina
HERMIT CRABS
Buccinum undatum
Asterias rubens
Ensis sp.

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)12.....

SITE NAME...CRAIGNALLY.....
GORDON FLETCHER

POSITION...55°-00'4"N 05°-05'2"W

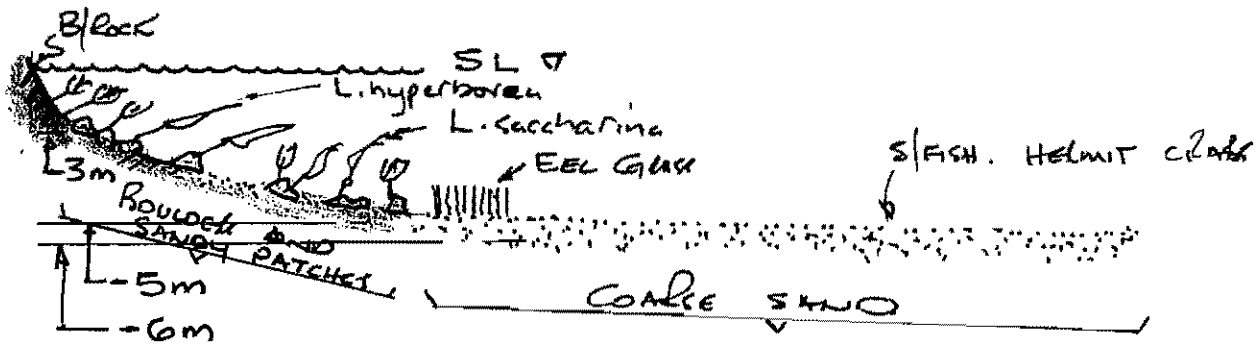
Name of recorder...CHRISSE RYAN.....

Date...24.06.89.....

Dive time...12.02 hrs......

Duration...33 mins.....

Description of seabed and marine life.



MAX. DEPTH OF KELP 5m.

Marine species noted.

Asterias rubens

Ensis (sp)

Liocarcinus puber

Liocarcinus depurator

L. saccharina

Cancer pagurus

Carcinus maenas

Encrusting pink Algae

Echinus esculentus

L. hyperborea

Ulva lactuca

Zostera (sp)

Pollachius pollachius

Corystes carriwellanus

Helmit Clark

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)13.....

SITE NAME...LADY RUE.....

POSITION...55° 00' 2" N 05° 05' W

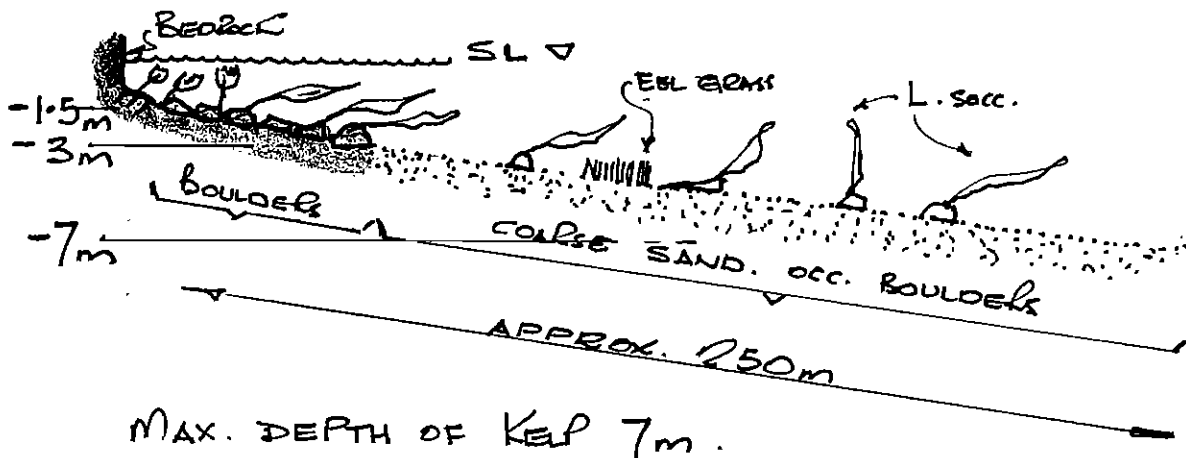
Name of recorder...TONY MITCHELL.....

Date...14.06.89.....

Dive time...12:54 hrs.....

Duration...23 mins.....

Description of seabed and marine life.



Marine species noted.

L. hyperborea
L. saccharina
Echinus asculentus
Zostera (sp)
HELMIT CRABS
Ensis (sp)
Ulva lactuca

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)14.....

SITE NAME..E. of LADY BAY.....

POSITION..55°-00'1"N 05°-04'4"W

Name of recorder..GIL GREEN.....

Date..24.06.89.....

Dive time.....12.17 hrs.....

Duration..13 mins.....

Description of seabed and marine life.

~~~~~ SL ▽

FINE SAND WITH SOME  
BROKEN SHELL & STONES

-8m. —————

### Marine species noted.

L. saccharina

HERMIT crabs

Asterias rubens

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) .....15.....

SITE NAME...W. of MARCHBURN

POSITION...55°-00'·2"N 05°-03'·2"W

Name of recorder...JOHN BUSHBY...

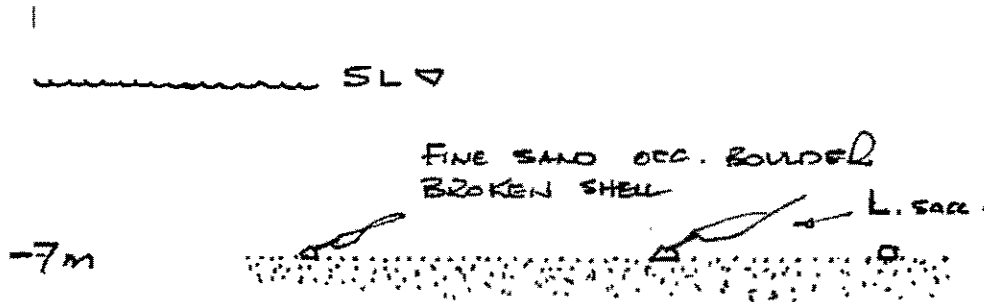
Date...24.06.89

Dive time...14:15 hrs.....

Duration...15 mins....

Description of seabed and marine life.

SL ▽  
FINE SAND OCC. BOULDER  
BROKEN SHELL  
L. sac.  
-7m



Marine species noted.

L. saccharina

HELMIT CLABS

Ophiothrix fragilis

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) ..... 16 .....

SITE NAME JAMIE SON'S POINT

POSITION 54° 59' 7" N 05° 04' 4" W

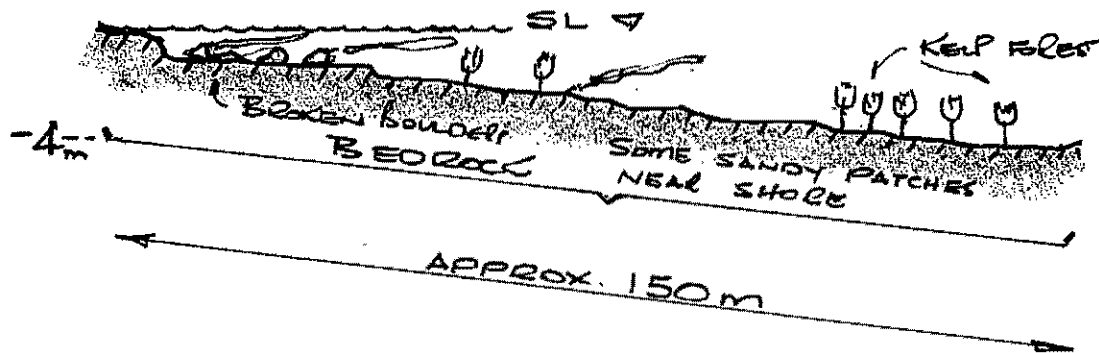
Name of recorder BETTY GREEN

Date 24.06.89

Dive time 13:15 hrs.

Duration 20 mins.

### Description of seabed and marine life.



### Marine species noted.

*L. hyperborea*

*L. saccharina*

*Echinus asculentus*

# LOCH RYAN

## SOUTH WEST SCOTLAND

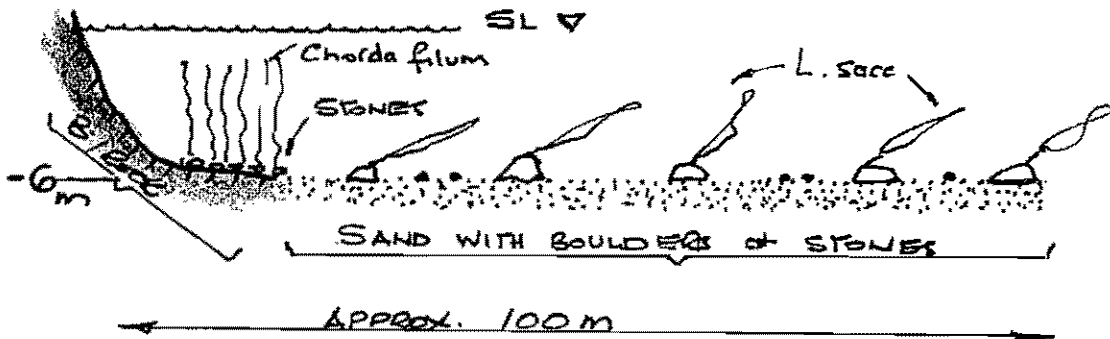
SURVEY SITE NUMBER:- (see map) .....17.....

SITE NAME..MARCHBURN WATERFALLS POSITION..55°-00.2'N 05°-02.7'W

Name of recorder..JOHN SMILLIE.. Date..24.06.89..

Dive time.....16:15 hrs..... Duration.....27 mins.....

### Description of seabed and marine life.



### Marine species noted.

L. saccharina  
Chorda filum  
Echinus esculentus  
BARNACLES  
Littorina littorea  
Ulva lactuca  
Ensis (sp)  
WRENCHES -  
Asterias rubens  
Hennicia oculata

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) .....18.....

SITE NAME...FORBES...SHOAL....

POSITION.54°-59.5'N 05°-02.0'W

Name of recorder.HAZEL CARTWRIGHT

Date.25.06.89

Dive time.....12.15 hrs.....

Duration...24 mins.....

### Description of seabed and marine life.

~~~~~ SL ▽

FLAT SAND WITH SMALL
STONES of L. SAC. SOME BROKEN SHELL



Marine species noted.

L. saccharina

Asterias rubens

HERMIT CRABS

Ensis (sp)

Urticina felina

SPIDER CRABS.

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)19.....

SITE NAME...LITTLE LAIGHT.....

POSITION...54°-59'-4"N 05°-02'-2"W

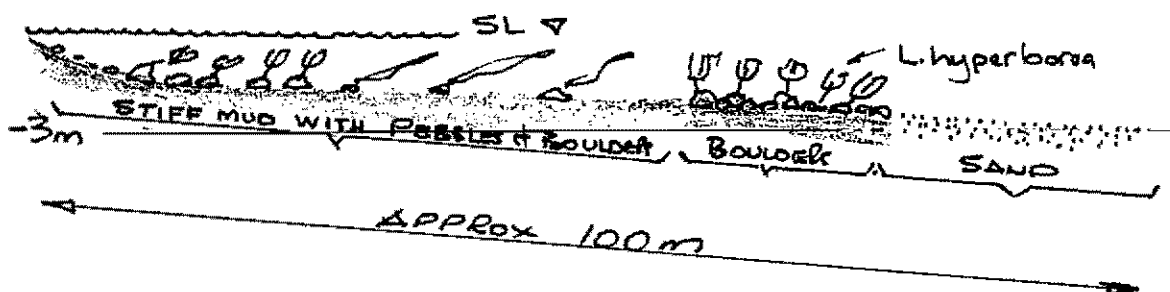
Name of recorder...GORDON FLETCHER
CHRISTINE RYAN.....

Date...25.06.83.....

Dive time...12.55 hrs.....

Duration...21 mins.....

Description of seabed and marine life.



Marine species noted.

- L. hyperborea
- L. saccharina
- Asterias rubens
- Crossaster papposus
- Hermit crabs
- Ulva lactuca
- RED ALGAE
- ENCrustING PINK ALGAE
- Virgularia mirabilis
- Membranipora membranacea

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)²⁰.....

SITE NAME...E. of CLACHAN.....

POSITION...54°-59'-1"N 05°-03'-4"W.....

Name of recorder...TONY MITCHELL.....

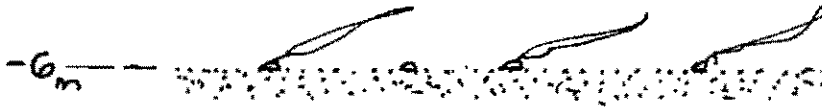
Date...25.06.89.....

Dive time...10:15 hrs.....

Duration...10 mins.....

Description of seabed and marine life.

..... SL ▽



FINE SAND, BROKEN SHELL
OCC. SMALL STONES WITH L. Sacc.

Marine species noted.

L. saccharina

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 21

SITE NAME... W. of KIRKCOLM BUOY
GORDON FLETCHER

POSITION... 54°-58.8'N 05°-03.8'W

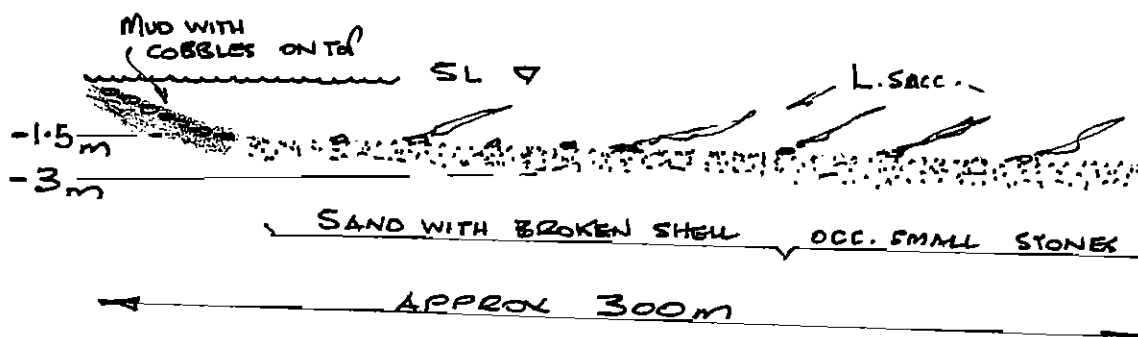
Name of recorder... CHRISSY RYAN

Date... 24.06.89

Dive time... 16:45 hrs.

Duration... 43 mins.

Description of seabed and marine life.



Marine species noted.

L. saccharina
Fucus vesiculosus
Littorina littorea
Nucella lapillus
Carcinus maenas
Hermit crabs
Liocarcinus depurator
Gibbula cineraria
Various sponges.

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) ...22.....

SITE NAME S. of OLD HOUSE POINT

POSITION 54°-58-9'N 05°-02'W

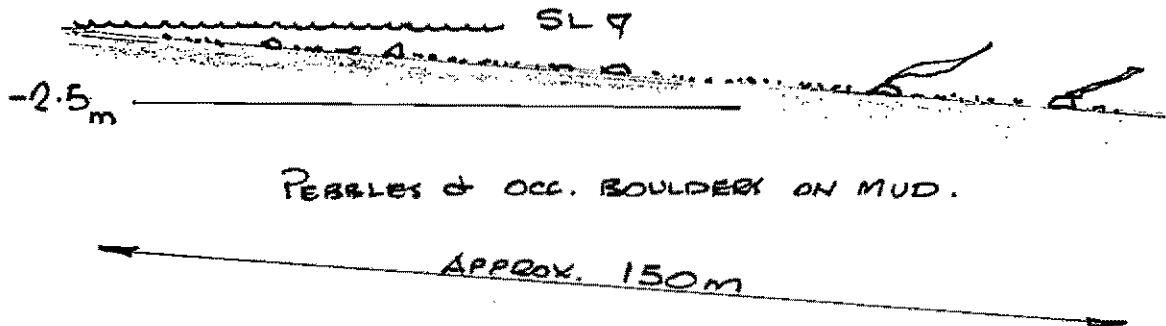
STEVE DEVEREUX
Name of recorder DAVE QUIRK

Date 24.06.89

Dive time 15.00 hrs.

Duration 24 mins.

Description of seabed and marine life.



Marine species noted.

L. saccharina

Calcinas maenas

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 23

SITE NAME W. of CAIRN POINT
STUART DEVEREUX
Name of recorder DAVE QUIRK

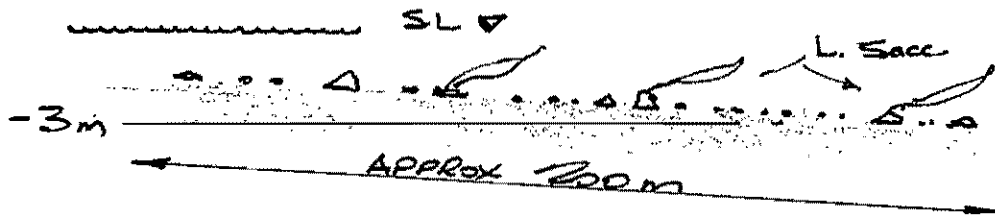
POSITION 54°-58.4'N 05°-02.7'W

Date 24.06.89

Dive time 16:00 hrs.

Duration 15 mins.

Description of seabed and marine life.



PEBBLES & OCC. BOULDERS ON MUD.

Marine species noted.

L. saccharina

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)24.....

SITE NAME...KIRKCOLM POINT

POSITION...54°58'1" N 05°02'7" W

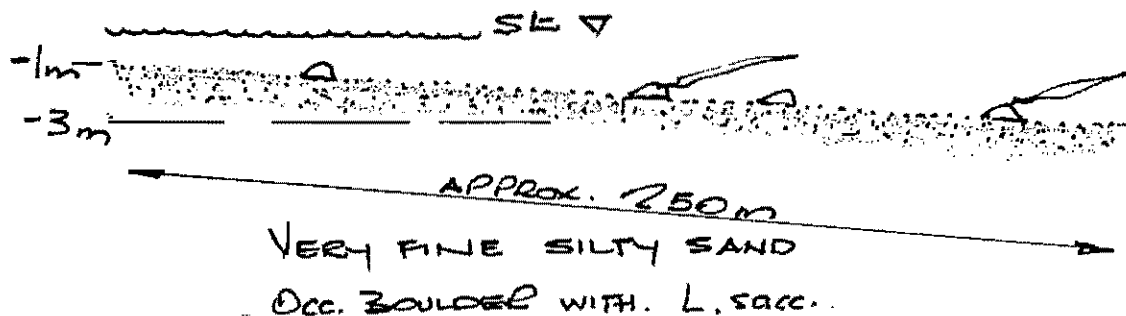
Name of recorder...TONY MITCHELL

Date...25.06.89

Dive time...11:48 hrs

Duration...24 mins

Description of seabed and marine life.



Marine species noted.

L. saccharina

Carcinus maenas

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 25

SITE NAME..... THE WIG

POSITION..... 54°-57'-6" N 05°-03' W

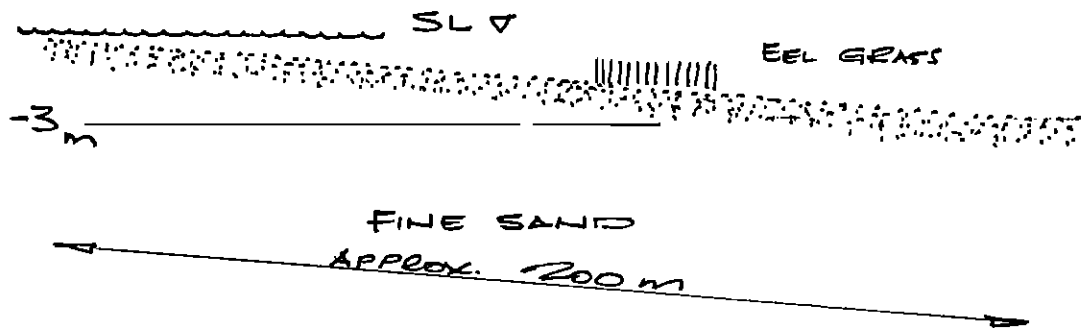
Name of recorder..... STEWART SWAINE

Date..... 15.06.89

Dive time..... 11.35 hrs.

Duration..... 24 mins

Description of seabed and marine life.



Marine species noted.

Zostera (sp)

Philine aperta

HERMIT CRABS

LOCH RYAN

SOUTH WEST SCOTLAND

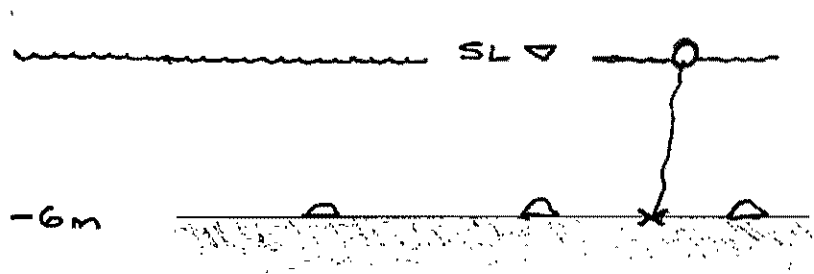
SURVEY SITE NUMBER:- (see map) 26

SITE NAME..THE WIG BAY..... POSITION. 54°-57'N 05°-03.4'W

Name of recorder..RON CROSBY..... Date..24.06.89.....

Dive time.....17.10 hrs..... Duration.....15 mins.....

Description of seabed and marine life.



THICK STIFF MUD. OCC. BOULDER.
BOAT MOORINGS & CHAINS.

Marine species noted.

BARNACLES ON CHAINS
HERMIT CRABS
Ostrea edulis

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 27

SITE NAME. ST. MARY'S CROFT...

POSITION. 54° 56' 8" N 05° 03' 9" W

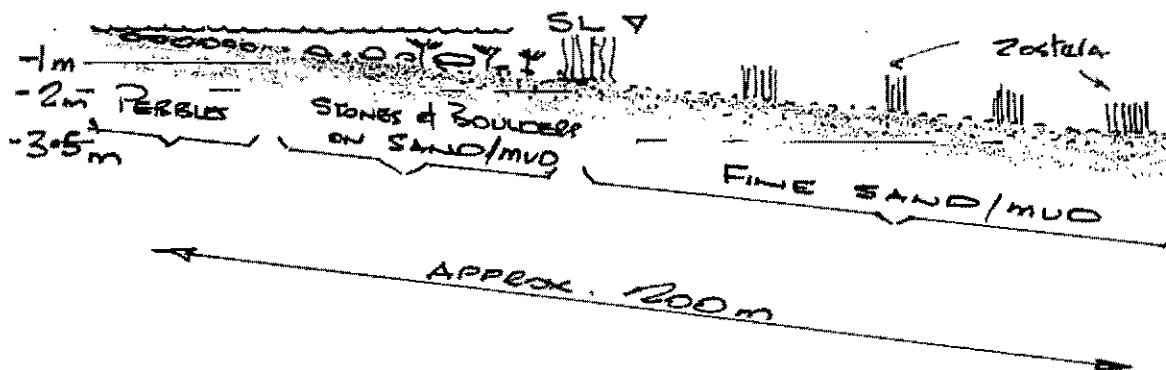
Name of recorder. RON CROSBY
JOHN BUSHBY

Date. 24.06.89

Dive time. 18.10 hrs.

Duration. 35 mins

Description of seabed and marine life.



Marine species noted.

- Zostera (sp)
- Chorda filum
- Sabella pavonina
- Arenicola marina
- HERMIT CRABS
- BALNAICLES
- WRACKS.

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 28.....

SITE NAME W. SIDE OF THE SPIT.....

POSITION 54° 57' N 05° 02.2' W.....

Name of recorder STUART DEVEREUX.....

Date 25.06.89.....

Dive time 11.42 hrs.....

Duration 12 mins.....

Description of seabed and marine life.



MEDIUM / FINE MUDDY SAND
WITH SOME STONES

APPROX. 150 m

Marine species noted.

L. saccharina

Zostera (sp).

Arenicola marina

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 29

SITE NAME.. E. SIDE OF THE SPIT.

POSITION. 54° 57.3' N 05° 01.8' W

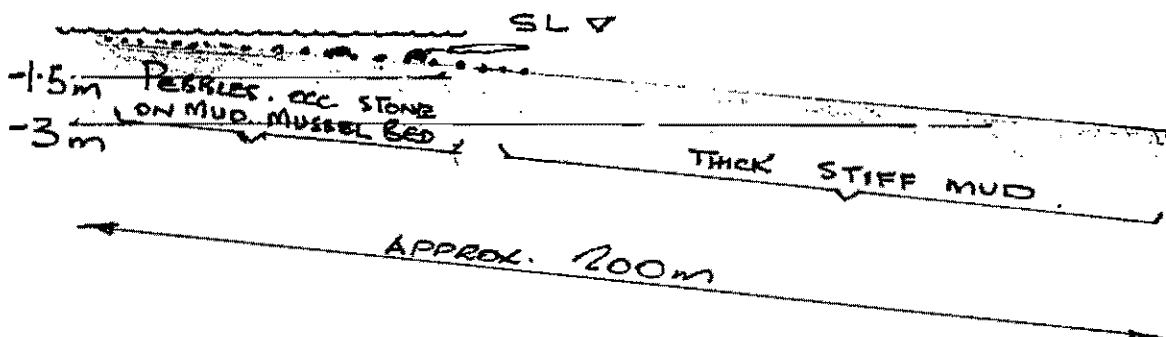
Name of recorder. STEVE LAINSON

Date. 24. 06. 89

Dive time..... 16.30 hrs

Duration..... 20 mins

Description of seabed and marine life.



Marine species noted.

L. saccharina

HERMIT CRABS

Mytilus edulis

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)30.....

SITE NAME...BANKHEAD.....

POSITION...54° 57.5' N 05° 00.6' W

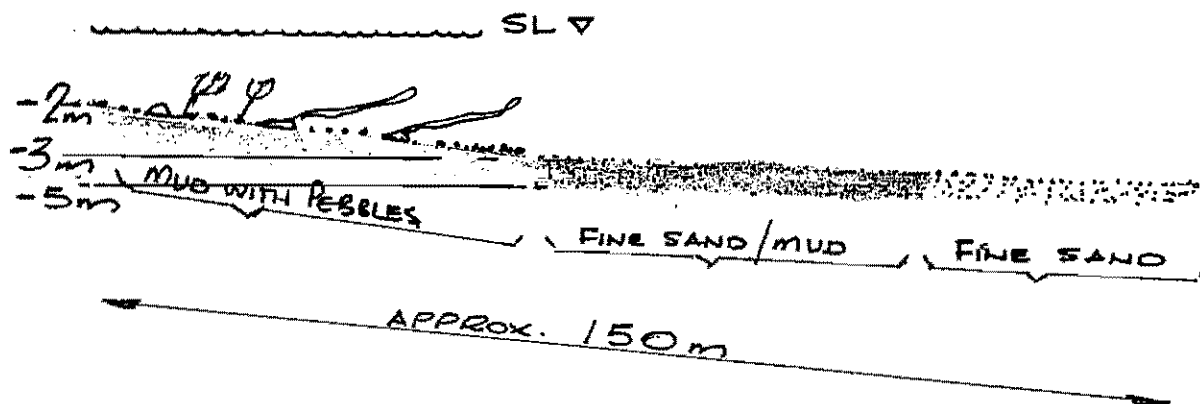
Name of recorder...MARK WOOMBS

Date...24.06.89

Dive time...18:00 hrs.....

Duration...20 mins.....

Description of seabed and marine life.



Marine species noted.

L. saccharina

L. hyperborea

HERMIT CRABS

Macropodia tenuirostris

Cerianthus lloydii

Myxicola infundibulum

Pomatoschistus pictus

LOCH RYAN

SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map)31.....

SITE NAME...W. of DRUMMUCKLOCH... POSITION...54°-57.2' N-05°-01' W

Name of recorder...MARK WOOMBS... Date...24.06.89

Dive time...17.00 hrs... Duration...12 mins

Description of seabed and marine life.

~~~~~ SL ▽

-4<sub>m</sub> - \_\_\_\_\_

FLAT MUDDY SAND.

Marine species noted.

HERMIT CRABS.

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) ..... 32 .....

SITE NAME... LEFFNOLL .....

POSITION... 54° 56.9' N, 05° 00.6' W

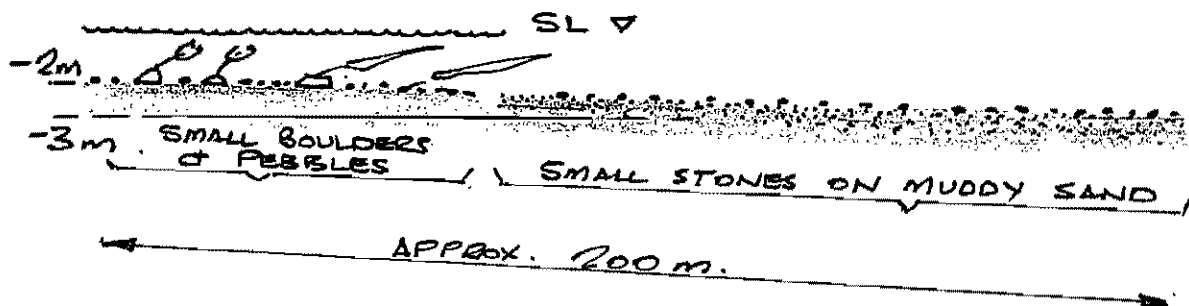
Name of recorder... STEVE LAINSON .....

Date... 24.06.89 .....

Dive time..... 18:30 hrs. ....

Duration... 22 mins ...

### Description of seabed and marine life.



### Marine species noted.

*L. hyperborea*

*L. saccharina*

ENCrustING PINK ALGAE

HERMIT CRABS.

*Carcinus maenas*

*Liocarcinus depurator*

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) ....33.....

SITE NAME. DREDGED CHANNEL

POSITION. 54°-55'-8" N 05°-01'-5" W

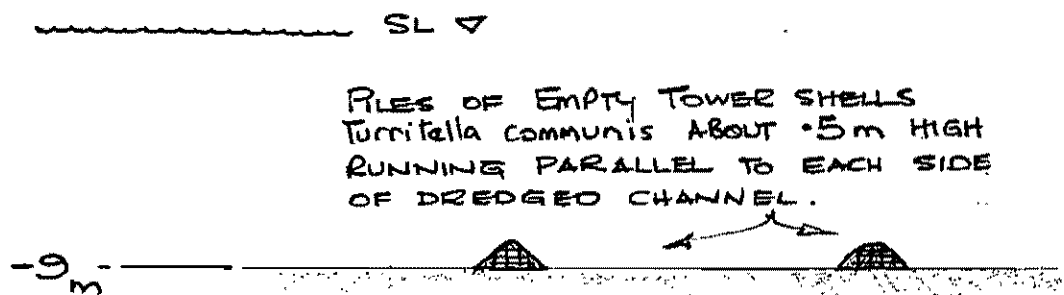
Name of recorder. STEVE LAINSON

Date. 25.06.89

Dive time. 13:25 hrs.

Duration. 20 mins.

### Description of seabed and marine life.



HARD PACKED MUD.

(MIDDLE OF DREDGED CHANNEL)

### Marine species noted.

NOTHING LIVING.

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) .....34.....

SITE NAME..E. of SOLEBURN.....

POSITION..54°55.9'N 05°02.8'W.....

Name of recorder..JOHN SMILLE.....

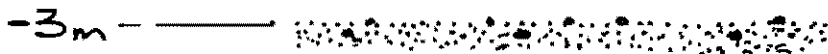
Date..25.06.89.....

Dive time.....12.05 hrs.....

Duration.....12 mins.....

### Description of seabed and marine life.

..... SL ▽

-3m - ———— 

FLAT SOFT SAND, SOME VERY  
SMALL STONES.

### Marine species noted.

Ulva lactuca

HERMIT CRABS

JUVENILE FLATFISH



# LOCH RYAN

## SOUTH WEST SCOTLAND

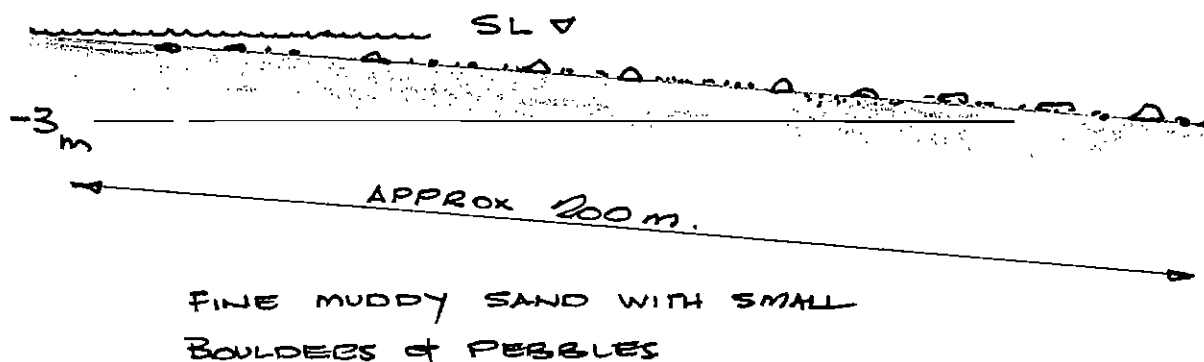
SURVEY SITE NUMBER:- (see map) .....35.....

SITE NAME. HILLHEAD OF CRACHMORE POSITION. 54°-55.7'N 05°-03.5'W

Name of recorder. SUE THORNLEY Date. 25.06.89

Dive time.....12:36 hrs..... Duration.....27mins.....

### Description of seabed and marine life.



### Marine species noted.

#### SPONGES

*Liocarcinus depurator*

*Sabella pavonina*

*Ulva lactuca*

*Carcinus maenas*

SMALL JUVENILE FLAT FISH

HERMIT CRABS

*Cerianthus lloydii*

# LOCH RYAN

## SOUTH WEST SCOTLAND

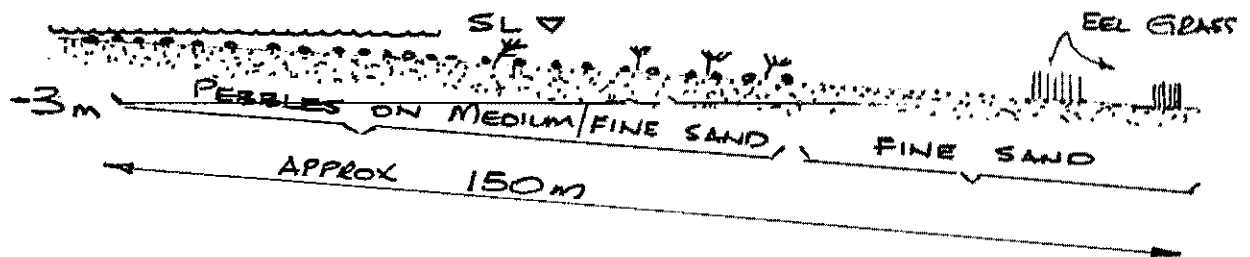
SURVEY SITE NUMBER:- (see map) .....36.....

SITE NAME...BROADSTONE..... POSITION...54°-55:2'N 05°-02:6'W.....

Name of recorder...STUART DEVEREUX..... Date...25:06:89.....

Dive time...12:05 hrs..... Duration...20 mins.....

### Description of seabed and marine life.



### Marine species noted.

Zostera (sp)  
Sabella pavonina  
L. saccharina  
Carcinus maenas  
Liocarcinus depurator  
Mytilus edulis  
RED ALGAE ON STONES  
HERMIT CRABS  
Pecten maximus  
Clavelina lepadiformis

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) .....37.....

SITE NAME W. of ROCK Mc GIBBON

POSITION 54°-55.6' N 05°-00.7' W

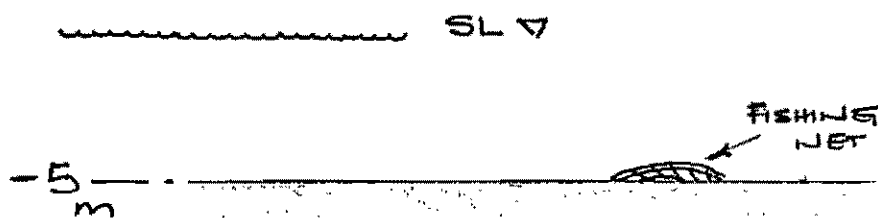
Name of recorder STEVE LAINSON

Date 25.06.89

Dive time 13.00 hrs

Duration 15 mins

### Description of seabed and marine life.



FLAT STIFF MUD. SOME DEBRIS.

(FISHING NET WITH MARINE LIFE)  
ALSO FERRY RUBBISH, PLASTIC CUPS ETC.

### Marine species noted.

Sabella pavonina

Virgularia mirabilis

Metridium senile

Turritella communis

HEMITE CRABS

ANEMONES.

Myxicola infundibulum

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) ....38.....

SITE NAME...BEACH BURN.....

POSITION...54°-56'4"N 05°-00'W

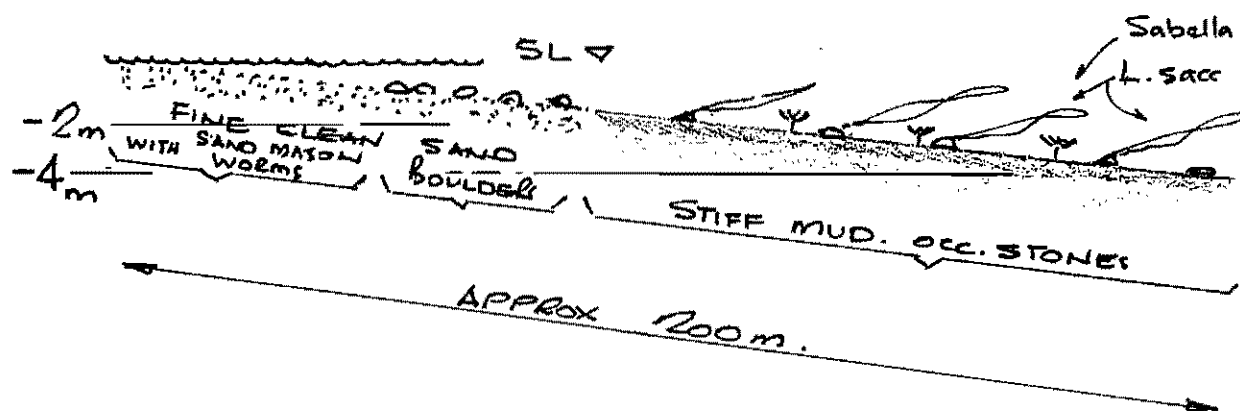
Name of recorder...RON CROSBY.....

Date...25.06.89.....

Dive time...11.50 hrs.....

Duration...25 mins.....

### Description of seabed and marine life.



### Marine species noted.

*L. saccharina*  
*Sabella pavonina*  
*Myxicolla infundibulum*  
*Lanice conchalega*  
*Carcinus maenas*  
*Buccinum undatum*  
*Halichondria panicea*  
*Mytilus edulis*

# LOCH RYAN

## SOUTH WEST SCOTLAND

SURVEY SITE NUMBER:- (see map) 39.....

SITE NAME...INNER MESSAN.....

POSITION 54°-55.5'N 04°-59.6'W

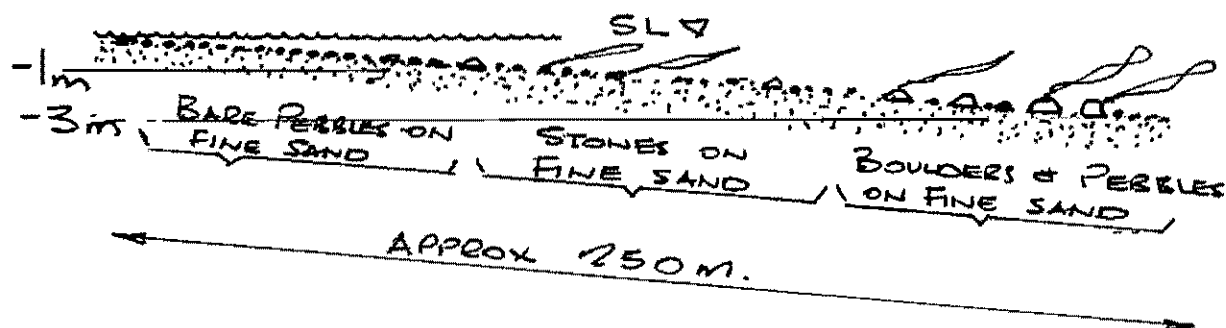
Name of recorder...RON CROSBY.....

Date...25.06.89.....

Dive time...12.40 hrs......

Duration...25 mins......

### Description of seabed and marine life.



### Marine species noted.

*L. saccharina*

ENCrustING PINK ALGAE.

*Halichondria panicea*

HERMIT CRABS

*Carcinus maenas*