

SUMMARY REPORT OF THE MARINE CONSERVATION SOCIETY'S DIVING WORKING PARTY TO LUNDY, 10-15 AUGUST 1997

By

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INTRODUCTION

During a five day visit to Lundy from 10-15 August 1997, a party of eleven volunteer divers, all members of the Marine Conservation Society (MCS), undertook a number of sublittoral nature conservation projects within the Marine Nature Reserve (MNR). The projects were decided upon in consultation with English Nature (Peterborough), the country agency responsible for the management of the MNR, and the MNR Warden, Liza Cole. This has added to the work started in 1995 and continued in 1996 by other MCS groups of divers (see Irving *et al.* 1995 and Irving 1996). The divers were of mixed diving experience (though all were of sports diver grade or above), and of mixed marine biological expertise. The trip was organised as part-working party and part-holiday. Volunteers were given the opportunity to learn certain underwater survey techniques whilst making a positive contribution towards the effective management of the MNR.

Sites visited were mostly off the island's east coast, though visits were made to the west coast on two days when the sea was sufficiently calm to allow this to happen. Diving operations were carried out from the DSV *Datchet*, which also accommodated the entire group, and from the Warden's RIB. This paper is a summary of the main expedition report (Irving & Northern 1998), a copy of which resides with the Lundy Field Society.

PROJECTS

The eight projects undertaken by the group are summarised below.

1. SETTING NEW UNDERWATER DATA LOGGERS

Two types of sealed units which can record sea water temperature and depth variations over a period of 10-12 months were set on the wreck of the MV *Robert* and also on a mooring chain in the Landing Bay. The units take readings every 4-6 hours. At the end of the recording period, the data are downloaded into a lap-top computer, re-set and re-positioned. The acquisition of accurate sea water temperature data will be important in helping to understand what triggers the release of larvae from slow-growing, long-lived species such as cup corals.

2. RE-PHOTOGRAPHING THE CIRCALITTORAL 'CAVE' COMMUNITY AT THE KNOLL PINS

The Knoll Pins, located just north-east of Tibbetts Point on the east side of the island, is the richest site on Lundy for Mediterranean-Atlantic species of high nature conservation interest.

In particular, there are large numbers of the rare yellow cup coral *Leptopsammia pruvoti* and also of the Devonshire cup coral *Caryophyllia smithii* at one location in a canyon between two of the Pins. This site was first photographed for monitoring purposes in 1983 and has been re-photographed on a number of occasions since. A further set of close-up photographs was taken of the site on 12 August 1997, prints of which were made into a photo-mosaic. However, no attempt was made to analyse the numbers or size of the cup corals present.

3. CHECKING FOR BORING BY PHORONID WORMS AROUND THE BASES OF CUP CORALS

The coralla (skeletons) of cup corals provide one of the few sources of material (in this case calcium carbonate) within Lundy's coastal waters that can be bored into by phoronid worms. These worms, commonly called horseshoe worms because of the shape of their feeding tentacles, are very small (~1 mm in diameter and ~10 mm long) and are able to bore into the base of cup coral coralla. This action is thought to weaken the attachment of the coral to the rock: several dead coral coralla have been found at the foot of vertical rock on which live specimens of these corals are found. We were particularly interested in those of the rare yellow cup coral *Leptopsammia pruvoti*, as numbers of these corals appear to have been declining at monitoring sites since 1984. As a result of our studies, we were able to confirm the presence of phoronid worms around the bases of several *Leptopsammia* corals at both the Knoll Pins and Gannets' Rock. A number of dead coralla were also found on the sea bed.

4. ATTEMPTING TO RE-LOCATE THE (NEW) YELLOW CUP CORAL SITE OFF THE WEST COAST

The remote acoustic survey and drop-down video survey of sublittoral habitats around the island which took place in July 1996 (as reported in last year's report by Gilliland 1996), confirmed the presence of *Leptopsammia* at a site off the west coast. This was somewhere between Battery Point and Dead Cow Point at about 24 m below mid tide level. Unfortunately, our searches were unsuccessful in relocating this site – it is hoped we might be able to repeat the search next year.

5. DESCRIBING THE SEA BED TOPOGRAPHY AND BENTHIC COMMUNITIES ON A 'RISE' TO THE NORTH OF THE GANNETS' ROCK PINNACLE

Distinct raised areas of sea bed have been recorded in the past from echo soundings taken in the vicinity to the north of Gannets' Rock pinnacle. One of these mounds was investigated by our team, who undertook to record the main habitats and benthic communities present using Seasearch recording methodology. The west side of the mound (rising to the shore) proved to be a gently sloping gravel bank, while the north, east and south sides were more abrupt with rocky cliffs and boulders. We were pleased to find further colonies of *Leptopsammia* here, not previously recorded, together with other Mediterranean-Atlantic species such as red sea fingers *Alcyonium glomeratum* and the zoanthid anemone *Parazoanthus axinellae*.

6. ASSESSING THE DENSITY OF 'DELICATE' ERECT SPECIES BETWEEN QUARRY BAY AND GULL ROCK

Several counts of 'delicate' erect species (ie. erect sponges such as *Axinella dissimilis*, *Raspailia ramosa* and *Stelligera rigida*; the sea fan *Eunicella verrucosa*; and the Ross coral *Pentapora foliacea*) were undertaken at the boulder/mud plain interface off the central section of the east coast. The purpose of this was to get a better idea of the density of these organisms

in this area, particularly as potting, which may damage these species, is still allowed here. Three separate 10 m x 10 m rope quadrats were laid out on the sea bed, about 150 m apart, between the northern end of Quarry Bay and Gull Rock. The eastern side of the quadrat was laid parallel to the interface and as close as possible to it. Counting of all erect sponges, sea fans and Ross corals within these quadrats gave mean densities of: 14.3 /10 m², 0.32 /10 m² and 2.2 /10 m² respectively. The site closest to Gull Rock provided the highest densities of erect sponges (24.3 /10 m²), sea fans (0.5 /10 m²) and Ross corals (6.6 /10 m²).

7. CHECKING THE CONDITION OF RANDOMLY-SELECTED SEA FANS, AND FOR THE PRESENCE OF THE NUDIBRANCH *TRITONIA NILSODHNERI*

Wherever sea fans *Eunicella verrucosa* were encountered during dives, they were measured and a note of their condition was recorded. This continued a similar project begun in 1995. Many fans were found to be overgrown with drift weed, mermaid's purses and other organisms. Several fans (about 1 in 20) were found to have the cryptic predatory nudibranch *Tritonia nilsodhneri* on them. Unfortunately, with most dives being undertaken off the east coast, few sea fans were inspected off the west coast, which had been the original intention.

8. NOTING THE MAXIMUM DEPTH OF THE KELP *LAMINARIA HYPERBOREA* AT ALL DIVE SITES

The maximum depth of *Laminaria hyperborea* recorded at the Knoll Pins (from where previous records had been taken) was 8.1 m below chart datum. This is the same as the average figure for annual readings taken between 1985-87.

In addition to the above tasks, the group had the pleasure of snorkelling with grey seals and basking sharks. Two divers even saw a turtle in mid-water on a dive off Gull Rock – I think all parties were so surprised at the other's presence that no attempt was made at a more accurate identification!

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