

## A re-assessment of rocky sublittoral biota at Hilsea Point Rock after fifty years

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A re-assessment of the rocky sublittoral biota at Hilsea Point Rock in south Devon, UK was undertaken 50 years after the first descriptive surveys. The overall appearance of the fauna and flora in 2003 was much as described in the 1950s but with some species not re-found in 2003 and some species added to the lists from the 1950s.

In 1953, G.R. Forster commenced a series of underwater observations at locations around Plymouth using the then novel self-contained underwater breathing apparatus (SCUBA). The first report was of the submerged fauna of Hilsea Point Rock (then known as 'Stoke Point Rocks'): a pinnacle reaching to within about 2 m of the sea surface and surrounded by extensive reefs and sandy gullies at depths of 20 to 25 m below chart datum level (Forster, 1954). Hilsea Point Rock is located at 50°17.34'N 4°2.70'W, 12 km east of the eastern entrance to Plymouth Sound. The surveys at Hilsea Point Rock were followed by reports from other locations and with more information gathered on Hilsea Point Rock (Forster, 1955, 1958).

The area of Hilsea Point Rock was surveyed by the Devon Wildlife Trust (DWT) and as a part of the Marine Nature Conservation Review of Great Britain (MNCR) at various times between 1993 and 1996. The area has now been re-surveyed during 2003, 50 years after the original surveys.

Observations at Hilsea Point Rock were made on four occasions in 2003 using SCUBA equipment. Recording was of conspicuous easily identified species and was concentrated in the gully described and illustrated in Forster (1954) as well as south and east of the pinnacle. Information collected on 11 May, 6 July and 19 August 2003 was checked against the results of surveys undertaken by the DWT and the MNCR (from [www.jncc.gov.uk/mermaid](http://www.jncc.gov.uk/mermaid)) in the 1990s and from volunteer diver surveys carried out as part of the 'Seasearch' programme in 2003 (C. Wood, personal communication). Results were collated and tabulated against the observations reported in Forster (1954, 1955, 1958). At this point, G.R. Forster was contacted and much useful interpretational information recalled by viewing photographs of the biota taken in 2003. Checks were made in the Plymouth Marine Fauna (Marine Biological Association, 1957) of species identified during recent surveys but not recorded in the 1950s to see if they were known to be present in the Plymouth area at the time of the earlier surveys. The fourth recording event was then undertaken on 11 October 2003 with a list of points to check (species previously present, not yet recorded, and abundances of some species).

The species recorded in the 1950s and their abundance in recent years are presented in Table 1. The general appearance of the flora and fauna is much as recorded and recalled from the 1950s. There were notable absences (*Phallusia mammillata* and *Chartella papyracea*) in 2003 and some new records. The soft coral *Alcyonium digitatum* is not mentioned for Hilsea Point Rock in the

1950s papers but was common in 2003. The species is included in descriptions of other locations in Forster (1958) and it is felt (G.R. Forster, personal communication) that the species was almost certainly present but not so abundant in the 1950s as in 2003 or as abundant as red sea fingers, *Alcyonium glomeratum*, were in 1953. Other species not mentioned for 1950s observations but frequent or common in 2003 or surveys in the 1990s are the sponges *Esperiopsis fucorum*, *Axinella damicornis*, *Stelligera rigida* and *Raspailia hispida*, the hydroids *Halecium halecinum* and *Nemertesia antennina*, the fleshy bryozoan *Alcyonidium diaphanum*, the ascidians *Clavelina lepadiformis* and *Diplosoma* spp., and the brown alga *Dictyota dichotoma*. The presence of the south-western species of hydroid *Gymnangium montagu* in 2003 is notable but was only present in one area of the gully. The nationally scarce alcyonacean *Parerythropodium hibernicum* was in a cryptic habitat in 2003 and would have been easily missed in the 1950s. The sea slug *Tritonia nilsohdneri*, which lives only on *Eunicella verrucosa*, was recalled as present in the 1950s having been especially looked for (G.R. Forster, personal communication) and was frequent in 2003. The barnacle *Solidobalanus fallax* found attached to *Eunicella verrucosa* in 2003 appears to be a recent arrival in Britain (Southward et al., 2004) but is a warm water species previously known further south than Britain and so is within its natural biogeographical area. No non-native species were found.

With a minority of exceptions, Hilsea Point Rock was, in 2003, much as it was in 1953. Species recorded in 2003 and in surveys in the 1990s but not mentioned from surveys in the 1950s are most likely ones that were not included in what were very broad descriptions of the character of seabed communities. The apparent absence of the bryozoan *Chartella papyracea* from Hilsea Point Rock area is significant as the species is easily found at the East Rutts, 20 km to the south-south-east and in similar depths. *Phallusia mammillata* is commonly found in Torbay and rarely in Salcombe Harbour but has not been recorded further west by the author during extensive diving. Whether it was adversely affected by an event such as the 1962–1963 cold winter and has not re-colonized is not known. *Cliona celata*, which was extensively blackened and apparently dead after the 1962/1963 winter (G.R. Forster, personal communication) was, in 2003, present in what appear to be a similar abundance compared to 1953.

I am grateful to Bob Forster who has discussed my conclusions and looked at my photographs to recall as much as possible of the way things were in the 1950s. I am grateful to a variety of dive

**Table 1.** Species recorded in the 1950s at Hilsea Point Rock and abundance in 2003. Records are taken mainly from Forster (1954) but also from Forster (1955, 1958). Bcd = below chart datum.

Species	Notes on abundance and location in the 1950s	Notes on abundance and location in 2003. Comments
<i>Laminaria hyperborea</i>	Extends to 10 fathoms (60 feet/18 m). Sparse below 50 feet (15 m).	Mixed <i>Laminaria hyperborea</i> and <i>Saccorhiza polyschides</i> forest; latter to 14 m bcd in 2003.
<i>Halopteris filicina</i>	Thin carpet. Replaces <i>Delesseria</i> at about 55 feet.	Frequent in 2003.
<i>Dictyopteris membranacea</i>	Replaces <i>Delesseria</i> at about 55 feet. 'Fades out' at 25 m (1955 paper).	Abundant to 17.5–20 m bcd, 'thin' at 21 m bcd in 2003.
<i>Delleseria sanguinea</i>	Becomes abundant when kelp becomes sparse.	Dominant (with <i>Desmarestia</i> spp.) at 11 m bcd.
<i>Cliona celata</i>	Present below 55 feet. Roughly two per 10 m <sup>2</sup> .	Similar in 2003.
<i>Pachymatisma johnstonia</i>	Below 55 feet.	Occasional in 2003. No large colonies.
<i>Dercitus bucklandi</i>	In crevices in nearby gulley (reported in 1958 paper).	Two found in fissures in the main gulley in 2003.
<i>Axinella dissimilis</i>	Occasional.	Similar in 2003. Most abundant to the west and east of the gulley.
<i>Hemimycale columella</i>	In nearby gulley (reported in 1958 paper).	Occasional in 2003.
<i>Mycale macilenta</i>	In nearby gulley (reported in 1958 paper).	One large colony found in 2003.
<i>Antho involvens</i>	One small patch in nearby gulley (reported in 1958 paper).	One patch near the main gulley in 2003.
<i>Encrusting sponges</i>	Some on gulley walls.	Present. Recorded by the MNCR as common.
<i>Sertularella gayi</i>	A few colonies in the gulley.	Occasional.
<i>Eunicella verrucosa</i>	Appear at around 65 feet. Maximum of very roughly 2–4/m <sup>2</sup> in the gulley 1–10 feet above the bottom. Roughly 3 colonies per 10 m <sup>2</sup> (1955 paper)	Very similar in 2003 photographs.
<i>Alcyonium glomeratum</i>	'Almost as numerous as <i>Eunicella</i> '.	Several colonies seen in dive 12.5.03 but not 'Almost as numerous as <i>Eunicella</i> '.
<i>Corynactis viridis</i>	Many on gulley wall.	Similar in 2003.
<i>Caryophyllia smithii</i>	Present.	Common in 2003.
<i>Epizoanthus wrightii</i> <sup>1</sup>	Occurred frequently, patches of up to approximately 1 m <sup>2</sup> in area.	Present but may be less abundant in 2003.
<i>Filograna implexa</i> <sup>2</sup>	Occasional on gulley wall.	Not found in 2003 or recorded in DWT and MNCR surveys. A common species on rock at the entrance to the Tamar, found at East Rutts and on offshore rocks (Eddystone, Hand Deepes etc.) but not at locations in-between.
<i>Lepralia pallasiana</i> <sup>3</sup>	Occasional colonies.	Occasional small colonies of ross <i>Pentapora fascialis</i> in 2003. <sup>3</sup>
<i>Cellaria fistulosa</i>	Bryozoans especially <i>Cellaria</i> constitute ground cover on gulley walls.	Common in places.
<i>Crisia</i> sp.	Numerous in nearby gulley (reported in 1958 paper).	Common in places.
<i>Flustra papyracea</i> <sup>4</sup>	One of the chief bryozoans on the gulley wall.	Not present in 2003 or recorded in DWT or MNCR surveys.
<i>Echinus esculentus</i>	Appear at 35–40 feet (c. 10–12 m). Illustrated as frequent.	Frequent.
<i>Holothuria forskali</i>	Appear at 35–40 feet (c. 10–12 m). Illustrated as frequent.	Common.
<i>Phallusia mamillata</i>	A few.	None seen. Not recorded in numerous surveys in the past 18 years west of Salcombe Harbour. Recorded at one location in Salcombe Harbour in 1985 and seen in Torbay in 2003 by K.H.
<i>Stolonica socialis</i>	Present. (Drawn as on rock outcrop next to sediment).	Frequent. Possibly more abundant in 2003 and present over the gulley walls.

<sup>1</sup>, Now *Parazoanthus axinellae*; <sup>2</sup>, most likely the very similar *Salmacina dysteri*; <sup>3</sup>, now *Crytosula pallasiana*, a mainly intertidal or shallow sublittoral species, but given the common name 'ross' in Forster (1954) which is the name now used for *Pentapora fascialis* and believed to be that species in 1953; <sup>4</sup>, now *Chartella papyracea*.

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