

Sponge Biodiversity of the Falkland Islands 2009 – initial report
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Sponges are filter-feeding invertebrate animals which are fixed to the seabed, usually on rocky surfaces. They have been recognised as one of the most important components of the Falklands sublittoral fauna. However, as yet, there has been little attempt to survey the sponge fauna of the Falkland Islands or quantify its biodiversity. Until recently the only existing studies on Falkland Island sponges were reports on material collected by the Challenger and Swedish Antarctic Society expeditions (published 1932 and 1934) by Maurice Burton, the then curator of Porifera at the British Museum (now Natural History Museum, London) and a report by Emile Topsent on material collected by the Scotia Antarctic expedition (published 1915). However, Burton and Topsent were working on dredged specimens, predominantly from deeper water, and the shallow water sponge fauna is likely to be different. By collecting using diving we were able to get a record of the *in situ* appearance of the sponges, which for many Falkland species may be the first time this is known.

Claire and Jennifer visited the Falklands in December to work with the Shallow Marine Surveys Group. The Falkland based SMSG exists to survey the inshore marine life of the Falkland Islands, down to 20m, by means of diving surveys. Headed by a core group of experienced biologists and divers and assisted by volunteers from the community they have been collecting, identifying and photographing marine animals since June 2006. The group are also producing an identification guide to the marine life of the Falkland Islands. The group are keen to work with expert taxonomists in order to identify the region's fauna; many of the species present are currently unidentified. Claire and Jennifer first visited the Falklands in October 2008 when they participated in a survey of the Jason Islands on the NW corner of the Falkland Islands. During the 2009 trip the objectives were to participate in a survey to Beauchene Island, 30 miles south of the Falkland Islands, and the Sealion Islands, to the south of the Falkland Islands. This survey area is in a contrasting biogeographic zone to the Jason Islands and is influenced by different water currents, consequently it was expected that sampling here would result in the collection of additional species.

Claire and Jennifer participated with the SMSG on an expedition on the 'Golden Fleece', a liveaboard survey vessel. The trip lasted 10 days, from December 18th-December 28th inclusive. Sponges were sampled using methodology developed during National Museums Northern Ireland projects on sponge biodiversity. Specimens were collected by scuba diving. Each sponge specimen was photographed *in situ*, following this a small piece of the sponge was cut and placed in a ziplock plastic bag. The specimens were then preserved in ethanol. In total 17 sampling dives were undertaken (8 in the Sealion group, 7 at Beauchene, and 2 in other locations) and 203 specimens were collected.

Laboratory work is required to identify the species: this involves the examination of silica skeletal structures which are termed spicules. The specimens will be identified initially to genus level; they will then be compared with existing descriptions to see if they match any known species. Claire and Jennifer are currently identifying the species collected and hope to finish this by June 2010. Photos and descriptions will

form the basis of a sponge chapter in the Falklands Marine Life ID book. The results will also be published in scientific journals.

The visit allowed Claire and Jennifer to work with member of the SMSG on a paper on the Jason Islands sponges, the product of the survey work carried out last year. The paper is now in the final stages and will be submitted to the 'Journal of the Marine Biological Association of the United Kingdom' soon. The paper describes 14 new species and provides information on the appearance and distribution of an additional 6 poorly known species.

Training on sponge ecology and identification was provided to 30 Year 8 school children at the local secondary school in Stanley. Two hour long science classes introduced pupils to sponge biology and ecology and gave them an introduction to the taxonomic process by giving them the opportunity to extract and observe sponge spicules and describe a sponge. A public talk on Claire and Jennifer's work in the Falkland Islands giving an update on the progress from last year's work was given at the Chamber of Commerce, approximately 50 people attended.

Claire and Jennifer will continue to work on the samples collected from both trips and hope to return to the Falklands for additional sampling in the future. They are currently compiling the sponge section of SMSG's marine life ID guide for the Falkland Islands. A grant application has been put in, in conjunction with the Shallow Marine Survey's Group to the Overseas Territory Environmental Fund. This is for a three year project surveying the shallow marine biodiversity of the Falkland Islands (continuing their current OTEP grant). The project would focus in particular on sponge and algal biodiversity and part of the funding would pay 20% of Claire's salary, enabling her to continue work on Falkland Island sponge taxonomy. The application has been successful in the first round of the application process and a final decision will be made in February. This application would not have been possible without the initial collaboration supported by the Shackleton Scholarship Fund grants in 2008 and 2009.

Associated Publicity

A press release was circulated by the JPR press agency, on behalf of the museum.

This resulted in some local coverage in Northern Ireland:

9th December – Belfast Telegraph

BBC NI News on Ceefax –December

In the Falkland Islands:

Short article in Penguin News – December 2009

Interview for 'Conservation Conversations' for Falkland Island Radio Service – December 2009.

Talks

National Museums Northern Ireland, 2nd February 2010 – talk for staff

Ballyholme Yacht Club, 24th February 2010 – talk part of series held in yacht club, open to all, will be advertised in local press.



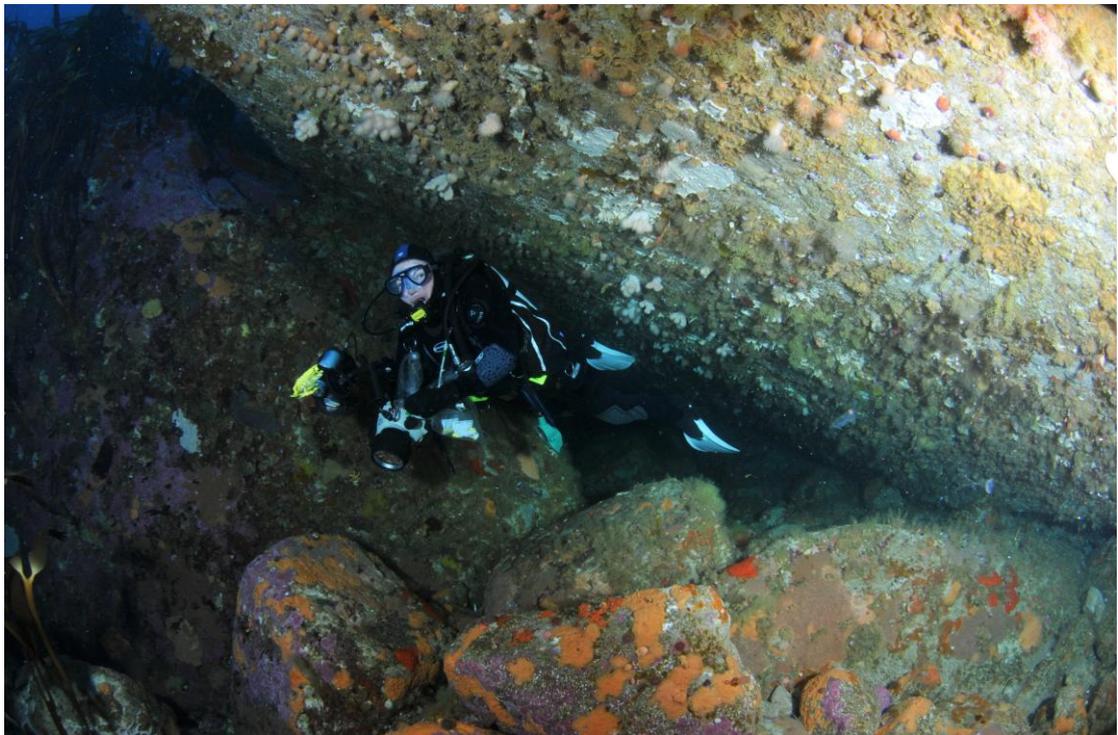
The expedition vessel, the 'Golden Fleece', off Beauchene Island. Image Alastair Wilson.



The expedition vessel, the 'Golden Fleece' off Beauchene Island, taken from the cliffs above. Divers have just surfaced from a dive. Image Alastair Wilson.



Jennifer Jones sampling off Beauchene Island. The large boulder is covered in encrusting sponges.



Jennifer Jones sampling off Beauchene Island. Unusual sponge species can be found in caves such as this one.



An unidentified sponge. This distinctive species was not recorded on the previous sampling trip.



An unidentified sponge. This distinctive species was not recorded on the previous sampling trip.



Claire provides training on sponge taxonomy to Year 8 school children.