Algal depth limits: Project description

CSP1	Description	Priority: Medium
Title:	**Algal depth limits - measuring the maximum depths of types of algae (seaweeds)**	
Overall aim:	To provide an indication of the overall water clarity/turbidity of the waters around the island in the long term (years if not decades).	
Justification:	This is one of the physical attributes of the Special Area of Conservation. However, water clarity (as we all know) can vary considerably from season to season, day to day or even hour to hour. It can alter as a result of stormy weather, or as a result of an inflow of 'murky' water, or from run-off from land after a heavy rainfall event. Over long periods of time however (meaning years or even tens of years), the fluctuations should even out with an overall trend becoming apparent.	
Background:	Records of algal depths were begun in 1984 and have taken place spasmodically since. No conclusions have been drawn from the data collected to date as yet.	
Methodology:	Divers are asked to note the depths of the deepest algae they come across, particularly when descending into deeper water (or ascending from deeper water into shallower) following a drop-off or a steeply sloping rocky seabed. The particular types of algae we are interested in are: (1) **the deepest individual kelp plant** (*Laminaria* spp.) - this will define the deepest extent of the "kelp park"; (2) **the deepest individual 'bushy' (or foliose) brown alga**; and (3) **the deepest individual red alga** - this defines the shallowest extent of the lower circalittoral zone, where marine life is restricted to animal species only. Each time one such individual seaweed in encountered, your diving computer (showing the depth in large figures) needs to be held against the seaweed in question (or the holdfast if it's a kelp) and then the depth noted on your slate, alongside the type of alga you have encountered. Ideally, if you have a camera with you, take off your computer and place it beside the individual seaweed before taking a photograph of the alga and the computer. After your dive, please submit the photograph to the Lundy Warden (warden@lundyisland.co.uk) stating the project name, what site your photo was taken at and the date/time of your dive (so that the tidal height can be subtracted from the recorded depth to find the 'depth below chart datum'.	
Competency:	Observer level and above.	
No. of people & equipment:	Can be undertaken by one diver of a pair, whilst the buddy is doing something else (such as taking photographs). Minimal equipment is needed: just a writing slate, a diving computer and, ideally, an underwater camera. By taking a photo of the seaweed in question, it should be possible to identify it.	
Special skills/training?	No. Recognition of the main types of seaweed is expected (browns and reds), although identification of species is not required.	
Previous data?	Yes. Records have been taken on a spasmodic basis since 1984.	
Condition Assessment task?	Yes. Water clarity is one of the physical parameters which is being measured as part of the SAC's condition assessment. This is undertaken at least once every 6 years by Natural England (or their contractors). Various feature and sub-features of the SAC are monitored and may be rated as "in favourable condition", "in unfavourable condition", or somewhere in the middle! The last assessment carried out concluded that all features of the SAC were in favourable condition except for the sub-feature of 'communities on sheltered vertical and overhanging subtidal bedrock' which was assessed as in unfavourable condition, largely due to the declining population of sunset cup corals found in this habitat.	
Special permissions required?	No, as no sampling of any marine life will be being done.	
Updated:	v1 Jun25	

This is an example of the photograph which should accompany your record. The red seaweed (assessed as being the deepest seen in the vicinity) lies just to the upper left of the dive computer screen. The depth is recorded as 29.1m.