



Stereo-Video-System (SVS) User Manual

Part II: Data Collection

Survey Design

- Surveys are conducted along 50m transect lines. Where possible, data should be collected from the reef flat, crest and slope (this will not be possible at all sites due to topographical restrictions).
- The reef crest is identified as the point at which the reef begins to drop away, the reef flat is the area located behind the crest towards the shore, and the reef slope is the area of the reef with the steepest gradient.
- Three 50m transects should be completed at every reef location (i.e., flat, crest and slope), making a total of nine transects per site. Due to variation in topography, the exact depths and number of transects may differ between research sites – please speak to the head scientist at your site for further details.
- A minimum distance of 10 metres should be left between consecutive transects.

Materials

- 1 x stereo-video system
- 2 x GoPro cameras with SD cards. See 'Camera Instructions' doc for camera settings. Cameras must be labelled as left and right and loaded into the correct side of the system every time.
- 1 x 50m transect tape.

Survey Method

- A minimum of two divers is required to complete a stereo-video survey. Diver 1 is responsible for data collection and Diver 2 is responsible for ensuring the transect depth and distance.
- At the correct survey depth, Diver 2 attaches the loose end of the transect tape to the reef, marking the start of the transect. This can be done by tying it to a non-living structure, or by weighing it down with a 2lb dive weight.
- Diver 1 holds the SVS and turns on the camera. Diver 2 hovers in front of the SVS and flashes torch three times.
- Diver 1 points the SVS down towards the reef and moves to the transect start point.
- When ready Diver 1 lifts the SVS, pointing the cameras straight ahead, and begins swimming at a steady pace approx. 50-100cm above the reef. The contour of the reef should be followed, and depth maintained with an error of no more than $\pm 0.5\text{m}$.
- Diver 2 follows Diver 1 while reeling out the transect tape and watching the depth and distance travelled.
- At 50m, Diver 2 tugs on the fin of Diver 1 to signal the end of the transect. Diver 1 points SVS back down towards reef and stops recording.
- A single survey should take approximately 4-6 minutes to complete.

After the Dive

- After every dive (if possible), the batteries should be removed from cameras and charged.
- The reef monitoring project produces lots of videos, so it's important these are uploaded regularly and saved with appropriate labels to avoid confusion. This should be done after every dive, if possible.
- Left and right videos should be uploaded every day and saved with appropriate labels to avoid confusion. The label structure is as follows: Site-Depth-Transect-Date-Left/Right.
- For example, the first transect completed on the Slope of Buoy 3 on 1st June 2020 would produce two videos: B3-S-1-01-06-20-L and B3-S-1-01-06-20-R.
- Please watch the first few videos through to ensure the filming technique is good. The videos should capture a 5x5m box that extends 2.5m to either side and 5m above the reef (see below figure). If the cameras are too low, too high, or too close to the reef the survey area may not be fully covered, and the survey must be repeated.

