Supplement Captions and descriptions

S1 Fig. Engineering rendition of the Drifting In Situ Chamber (DISC).

To save space, the full length of the line and the bottom half of the drogue are not represented.
doi:10.1371/journal.pone.0144060.s001
(PDF)

S1 Video. Excerpt from a video shot while following a group of about 17 larvae during a test run (1 min 30 s), in open waters off Lizard Island.

Larvae start as a small ball-shape shoal and quickly spread along the horizontal to take the typical shape described in Fig 2. At the 1:10 mark, one larva begins to lag behind the rest of the group before finally moving out of the frame. Video by C. Paris and R. Paris, November 2013. https://dl.dropboxusercontent.com/u/1047321/group-following-SI2.mp4.
doi:10.1371/journal.pone.0144060.s002
(MP4)

S2 Fig. Distribution of within-run mean bearings relative to the direction of the coast (left) and distributions for groups shown in their geographical context (right).

Each dot represents one observation run. When orientation is significant ($p<0.05$, in the corner of panels), the radius in the centre is in the mean direction of orientation and its length represents the precision of orientation (across-runs r). Individuals do not display significant orientation. Groups on the west side of the island swim to the right of the coast (i.e. south). Groups on the east side of the coast swim to the left of the coast (i.e. south again). This suggests a cardinal, southward, orientation rather than an orientation relative to the coast.
doi:10.1371/journal.pone.0144060.s003
(PDF)

S3 Fig. Distribution of within-run mean bearings relative to the direction of the sun (i.e. the sun's azimuth).

Each dot represents one observation run. The concentration of mean bearings (across-runs r) and its significance (Rayleigh's p) are indicated in the corner of each panel. When orientation is significant ($p<0.05$), the radius in the centre is in the mean direction of orientation and its length represents the concentration of mean bearings, i.e. the precision of orientation (across-runs r). Individuals in the DISC do not display significant orientation. Followed individuals and groups orient towards the sun. Bearings are more concentrated relative to the sun than relative to a cardinal direction (compare values of r with Table 1) and the mean direction is more consistent among treatments and techniques (compare the direction of the radii with Fig 4). This suggests that larvae use the sun as an orientation cue.
doi:10.1371/journal.pone.0144060.s004
(PDF)

S4 Fig. Strength of directionality (within-run *r*) as a function of sun elevation (zenith angle).

Each point is an observation run. Lines are beta regression predictions (solid when significant, dashed when not). Shaded areas represent the inter-quartile range for the

regression line. In the DISC, where *r* values are more variable [29], *r* significantly increases when the sun is lower in the sky (larger zenith angle) and its direction is easier to detect.
doi:10.1371/journal.pone.0144060.s005
(PDF)

S1 Data. Data of the study.

as a Comma Separated Values (`.csv`) file. Columns are described in the first 20 lines. Column names are at line 21. Data starts at line 22.
doi:10.1371/journal.pone.0144060.s006
(CSV)