

Fig. S1. Picture of the two-choice flume used in the present experiment. This flume was equipped with a starting shelf, covered with sand (i.e., “Beach”), which aimed to simulate the environment that hatchlings face before reaching the sea. To reduce potential aerial chemical interferences (e.g., airborne odours), the flume’s channels were covered by a removable glass cover (in this picture, this cover is partly opened). The flume’s walls were covered with opaque dark blue paper to minimize external lateral visual cues. Each of the two seawater plumes flowed through either the left or right channel (randomly chosen at the onset of testing); to control for a side bias, the testing procedure was repeated after reversing the side in which each of the seawater plumes flowed.

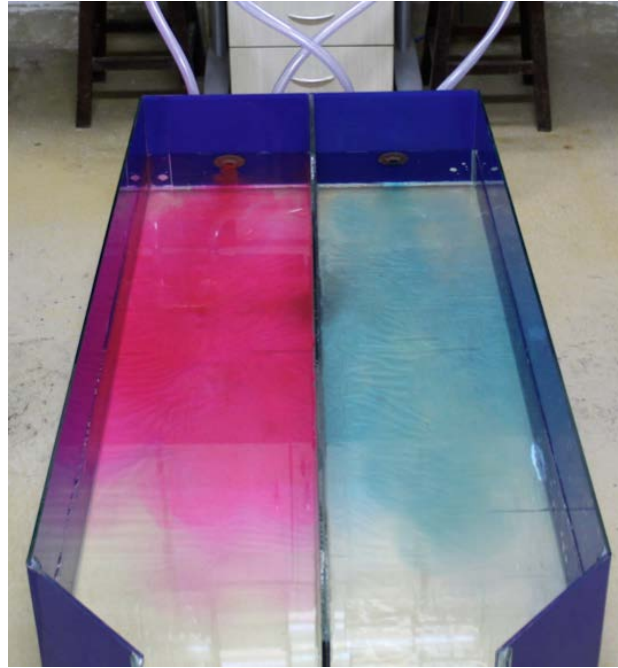


Fig. S2. An example of a dye test conducted to ensure that flow linearity and velocity were similar among the left and right channels and through repetitions. We observed no back-flow into the channels, with the water in each channel flowing at $16 \text{ ml} \cdot \text{min}^{-1}$. After establishing the aperture of valves to obtain the desired flow velocity, we conducted this procedure at the onset of each testing day (i.e., three times), which yielded comparable results.



Fig. S3. An example of a hatchling from its starting position on the ‘beach’ facing the channels and the flume’s flow. At the onset of each trial, we aimed to place a hatchling at the midpoint of the flume’s beach and with an orientation that was parallel to the flume’s lengthwise direction (see the dashed lines). A distance of 20 cm separated the edge of the ‘beach’ from the bifurcation of the flume, which lead to the left and right channels. The ‘beach’ gently sloped toward two dim red light-sources (not shown), each of these placed at approximately at 1.2 m from the inflow of each channel. Beach slope and light are known guidance cues for hatchlings after emergence, which we aimed to replicate to mimic the conditions encountered in the wild.

Table S1. List of the trials in which a hatchling's initial placement onto the flume's beach deviated from neutrality, in either the orientation angle (degree) or position relative to the beach's midpoint (cm). No individual's placement deviated from neutrality in both angle and position. Groups and repetitions relative to these placements are presented. In such biases (angle or position), negative values indicate that individuals were oriented or placed slightly toward the left side of the flume, suggesting a higher propensity of hatchlings to enter the left-side channel. Contrarily, positive values would suggest entering the right-side channel. Such occurrences are presented in bold (rightmost column) and account for less than 43% of these cases (i.e., 6 out of 14). Thus, most biased starting conditions did not guide hatchlings toward a specific side of the flume. Blank spaces indicate neutrality (i.e., a value of '0') of the starting parameter (orientation angle or position).

Turtle ID	Group	Repetition	Biased angle (degree)	Biased position (cm)	Channel entered
2	1	1		-1	Left
3	1	1	-1		Left
3	1	2	-1		Left
6	1	1		+1	Left
9	1	1	+1		Left
10	1	2		-1	Right
11	2	2	-1		Right
12	2	2		-1	Right
17	2	1		+1	Left
18	2	2	-2		Right
19	2	2	+1		Right
22	3	2		+1	Left
23	3	1	+3		Right
29	3	1	+2		Right