

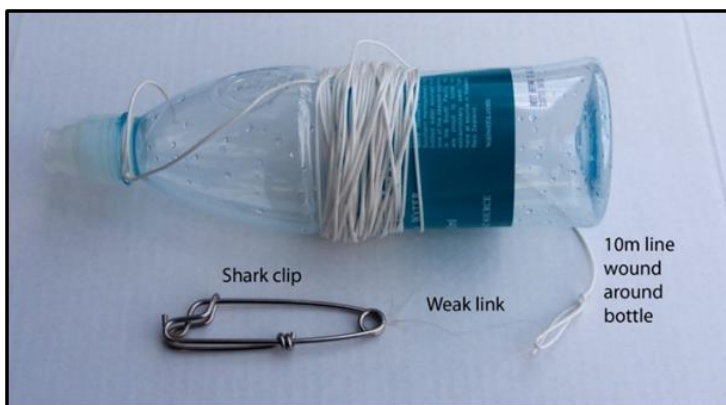
# Bottle Test Guidelines

Mitigation Standards call for bottom longline hooks to be at **5m depth** at the end of your tori line aerial section or **10m depth** for lines set during high-risk periods. The bottle test is a simple way to immediately measure if this is met.

The idea is to clip a bottle onto the backbone with a pre-measured length of line between the bottle and the clip. The line is wound around the bottle to unwind as the line sinks.

## To make up a bottle all you need to do is:

1. Get a small drink bottle (750ml, water 'pump-bottle', etc)
2. Pop open the cap at the end, or if it is a screw cap drill at least a 10 mm hole in the cap. This will let the water in. Drill more holes in the base to let the air out.
3. Tie a light line round the neck of the bottle and mark it at 1 m intervals, out to the test depth.
4. Tie a weak link to the end of this line – for example some light mono, in case the bottle catches on the tori line. Then tie a clip onto the weak link
5. Wind the line around the bottle



## To perform a test

- Try to pick a good weather day to help with visibility. If it is dark, add reflective tape or put a lightstick in the bottle.
- Set the length of the bottle-line by tying it off around the neck of the bottle at 5m or 10m (or whatever test depth)
- During setting, clip the bottle-line onto the mainline at the slowest sinking part of the line. This is usually just after **halfway between 2 weights** – the angle of the mainline coming off the back of the boat will give you a good idea, but you will need to find this out by trying different positions.
- Record the time taken from when the mainline enters the water (at the point where the bottle is clipped), to when the bottle is pulled under. Use the table (on the back) to lookup distance astern the backbone reaches set depth.
- **See if the bottle sinks in front of the aerial section of the tori line.** If the bottle sinks behind the aerial section of the tori line repeat the test with a progressively shorter rope on the bottle. Trial and error will give a good idea of your mainline depth at the end of the tori line aerial section.
- Record the results on your 'Bottle Test Record Sheet'.
- If you lose sight of the bottle prior to it being dragged underwater and do not re-sight it, draw a line through the row and record the test as null within the comments field.

## Not sinking fast enough? - There are only really three options:

1. Sink the gear faster with larger weights, closer weight spacing, or less floatation.
2. Have a longer tori aerial section by lengthening the tori line and adding more drag or running it from a higher pole.
3. Slow down, and your gear will sink closer to the boat, but you need to maintain the aerial extent of your tori line.

**In practice you'll probably need to do all of the above, and may need to avoid 'high-risk periods'.**

High risk periods are defined as during daylight hours and during nights three days either side of a full moon (except when there is full cloud cover), and includes periods of high seabird activity.

## Bottle test lookup table to find distance travelled from speed and time taken

Lookup time taken along the top row and follow that column down until it matches speed (through the water) on the left-hand column. The figure in the box gives the distance travelled.

Speed (knots) (m/s)		Time (seconds)																														
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
3	1.54	0	2	3	5	6	8	9	11	12	14	15	17	19	20	22	23	25	26	28	29	31	32	34	35	37	39	40	42	43	45	46
3.5	1.80	0	2	4	5	7	9	11	13	14	16	18	20	22	23	25	27	29	31	32	34	36	38	40	41	43	45	47	49	50	52	54
4	2.06	0	2	4	6	8	10	12	14	16	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	54	56	58	60	62
4.5	2.32	0	2	5	7	9	12	14	16	19	21	23	25	28	30	32	35	37	39	42	44	46	49	51	53	56	58	60	63	65	67	69
5	2.57	0	3	5	8	10	13	15	18	21	23	26	28	31	33	36	39	41	44	46	49	51	54	57	59	62	64	67	69	72	75	77
5.5	2.83	0	3	6	8	11	14	17	20	23	25	28	31	34	37	40	42	45	48	51	54	57	59	62	65	68	71	74	76	79	82	85
6	3.09	0	3	6	9	12	15	19	22	25	28	31	34	37	40	43	46	49	52	56	59	62	65	68	71	74	77	80	83	86	90	93
6.5	3.34	0	3	7	10	13	17	20	23	27	30	33	37	40	43	47	50	54	57	60	64	67	70	74	77	80	84	87	90	94	97	100
7	3.60	0	4	7	11	14	18	22	25	29	32	36	40	43	47	50	54	58	61	65	68	72	76	79	83	86	90	94	97	101	104	108

Speed (knots) (m/s)		Time (seconds)																														
		30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
3	1.54	46	48	49	51	52	54	56	57	59	60	62	63	65	66	68	69	71	73	74	76	77	79	80	82	83	85	86	88	90	91	93
3.5	1.80	54	56	58	59	61	63	65	67	68	70	72	74	76	77	79	81	83	85	86	88	90	92	94	95	97	99	101	103	104	106	108
4	2.06	62	64	66	68	70	72	74	76	78	80	82	84	86	88	91	93	95	97	99	101	103	105	107	109	111	113	115	117	119	121	123
4.5	2.32	69	72	74	76	79	81	83	86	88	90	93	95	97	100	102	104	106	109	111	113	116	118	120	123	125	127	130	132	134	137	139
5	2.57	77	80	82	85	87	90	93	95	98	100	103	105	108	111	113	116	118	121	123	126	129	131	134	136	139	141	144	147	149	152	154
5.5	2.83	85	88	91	93	96	99	102	105	108	110	113	116	119	122	124	127	130	133	136	139	141	144	147	150	153	156	158	161	164	167	170
6	3.09	93	96	99	102	105	108	111	114	117	120	123	127	130	133	136	139	142	145	148	151	154	157	161	164	167	170	173	176	179	182	185
6.5	3.34	100	104	107	110	114	117	120	124	127	130	134	137	140	144	147	150	154	157	161	164	167	171	174	177	181	184	187	191	194	197	201
7	3.60	108	112	115	119	122	126	130	133	137	140	144	148	151	155	158	162	166	169	173	176	180	184	187	191	194	198	202	205	209	212	216