

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p>Fifth Meeting of the Seabird Bycatch Working Group <i>La Rochelle, France, 1-3 May 2013</i></p> <p>Does propeller turbulence affect the sink rate of baited hooks and their availability to seabirds in pelagic longline fisheries?</p> <p><i>Graham Robertson and Steven G. Candy, Australian Antarctic Division</i></p>
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SUMMARY

1. Experiments were conducted on three pelagic longline fishing vessels on the effects of propeller and hull turbulence on baited hook sink rates. Baited hooks were deployed to land in the sea: i) close to the vessel's stern in the centre line of the propeller; into the wake zones on both ii) upswing and iii) downswing sides of the propeller; and outboard of wake zones on vessel iv) upswing and v) downswing sides. Two branch line deployment methods – the 'lead sinker first' and 'hook-and-sinker together' – were also assessed.

2. Branch line deployment method made no difference to the sink rates in each of the five bait landing positions. The sink rates within bait landing position varied among vessels as did the order of the sink profiles (fastest to slowest), indicating the results cannot be combined for all vessels.

3. Within each of the three vessels, baited hooks in the centre position reached 3 m depth 16%, 19% and 30% slower than those in the next slowest position. Mean sink times in propeller upswing and downswing zones were virtually the same. Sink times to 3 m in these two positions and in the two positions outboard of vessel wakes varied by only 2 s (0.02 m/s). Gear sank fastest outboard of vessel wakes on the downswing side of the propeller, but the advantage in deploying to this area was minor.

4. To reduce bait availability to seabirds hooks should be set to avoid the area of maximum propeller upwelling astern of vessels (i.e. the centre position). The absence of strong effects with the other bait landing positions dictates the rigging position of bird scaring streamer lines takes priority over landing position, and baits be set to areas that provide the most effective coverage (both laterally and distance astern) by streamer lines.