# Correction of at-surface abundance of harbour porpoises in West Greenland based on detection to 1 m depth.

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Satellite-linked-time-depth-recorders have been used for deriving correction factors for whales that are surbmerged during aerial surveys. The dive data from the satellite transmitters are collected from a pressure transducer that measures the time (1 s sampling rate for Greenland harbour porpoises) at certain depth intervals. To avoid drift of the pressure transducer the 0 m surface readings are calibrated from the conductivity switch that instantly records when the animal is at surface but it does not record the 'time the animal is dry'. The 0 m depth readings relies entirely on the depth transducer.

SC/20/HP7 presents an estimate of the at-surface abundance of harbour porpoises in West Greenland in 2007. The estimate corrected for the fraction of porpoises outside the surveyed area was 14,129 (cv=0.37).

Teilmann (unpubl. data presented at the meeting) provided data on the proportion of time spent at 0, 0-1 and 1-2 m depths for one porpoise instrumented with a time-depth-recorder during the summer period and during daylight hours in Denmark (Table 1).

*Table 1. Proportion of time (%) spent at three depths for a porpoise from Denmark, and for two porpoises tracked by satellite in Greenland. *) indicate that the value was calculated based on the proportion of time in depth categories for the Danish harbour porpoise. CV indicated in parenthesis.*

| Depth | Denmark | Greenland |
|---|---|---|
| 0 m | 4,68 | 5,14 (0.13) |
| 0-1 m | 36 | 28 *) |
| 0-2 m | 54,6 | 42,4 |

The value for the time at 0-1 m depth with a cv of 0.13 was used to correct the at-surface abundance estimate to derive a totally corrected abundance estimate of 50.461 (95%CI 24.043-105.904, cv=0.39).

This correction factor assumes detection on the trackline down to 1 m depth but the assumption is not entirely applicable to the aerial survey (West Greenland in 2007) and the attained abundance estimate is probably negatively biased.