

Quantitative assessment of south Vancouver Island harbour porpoise seasonal abundance and spatial distribution

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The coast of British Columbia represents a substantial portion of the northeast Pacific range of harbour porpoise (*Phocoena phocoena*). However, few ecological studies have been conducted on harbour porpoise in this region, and little is known about their numbers or seasonal movements. Although the Atlantic harbour porpoise population was accorded a "Threatened" status by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 1991 and reassessed as "Special Concern" under the newly enacted Species at Risk Act in 2003, the British Columbia population remains classified as "Data Deficient" (COSEWIC) due to a lack of biological information. To begin to address this deficiency, we conducted the first Canadian vessel-based line-transect survey to estimate abundance in southern Vancouver Island waters. The study area encompassed 805.3 km²; with a total transect length of 1838.4 km. Data collection was restricted to Beaufort 0 and 1, and abundance was estimated using Distance 3.5 software. Forty-seven line-transect surveys were conducted from September 2001 - August 2002 within the Canadian waters of Juan de Fuca and Haro Straits. Previously unknown seasonal fluctuations in numbers and distribution were identified, with the greatest mean density (673 porpoise, CV=20.5%, corrected for visual radial distance estimation) occurring from April to October. Estimates declined to an average of 208 porpoises for the remainder of the year (November to March, CV=37.5%). The line-transect estimates were consistent with long-term opportunistic observations (1995 - 2001, n=2595 hours) of calves, large aggregations and spatial distribution during the high-density time of the year. Our findings suggest that the south Vancouver Island area is a seasonally important habitat for harbour porpoise, and one that may be critical to their reproductive success. Our data may also explain the seasonal occurrence of harbour porpoise strandings in this region.