

## Status of BC Cetaceans (whales)

### Section scope:

This section presents new evidence on the status and abundance of cetaceans, pinnipeds, and sea otters. New evidence is presented on the inadequacy of the Enbridge ESA in addition to new evidence concerning the potential risk to cetaceans, pinnipeds and sea otters from the Enbridge Northern Gateway project.

### Which cetaceans are at risk, or of special concern, in the project area?

The following species of cetaceans are *at risk (threatened or endangered)* or *special concern*.

**Harbour porpoise:** The Harbour porpoise (*Phocoena phocoena*) is listed as *Vulnerable* by the IUCN with a global population estimate of about 700,000 individuals (Hammond et al. 2008<sup>1</sup>). Within Canadian Pacific waters, it is recognized as a species of *Special Concern* by COSEWIC (COSEWIC 2003<sup>2</sup>)

**Humpback whale:** Humpback whales (*Megaptera novaeangliae*) were down-listed by the IUCN in 2008 to a species of *Least Concern* status because current global estimates now exceed 60,000 individuals. This level exceeds the 50% threshold of the 1940 population (Reilly et al. 2008a<sup>3</sup>). Population estimates conducted under the SPLASH project indicate the North Pacific regional humpback population to be just under 20,000, approximately double the previous estimates (Calambokidis et al. 2008<sup>4</sup>).

The North Pacific population of humpback whales are currently listed as *threatened* under Canada's *Species at Risk Act* (SARA). They have recently been re-assessed by COSEWIC as being of *special concern*. Current abundance estimates suggest that the population is recovering at

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<sup>1</sup> Hammond, P. S., G. Bearzi, A. Bjørge, K. Forney, L. Karczmarski, T. Kasuya, W. F. Perrin, et al. 2008a. *Phocoena phocoena*. IUCN 2009. IUCN Red List of Threatened Species. Version 2009.2. [www.iucnredlist.org](http://www.iucnredlist.org).

<sup>2</sup> COSEWIC Assessment Results, November 2003. Committee on the Status of Endangered Wildlife in Canada. 44 pp.

<sup>3</sup> Reilly, S. B., J. L. Bannister, P. B. Best, M. Brown, R. L. Brownell Jr, D. S. Butterworth, P. J. Clapham, et al. 2008a. *Megaptera novaeangliae*. IUCN 2009. IUCN Red List of Threatened Species. [www.iucnredlist.org](http://www.iucnredlist.org).

<sup>4</sup> Calambokidis, J., E. A. Falcone, T. J. Quinn, A. M. Burdin, P. J. Clapham, J. K. B. Ford, C. M. Gabriele, et al. 2008. *SPLASH: Structure of Populations, Levels of Abundance and Status of Humpback Whales in the North Pacific*. May.

an annual rate of increase ranging from 4.9 to 6.8 percent (Fisheries and Oceans Canada (DFO)<sup>5</sup>). These increasing numbers have been heralded as a sign of post-whaling recovery (Dalton 2008<sup>6</sup>). The federal SARA designation of *threatened* was proposed for down-listing to *special concern* in November 2011.

**Fin whales:** The global population of fin whales (*Balaenoptera physalus*) is listed as *endangered* by the IUCN and designated as *threatened* by both SARA and COSEWIC in Canada. Fin whale surveys undertaken in 2001-2003 in the western Alaska and the central Aleutian Islands were compared with those from 1987 and a 4.8% (95% CI = 4.1-5.4%) annual rate of increase was detected (Zerbini et al. 2006<sup>7</sup>). A total population size of 1652 (95% CI = 1142- 2389) individuals was determined in 2003. Since the 1975, north Pacific estimate of roughly 17,000 fin whales (Reily 2008b<sup>8</sup>) (down from an estimated 44,000 preceding intensive whaling) there has been a lack of sufficient survey data and abundance estimates to develop estimates for the entire regional population of fin whales.

Further, few data exist to determine the critical habitat needs of this threatened population. Gregr and Trites (2001<sup>9</sup>) proposed that oceanographic conditions off the north end of Vancouver Island create suitable conditions for the entrainment of phytoplankton and zooplankton. Although further research is needed before critical habitat in Pacific Canadian waters can be identified for fin whales, generalized predictions of fin whale habitat have been made in the SARA Recovery strategy (Gregr et al. 2006<sup>10</sup>). In 2006, the Recovery Strategy for Blue, Fin, and Sei Whales identified the region off northwestern Vancouver Island as ‘multi-species critical habitat’, (Gregr et al. 2006).

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<sup>5</sup> Fisheries and Oceans Canada.

<http://www.pac.dfo-mpo.gc.ca/consultation/sara-lep/humpback-bosse/index-eng.htm>

<sup>6</sup> Dalton, R. 2008. Whales are on the rise. *Nature* 453, no. 7194: 433.

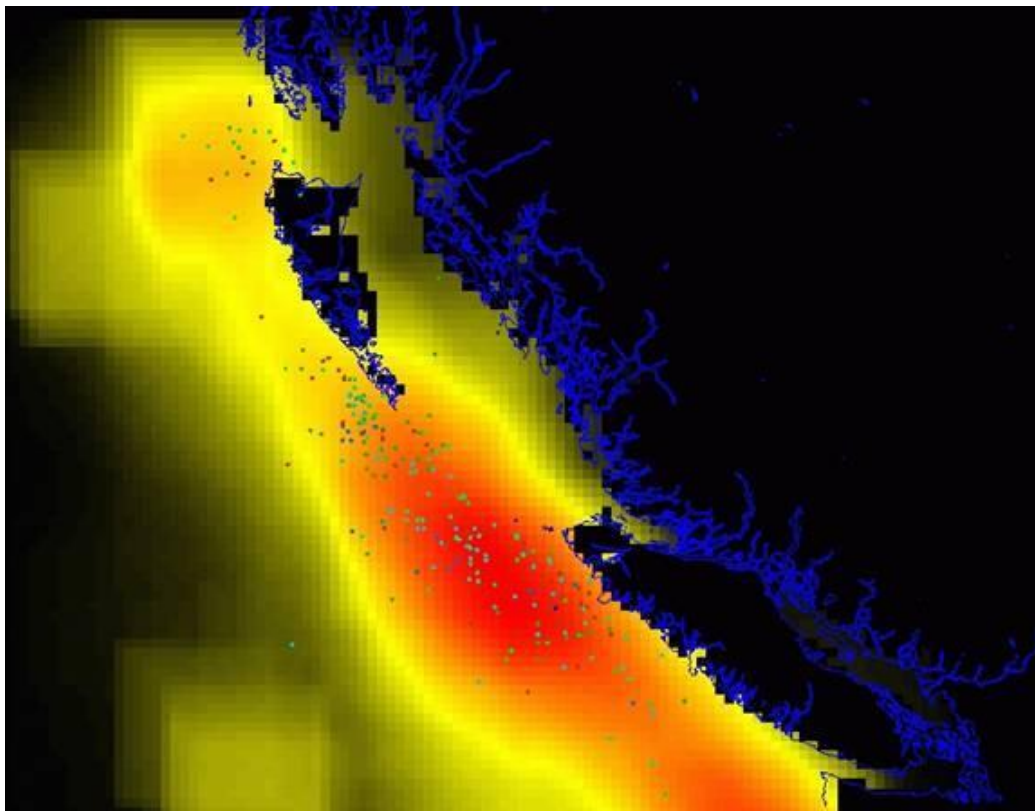
<sup>7</sup> Zerbini, A.N., Andriolo, A., Heide-Jørgensen, M.A., Pizzorno, J.L., Maia, Y.G., VanBlaricom, G.R., DeMaster, D.P., Simoes-Lopes, P.C., Moreira, S. and Bethlem, C. 2006. Movements of satellite monitored humpback whales (*Megaptera novaeangliae*) in the Southwest Atlantic Ocean. *Mar. Ecol. Prog. Ser.* 313:295-304.

<sup>8</sup> Reilly, S. B., 2008b. *Balaenoptera physalus*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.2. [www.iucnredlist.org](http://www.iucnredlist.org)

<sup>9</sup> Gregr, E. J. and A.W. Trites. 2001. Predictions of critical habitat for five whale species in the waters of coastal British Columbia. *Can. J. Fish. Aquat. Sci.* 58: 1265–1285

<sup>10</sup> Gregr, E.J., J. Calambokidis, L. Convey, J.K.B. Ford, R.I. Perry, L. Spaven and M. Zacharias. 2006. Recovery strategy for blue, fin, and sei whales (*Balaenoptera musculus*, *B. physalus*, and *B. borealis*) in Pacific Canadian waters. In *Species at risk act recovery strategy series*. Vancouver: Fisheries and Oceans Canada. vii + 53 pp.

**Blue whale:** The Pacific population of blue whales (*Balaenoptera musculus*) is identified as *endangered* under SARA (Government of Canada 2011<sup>11</sup>). Critical habitat for this species has not been designated in Canadian Pacific waters and further research is needed for this to be completed, however generalized predictions of blue whale habitat have been made in the SARA Recovery strategy (Gregar et al. 2006), Figure 2.1.1.

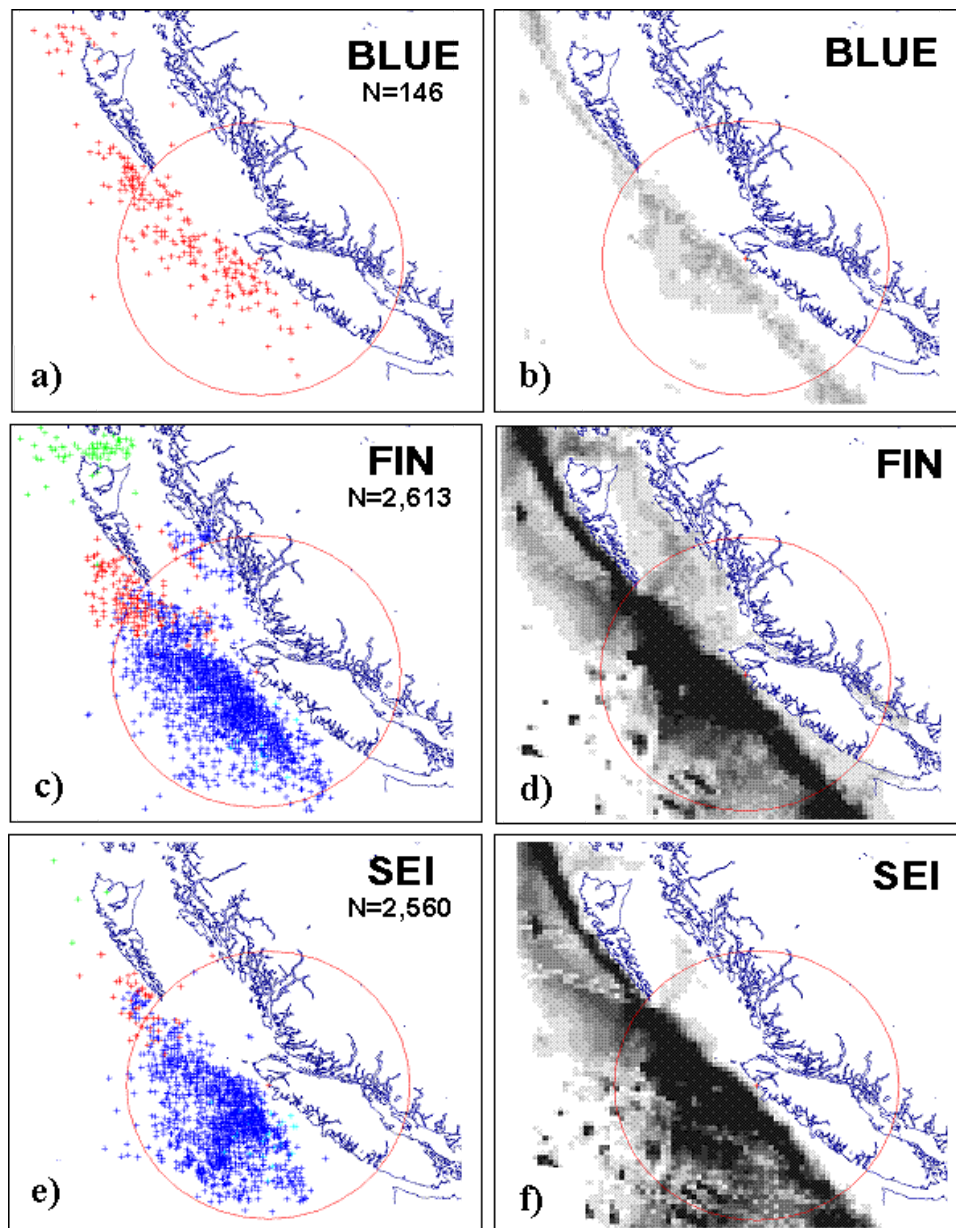


**Figure 2.1.1:** Historical recorded kills of blue whales (coloured dots) in Pacific Canadian waters, and generalized blue whale habitat predictions (shaded from high (red) through yellow to low (black), (Gregar et al. 2006).

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<sup>11</sup> Government of Canada Species at risk public registry, Internet Source, Sourced July 2011, [http://www.sararegistry.gc.ca/sar/listing/schedules\\_e.cfm?id=1](http://www.sararegistry.gc.ca/sar/listing/schedules_e.cfm?id=1)

**Sei whale:** The Pacific population of Sei whales (*Balaenoptera borealis*) is identified as *endangered* under SARA (Government of Canada 2011<sup>12</sup>). Further research is needed before critical habitat in Pacific Canadian waters for sei whales can be designated. However, their distribution is identified in the SARA Recovery Strategy for sei whales, Figure 2.1.2.



**Figure 2.1.2:** Distribution of historic kills of whales in Canadian Pacific waters (left) and habitat

<sup>12</sup> Government of Canada Species at risk public registry, Internet Source, Accessed 20 July 2011: [http://www.sararegistry.gc.ca/sar/listing/schedules\\_e.cfm?id=1](http://www.sararegistry.gc.ca/sar/listing/schedules_e.cfm?id=1)

model predictions (right). Circle shows 150 nm from Coal Harbour, the only operating whaling station during the period when most kill locations were recorded. Predictions are shaded from high to low probability (dark to light), (Gregr at al. 2006).

**Killer whales:** Killer whales (*Orcinus orca*) occur globally in highly productive, often cooler waters, and are listed by the IUCN as *Data Deficient* (Taylor et al. 2008<sup>13</sup>). In British Columbia four designated units of killer whales are designated (with population estimates based on photo-id): 1) Northern Resident (264 in 2011), 2) Southern Resident (87 in 2011), 3) West Coast Transient (198 in 2006), and 4) Offshore (COSEWIC 2008<sup>14</sup>). All of these sub-populations are designated within Canadian waters as *Threatened*, except the southern residents, which are listed as *Endangered*. Critical habitat for northern and southern resident killer whale populations was identified in the SARA recovery strategy in 2008. However, an analysis of additional data on coast-wide occurrence patterns of northern residents was still ongoing. As such, additional potential critical habitat areas were proposed. These potential areas included Caamaño Sound and Whale Channel on the central coast and portions of Dixon Entrance (DFO 2008<sup>15</sup>)

### **Are there other historic or recovering species in the project area?**

The Queen Charlotte basin also provides habitat for small ephemeral populations of rare species including Risso's dolphin and beaked whales, which are also highly vulnerable.

COSEWIC assessed Risso's Dolphin as *not at risk* in April 1990 and they have not been assessed since (COSEWIC 2011<sup>16</sup>). However, researchers have noted that the effects of long-term degradation of their environment and subsequent population impacts are potentially serious and

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<sup>13</sup> Taylor, B. L., R. Baird, J. Barlow, S. M. Dawson, J. Ford, J. G. Mead, G. N. di Sciara, P. Wade, and R. L. Pitman. 2008. *Orcinus orca*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.2. [www.iucnredlist.org](http://www.iucnredlist.org).

<sup>14</sup>COSEWIC. 2008. *COSEWIC assessment and update status report on the Killer Whale Orcinus orca, Southern Resident population, Northern Resident population, West Coast Transient population, Offshore population and Northwest Atlantic / Eastern Arctic population, in Canada*. Ottawa. [www.sararegistry.gc.ca/\\_tatus/status\\_e.cfm](http://www.sararegistry.gc.ca/_tatus/status_e.cfm).

<sup>15</sup> Fisheries and Oceans Canada. 2008. Recovery Strategy for the Northern and Southern Resident Killer Whales (*Orcinus orca*) in Canada. *Species at Risk Act Recovery Strategy Series*. Fisheries and Oceans Canada, ix+81 pp. Available at (<http://www.sararegistry.gc.ca/>)

<sup>16</sup> COSEWIC, Internet source, [http://www.cosewic.gc.ca/eng/sct1/searchdetail\\_e.cfm?id=342&StartRow=91&boxStatus=all&boxTaxonomic=all&location=all&change=all&board=all&commonName=&scienceName=&returnFlag=0&Page=10](http://www.cosewic.gc.ca/eng/sct1/searchdetail_e.cfm?id=342&StartRow=91&boxStatus=all&boxTaxonomic=all&location=all&change=all&board=all&commonName=&scienceName=&returnFlag=0&Page=10). Accessed 5 December 2011.

should be monitored (Baird and Stacey 1991<sup>17</sup>).

COSEWIC 2011<sup>18</sup> identifies numerous beaked whales, as *not at risk*. However, the most recent assessment was 1990.

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<sup>17</sup> Baird R. Baird, P. Stacey, 1991, Status of Risso's Dolphin, *Grampus gresius*, in Canada, *Canadian Field Naturalist* 105 (2): 233-242.

<sup>18</sup> COSEWIC, Internet source, [http://www.cosewic.gc.ca/eng/sct1/searchresult\\_e.cfm?StartRow=111&boxStatus=All&boxTaxonomic=All&location=All&change=All&board=All&commonName=&scienceName=&returnFlag=0&Page=12](http://www.cosewic.gc.ca/eng/sct1/searchresult_e.cfm?StartRow=111&boxStatus=All&boxTaxonomic=All&location=All&change=All&board=All&commonName=&scienceName=&returnFlag=0&Page=12). Accessed 5 December 2011.