

Southern Hemisphere humpback whale Comprehensive Assessment workshop, Seattle February 2009: Summary Table for BS Ei, Eii, Eiii, American and Independent Samoa, Fi and Fii (Revised Table 1 from SC/58/REP 5)

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(1) BS	(2) Feeding Grounds	(3) Migration routes	(4) Breeding grounds	(5) Catches Commercial	(6) Catches Subsistence/incidental	(7) Population abundance	(8) Population trend	(9) Age at sx mt	(10) Juv surv.	(11) Adult surv.	(12) Env Conc.	(13) Ass. mod
E(i)	Antarctic Areas IV-V, 110°E-? Between Antarctic Area V and eastern Australian coast/Coral sea <sup>1,2</sup>	Within Oceania- New Caledonia <sup>3</sup> , can pass New Zealand <sup>4</sup> . Discovery marks suggest historical connection with Fiji and Norfolk Island <sup>5</sup>	Coastal eastern Australia, esp. 18-21°S <sup>6</sup>	See refs <sup>1,7,8,9</sup>		<i>Shore-based survey:</i> 4900 (2002) <sup>6</sup> 7090±660 (2004) (95%CI) <sup>10</sup> , extrapolated to 9,683±612 (95% CI) (2007) <sup>11</sup> <i>Vessel-based (photo-id) survey:</i> 2309 (±365) 1993-1999 <sup>12</sup> 7024 (95% CI 5163-9685) 2005 <sup>13</sup> <i>Antarctic sightings, Area V:</i> 2735 (CV 0.16) (2003) <sup>14</sup> 9765 (CV=0.33) 2004/2005 Area V <sup>15</sup>	10.5% (95% CI 10.1, 11.1) or 10.8% (95% CI 10.2-11.5) 1984-2002 <sup>6</sup> ; 10.08% (SE ??, 1980-2000, 8.52% (SE 0.05, 1986-2000), 8.54% (SE 0.05, 1991-2000) <sup>16</sup> ; 12.2% (7.1-17.3%) <sup>14</sup> ; 10.9% (95%CI 10.5-11.4%) 1984-2007 <sup>11</sup> ; 11%±9% (95%CI) 1998-2004 <sup>17</sup> ; 6.3% yr (95% CI: 2-11%) 1987-1996 <sup>18</sup>	4-5 years, both sexes (1951-59 assuming 2 laminations/yr <sup>1</sup> 3-4 yrs, both sexes <sup>1</sup> However, note <sup>19</sup> , 9-11 years, assuming 1 lamination/yr (both sexes)	0.7103 Hervey Bay (95% CI 0.52-0.99); 0.2612 Whitsunday Isl. (CI 0.12-0.99) <sup>12</sup>	0.91 (lower limit, 1957, 1958) <sup>1</sup> 0.966 (95% CI: 0.87 to 1.00) <sup>18</sup> 0.9581 Hervey Bay (95% CI: 0.58-0.99); 0.8838 Whitsunday Is. <sup>12</sup>	As for D	Bayesian assessments <sup>20,21</sup>
E(ii)	Antarctic Area V ?-? °E. Genotype matching between New	Within Oceania. Photo-identification matches	New Caledonia 22°S <sup>29,30</sup>	Unknown; see also ref <sup>8,9</sup>		<i>Petersen capture-recapture, photo ID:</i> 327 (CV 0.11) <sup>30</sup>	?	?	?	?	Unregulated whale watching <sup>33,34,35</sup> Nickel	Bayesian assessments <sup>20,21</sup>

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	Caledonia and Area V <sup>22</sup>	between eastern Australia and New Zealand <sup>23,24</sup> , Vanuatu <sup>25</sup> , Tonga <sup>26</sup> and French Polynesia <sup>27</sup> . Satellite-tagging confirms connections with Norfolk Isl, NZ and the Kermadecs. <sup>28</sup>				<p><i>Multi-year 1999-2004 closed model:</i> 472 (CV 0.18) <sup>31</sup></p> <p><i>Genotyping:</i> 533 (CV 0.15), both weighted mean of Petersen (1995-2001) <sup>30</sup></p> <p><i>Sex specific:</i> N<sub>f</sub>=248, CV 0.30; N<sub>m</sub>=2788, CV=0.11 <sup>30</sup>;</p> <p><i>Gametic recapture:</i> N<sub>m</sub>=379, CV=0.30 <sup>30</sup>;</p> <p><i>Organismal recapture:</i> N<sub>m</sub>=382, CV=0.22 <sup>30</sup></p> <p><i>Sighting survey</i> Very low abundance recorded in comparison with historical data <sup>32</sup></p>					mining	
E(iii)	Antarctic Areas V, VI and I? One record between Bellinghausen Sea (Area VI) and Tonga; one between Area V and	Within Oceania, movement between Tonga, New Caledonia, Vanuatu, American Samoa, French Polynesia and	Tonga <sup>39</sup>	Small-scale coastal hunt until 1979 <sup>40</sup> ? see also ref <sup>8,9,41</sup>		<p><i>Weighted Petersen capture-recapture:</i> 990 (SE 0.15, 1991-2000) <sup>30</sup>;</p> <p>730 adjusted for 3% adult mortality (2000) <sup>42</sup></p>	?	?	?	?	?	Bayesian assessment <sup>20,21</sup>

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	Tonga <sup>36</sup> . Mixed stock analysis (MSA) supports strongest connections between Tonga and Area IV <sup>52</sup> . Two records between Area I and Tonga <sup>37,38</sup> . Genotype matching between Tonga and Areas VI and I. <sup>22</sup>	the Cook Islands <sup>26</sup>				<i>Multi-year 1999-2004 closed population model: 2,311 (CV 0.22)</i> <sup>31</sup> <i>Sighting survey</i> Very low abundance recorded in comparison with historical data <sup>43,44,45</sup>						
E(iii) ?	Area V-I? One match between American Samoa and Antarctic Peninsula (Area I) <sup>46</sup>	Within Oceania, connections with Tonga and the Cook Islands <sup>46</sup>	Independent Samoa <sup>51</sup> , American Samoa <sup>47</sup>	?	?	?	?	?	?	?	?	?
F	Area VI? – Satellite tagging connection with Cook Islands and Antarctic Area IV. <sup>48</sup>	Within-season movement between F islands <sup>49</sup> . Inter-annual matches with Tonga and American Samoa <sup>3,46</sup> . Satellite tagging shows movement to New Caledonia from Cook Islands <sup>28</sup>	Cook Islands <sup>50</sup> French Polynesia <sup>49</sup>	Rurutu, Austral Is (22°30'S, 151°15'W). Local capture for food until 1959	Rurutu-entanglements	<i>Multi-year 1999-2004 closed population model: abundance of French Polynesia is 1.057 (CV 0.22)</i> <sup>31</sup> Cook Islands catalogue size: 93 humpbacks	?	?	?	?		Bayesian assessment <sup>21</sup>



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