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| **Table S1** Summary of data available for the stock assessments presented here | | | | |
| Scientific name  (common name) | Region | L/F data | Length type | Data source |
| *Chelidonichthys spinosus*  (spiny red gurnard) | Bohai Sea and Yellow Sea | 2016-2017 | SL | Original survey data |
| *Crangon affinis*  (hakodate sand shrimp) | Bohai Sea and Yellow Sea | 2016-2017 | CL | Original survey data |
| *Cynoglossus joyneri*  (red tonguesole) | Bohai Sea and Yellow Sea | 2016-2017 | TL | Original survey data |
| *Saurida elongata*  (slender lizardfish) | Bohai Sea and Yellow Sea | 2016-2017 | TL | Original survey data |
| *Trachysalambria curvirostris*  (southern rough shrimp) | Bohai Sea and Yellow Sea | 2016-2017 | CL | Original survey data |
| *Hexagrammos agrammus*  (spotty-bellied greenling) | Rongcheng | 2011 | SL | Ji (2014, Figure 1.1 therein) |
| *Muraenesox cinereus*  (daggertooth pike conger) | East China Sea | 2003 | VL | Zhou and Xu (2007, Table 4 therein) |
| *Pennahia pawak*  (pawak croaker) | Beibu Gulf | 2009 | SL | Yan et al. (2011, Table 4 therein) |
| *Setipinna taty*  (scaly hairfin anchovy) | Yellow Sea | 2005 | SL | Xiong et al. (2009, Figure 4 therein) |
| [*Decapterus*](http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?genid=2102)[*maruadsi*](http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?spid=62260) (Japanese scad) | Beibu Gulf | 1998, 2009 | SL | Geng et al. (2018, Figure 1 therein) |
| *Evynnis cardinalis*  (threadfin porgy) | Beibu Gulf | 1962, 2006 | SL | Zhang et al. (2016a, Figure 1 therein) |
| *Liparis tanakae*  (Tanaka's snailfish) | Yellow Sea | 2005, 2010 | SL | Chen et al. (2013, Figure 3 therein) |
| *Nemipterus bathybius*  (yellowbelly threadfin bream) | Beibu Gulf | 1997, 2009 | SL | Chen et al. (2012, Figure 2 therein) |
| *Priacanthus macracanthus*  (red bigeye) | Beibu Gulf | 1999, 2015 | SL | Zhang et al. (2016b, Figure 2 therein) |
| SL, standard length; CL, carapace length; TL, total length; VL, vent length | | | | |

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| **Table S2** Length-frequency data for 14 stocks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chelidonichthys spinosus* | | | | | *Crangon affinis* | | | | | | *Cynoglossus joyneri* | | | | | | *Saurida elongate* | | | | | *Trachysalambria curvirostris* | | | | | | | |
| mid-length (mm) | ind. | | | | mid-length (mm) | | | ind. | | | mid-length (mm) | | | | ind. | | mid-length (mm) | | | ind. | | mid-length (mm) | | | | | ind. | | |
| 45 | 1 | | | | 5 | | | 10 | | | 20 | | | | 1 | | 50 | | | 6 | | 7.5 | | | | | 23 | | |
| 55 | 3 | | | | 7 | | | 97 | | | 40 | | | | 7 | | 70 | | | 22 | | 12.5 | | | | | 139 | | |
| 95 | 5 | | | | 9 | | | 234 | | | 60 | | | | 73 | | 90 | | | 40 | | 17.5 | | | | | 349 | | |
| 105 | 35 | | | | 11 | | | 315 | | | 80 | | | | 256 | | 110 | | | 58 | | 22.5 | | | | | 421 | | |
| 115 | 156 | | | | 13 | | | 310 | | | 100 | | | | 366 | | 130 | | | 63 | | 27.5 | | | | | 286 | | |
| 125 | 310 | | | | 15 | | | 268 | | | 120 | | | | 524 | | 150 | | | 123 | | 32.5 | | | | | 103 | | |
| 135 | 377 | | | | 17 | | | 208 | | | 140 | | | | 517 | | 170 | | | 179 | | 37.5 | | | | | 12 | | |
| 145 | 504 | | | | 19 | | | 138 | | | 160 | | | | 309 | | 190 | | | 185 | | 42.5 | | | | | 1 | | |
| 155 | 413 | | | | 21 | | | 68 | | | 180 | | | | 81 | | 210 | | | 169 | |  | | | | |  | | |
| 165 | 281 | | | | 23 | | | 34 | | | 200 | | | | 18 | | 230 | | | 129 | |  | | | | |  | | |
| 175 | 251 | | | | 25 | | | 21 | | | 220 | | | | 3 | | 250 | | | 75 | |  | | | | |  | | |
| 185 | 80 | | | | 27 | | | 26 | | | 260 | | | | 1 | | 270 | | | 39 | |  | | | | |  | | |
| 195 | 46 | | | | 29 | | | 11 | | | 340 | | | | 1 | | 290 | | | 9 | |  | | | | |  | | |
| 205 | 24 | | | | 31 | | | 1 | | | 460 | | | | 1 | | 310 | | | 3 | |  | | | | |  | | |
| 215 | 28 | | | |  | | |  | | |  | | | |  | | 330 | | | 3 | |  | | | | |  | | |
| 225 | 3 | | | |  | | |  | | |  | | | |  | | 350 | | | 7 | |  | | | | |  | | |
| 235 | 6 | | | |  | | |  | | |  | | | |  | | 370 | | | 8 | |  | | | | |  | | |
| 255 | 1 | | | |  | | |  | | |  | | | |  | | 390 | | | 4 | |  | | | | |  | | |
| 285 | 1 | | | |  | | |  | | |  | | | |  | | 410 | | | 3 | |  | | | | |  | | |
| 295 | 1 | | | |  | | |  | | |  | | | |  | |  | | |  | |  | | | | |  | | |
| 335 | 1 | | | |  | | |  | | |  | | | |  | |  | | |  | |  | | | | |  | | |
| Sum | 2527 | | | | Sum | | | 1741 | | | Sum | | | | 2158 | | Sum | | | 1125 | | Sum | | | | | 1334 | | |
| **Table S2** continued | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hexagrammos agrammus* | | | | | | | *Muraenesox cinereus* | | | | | | *Pennahia pawak* | | | | | | | | *Setipinna taty* | | | | | | |
| mid-length (mm) | | ind. | | | | | mid-length (mm) | | | ind. | | | mid-length (mm) | | | | | ind. | | | mid-length (mm) | | | | ind. | | |
| 60 | | 3 | | | | | 125 | | | 35 | | | 85 | | | | | 6 | | | 45 | | | | 3 | | |
| 80 | | 22 | | | | | 175 | | | 176 | | | 95 | | | | | 22 | | | 55 | | | | 3 | | |
| 100 | | 76 | | | | | 225 | | | 378 | | | 105 | | | | | 30 | | | 65 | | | | 71 | | |
| 120 | | 209 | | | | | 275 | | | 373 | | | 115 | | | | | 52 | | | 75 | | | | 198 | | |
| 140 | | 249 | | | | | 325 | | | 155 | | | 125 | | | | | 50 | | | 85 | | | | 344 | | |
| 160 | | 166 | | | | | 375 | | | 35 | | | 135 | | | | | 67 | | | 95 | | | | 328 | | |
| 180 | | 60 | | | | | 425 | | | 13 | | | 145 | | | | | 81 | | | 105 | | | | 185 | | |
| 200 | | 23 | | | | | 475 | | | 9 | | | 155 | | | | | 56 | | | 115 | | | | 130 | | |
| 220 | | 8 | | | | | 525 | | | 8 | | | 165 | | | | | 45 | | | 125 | | | | 98 | | |
| 240 | | 2 | | | | | 575 | | | 6 | | | 175 | | | | | 38 | | | 135 | | | | 65 | | |
|  | |  | | | | | 625 | | | 2 | | | 185 | | | | | 30 | | | 145 | | | | 43 | | |
|  | |  | | | | | 675 | | | 3 | | | 195 | | | | | 20 | | | 155 | | | | 6 | | |
|  | |  | | | | | 725 | | | 2 | | | 205 | | | | | 18 | | | 165 | | | | 3 | | |
|  | |  | | | | | 775 | | | 2 | | | 215 | | | | | 7 | | |  | | | |  | | |
|  | |  | | | | |  | | |  | | | 225 | | | | | 1 | | |  | | | |  | | |
|  | |  | | | | |  | | |  | | | 235 | | | | | 1 | | |  | | | |  | | |
|  | |  | | | | |  | | |  | | | 245 | | | | | 1 | | |  | | | |  | | |
|  | |  | | | | |  | | |  | | |  | | | | |  | | |  | | | |  | | |
|  | |  | | | | |  | | |  | | |  | | | | |  | | |  | | | |  | | |
| Sum | | 818 | | | | | Sum | | | 1197 | | | Sum | | | | | 525 | | | Sum | | | | 1477 | | |
| **Table S2** continued | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [*Decapterus*](http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?genid=2102)[*maruadsi*](http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?spid=62260) | | | | | | | | | *Evynnis cardinalis* | | | | | | | | | | *Liparis tanakae* | | | | | | | | | |
| mid-length (mm) | | | ind. (1998) | | | ind. (2009) | | | mid-length (mm) | | | ind. (1962) | | | | ind. (2006) | | | mid-length (mm) | | | | ind. (2005) | | | ind. (2010) | | |
| 65 | | | 4 | | |  | | | 45 | | | 8 | | | | 14 | | | 170 | | | | 1 | | |  | | |
| 75 | | | 13 | | |  | | | 55 | | | 49 | | | | 24 | | | 190 | | | | 0 | | | 2 | | |
| 85 | | | 52 | | | 2 | | | 65 | | | 201 | | | | 22 | | | 210 | | | | 2 | | | 2 | | |
| 95 | | | 66 | | | 33 | | | 75 | | | 443 | | | | 177 | | | 230 | | | | 4 | | | 11 | | |
| 105 | | | 82 | | | 97 | | | 85 | | | 526 | | | | 310 | | | 250 | | | | 9 | | | 13 | | |
| 115 | | | 125 | | | 114 | | | 95 | | | 583 | | | | 481 | | | 270 | | | | 17 | | | 33 | | |
| 125 | | | 111 | | | 102 | | | 105 | | | 598 | | | | 496 | | | 290 | | | | 19 | | | 35 | | |
| 135 | | | 115 | | | 190 | | | 115 | | | 768 | | | | 247 | | | 310 | | | | 27 | | | 40 | | |
| 145 | | | 140 | | | 241 | | | 125 | | | 719 | | | | 100 | | | 330 | | | | 33 | | | 47 | | |
| 155 | | | 163 | | | 172 | | | 135 | | | 549 | | | | 73 | | | 350 | | | | 40 | | | 37 | | |
| 165 | | | 170 | | | 107 | | | 145 | | | 291 | | | | 54 | | | 370 | | | | 29 | | | 34 | | |
| 175 | | | 156 | | | 69 | | | 155 | | | 189 | | | | 28 | | | 390 | | | | 19 | | | 22 | | |
| 185 | | | 168 | | | 42 | | | 165 | | | 102 | | | | 13 | | | 410 | | | | 9 | | | 3 | | |
| 195 | | | 113 | | | 20 | | | 175 | | | 64 | | | | 8 | | | 430 | | | | 3 | | | 4 | | |
| 205 | | | 95 | | | 15 | | | 185 | | | 38 | | | | 5 | | | 450 | | | | 6 | | | 1 | | |
| 215 | | | 45 | | | 9 | | | 195 | | | 27 | | | | 3 | | | 470 | | | | 3 | | | 1 | | |
| 225 | | | 30 | | | 8 | | | 205 | | | 19 | | | |  | | | 490 | | | | 0 | | | 1 | | |
| 235 | | | 20 | | | 4 | | | 215 | | | 15 | | | |  | | | 510 | | | | 0 | | | 1 | | |
| 245 | | | 21 | | | 1 | | | 225 | | | 8 | | | |  | | | 530 | | | | 1 | | |  | | |
| 255 | | | 9 | | |  | | | 235 | | | 4 | | | |  | | |  | | | |  | | |  | | |
| 265 | | | 7 | | |  | | |  | | |  | | | |  | | |  | | | |  | | |  | | |
| 275 | | | 4 | | |  | | |  | | |  | | | |  | | |  | | | |  | | |  | | |
| 295 | | | 5 | | |  | | |  | | |  | | | |  | | |  | | | |  | | |  | | |
| Sum | | | 1714 | | | 1226 | | | Sum | | | 5201 | | | | 2055 | | | Sum | | | | 222 | | | 287 | | |
| **Table S2** continued | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Nemipterus bathybius* | | | | | | | | | | | | | | *Priacanthus macracanthus* | | | | | | | | | | | | | | |
| mid-length (mm) | | | | ind. (1997) | | | | | ind. (2009) | | | | | mid-length (mm) | | | | | ind. (1999) | | | | | ind. (2015) | | | | |
| 45 | | | | 1 | | | | | 1 | | | | | 55 | | | | | 1 | | | | | 3 | | | | |
| 55 | | | | 21 | | | | | 1 | | | | | 65 | | | | | 20 | | | | | 31 | | | | |
| 65 | | | | 20 | | | | | 1 | | | | | 75 | | | | | 11 | | | | | 79 | | | | |
| 75 | | | | 34 | | | | | 1 | | | | | 85 | | | | | 29 | | | | | 91 | | | | |
| 85 | | | | 26 | | | | | 1 | | | | | 95 | | | | | 25 | | | | | 136 | | | | |
| 95 | | | | 55 | | | | | 32 | | | | | 105 | | | | | 100 | | | | | 110 | | | | |
| 105 | | | | 102 | | | | | 87 | | | | | 115 | | | | | 208 | | | | | 111 | | | | |
| 115 | | | | 131 | | | | | 152 | | | | | 125 | | | | | 142 | | | | | 118 | | | | |
| 125 | | | | 144 | | | | | 67 | | | | | 135 | | | | | 216 | | | | | 178 | | | | |
| 135 | | | | 122 | | | | | 34 | | | | | 145 | | | | | 209 | | | | | 125 | | | | |
| 145 | | | | 68 | | | | | 24 | | | | | 155 | | | | | 169 | | | | | 83 | | | | |
| 155 | | | | 53 | | | | | 22 | | | | | 165 | | | | | 167 | | | | | 51 | | | | |
| 165 | | | | 40 | | | | | 14 | | | | | 175 | | | | | 129 | | | | | 51 | | | | |
| 175 | | | | 26 | | | | | 4 | | | | | 185 | | | | | 83 | | | | | 31 | | | | |
| 185 | | | | 14 | | | | | 5 | | | | | 195 | | | | | 68 | | | | | 29 | | | | |
| 195 | | | | 6 | | | | | 3 | | | | | 205 | | | | | 54 | | | | | 26 | | | | |
| 205 | | | | 4 | | | | | 1 | | | | | 215 | | | | | 40 | | | | | 19 | | | | |
| 215 | | | | 2 | | | | |  | | | | | 225 | | | | | 23 | | | | | 7 | | | | |
| 225 | | | | 1 | | | | |  | | | | | 235 | | | | | 14 | | | | | 3 | | | | |
|  | | | |  | | | | |  | | | | | 245 | | | | | 4 | | | | | 7 | | | | |
|  | | | |  | | | | |  | | | | | 255 | | | | | 6 | | | | | 2 | | | | |
|  | | | |  | | | | |  | | | | | 275 | | | | | 1 | | | | | 2 | | | | |
|  | | | |  | | | | |  | | | | | 285 | | | | | 2 | | | | | 0 | | | | |
|  | | | |  | | | | |  | | | | | 295 | | | | | 1 | | | | | 0 | | | | |
|  | | | |  | | | | |  | | | | | 305 | | | | |  | | | | | 2 | | | | |
| Sum | | | | 870 | | | | | 450 | | | | | Sum | | | | | 1722 | | | | | 1295 | | | | |

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| **LBB results for *Chelidonichthys spinosus*** | |
| **Priors** | |
| *Linf* | 33.5 cm SD=0.33 cm |
| *Z/K* | 10 SD=31 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 8.47 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 13.3 cm SD=1.3 cm |
| alpha | 26.2 SD=2.6 |
| **Estimates of general reference points for 2017** | |
| *Linf* | 33 (32.6-33.6) cm |
| *Lopt* | 23 cm |
| *Lopt/Linf* | 0.7 |
| *Lc\_opt* | 22 cm |
| *Lc\_opt/Linf* | 0.66 |
| *Lc50* | 13.6 (13.5-13.8) cm |
| *Lc/Linf* | 0.41 (0.41-0.42) |
| *Lc/Lc\_opt* | 0.62 |
| alpha | 0.896 (0.871-0.915) |
| *M/K* | 1.3 (1.08-1.62) |
| *F/M* | 5.99 (4.6-7.75) |
| *F/K* | 7.81 (7.11-8.44) |
| *Z/K* | 9.1 (8.52-9.74) |
| *Y/R'* | 0.0074 (0.0051-0.01) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.056 |
| *B/B0* | 0.042 (0.029-0.059) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.37 |
| *B/BMSY* | 0.11 (0.078-0.16) |

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| **LBB results for *Crangon affini****s* | |
| **Priors** | |
| *Linf* | 3.38 cm SD=0.034 cm |
| *Z/K* | 3.2 SD=1.6 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 1.69 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 0.918 cm SD=0.092 cm |
| alpha | 19.9 SD=2 |
| **Estimates of general reference points for 2017** | |
| *Linf* | 3.45 (3.4-3.51) cm |
| *Lopt* | 2.3 cm |
| *Lopt/Linf* | 0.67 |
| *Lc\_opt* | 1.9 cm |
| *Lc\_opt/Linf* | 0.56 |
| *Lc50* | 0.898 (0.878-0.914) cm |
| *Lc/Linf* | 0.26 (0.25-0.27) |
| *Lc/Lc\_opt* | 0.46 |
| alpha | 5.91 (5.69-6.1) |
| *M/K* | 1.51 (1.29-1.7) |
| *F/M* | 1.16 (0.962-1.5) |
| *F/K* | 1.75 (1.58-2.08) |
| *Z/K* | 3.28 (3.11-3.47) |
| *Y/R'* | 0.031 (0.023-0.043) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.044 |
| *B/B0* | 0.21 (0.16-0.29) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.37 |
| *B/BMSY* | 0.58 (0.44-0.8) |

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| **LBB results for *Cynoglossus joyneri*** | |
| **Priors** | |
| *Linf* | 27.4 cm SD=0.27 cm |
| *Z/K* | 4.4 SD=0.41 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 2.87 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 9.18 cm SD=0.92 cm |
| alpha | 18.0 SD=1.8 |
| **Estimates of general reference points for 2017** | |
| *Linf* | 27.4 (27.0-28.0) cm |
| *Lopt* | 18 cm |
| *Lopt/Linf* | 0.66 |
| *Lc\_opt* | 17 cm |
| *Lc\_opt/Linf* | 0.60 |
| *Lc50* | 11.4 (11.2-11.6) cm |
| *Lc/Linf* | 0.42 (0.41-0.42) |
| *Lc/Lc\_opt* | 0.69 |
| alpha | 0.601 (0.586-0.623) |
| *M/K* | 1.53 (1.25-1.81) |
| *F/M* | 2.81 (2.16-3.69) |
| *F/K* | 4.35 (3.87-4.8) |
| *Z/K* | 5.87 (5.52-6.3) |
| *Y/R'* | 0.016 (0.011-0.023) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.043 |
| *B/B0* | 0.1 (0.071-0.14) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.36 |
| *B/BMSY* | 0.28 (0.19-0.39) |

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| **LBB results for *Saurida elongate*** | |
| **Priors** | |
| *Linf* | 41 cm SD=0.41 cm |
| *Z/K* | 3.9 SD=2.6 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 2.45 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 12.2 cm SD=1.2 cm |
| alpha | 17.2 SD=1.7 |
| **Estimates of general reference points for 2017** | |
| *Linf* | 42 (41.1-42.6) cm |
| *Lopt* | 26 cm |
| *Lopt/Linf* | 0.62 |
| *Lc\_opt* | 24 cm |
| *Lc\_opt/Linf* | 0.56 |
| *Lc50* | 18.4 (17.9-18.7) cm |
| *Lc/Linf* | 0.44 (0.43-0.44) |
| *Lc/Lc\_opt* | 0.78 |
| alpha | 0.349 (0.338-0.36) |
| *M/K* | 1.82 (1.6-2.09) |
| *F/M* | 2.45 (1.98-2.94) |
| *F/K* | 4.47 (4.06-5.01) |
| *Z/K* | 6.32 (5.82-6.69) |
| *Y/R'* | 0.017 (0.013-0.022) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.032 |
| *B/B0* | 0.13 (0.099-0.17) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.35 |
| *B/BMSY* | 0.37 (0.28-0.47) |

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| **LBB results for *Trachysalambria curvirostris*** | |
| **Priors** | |
| *Linf* | 4.25 cm SD=0.042 cm |
| *Z/K* | 1.9 SD=1.3 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 0.395 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 1.79 cm SD=0.18 cm |
| alpha | 9.43 SD=0.94 |
| **Estimates of general reference points for 2017** | |
| *Linf* | 4.18 (4.11-4.25) cm |
| *Lopt* | 2.9 cm |
| *Lopt/Linf* | 0.7 |
| *Lc\_opt* | 2.5 cm |
| *Lc\_opt/Linf* | 0.6 |
| *Lc50* | 1.96 (1.88-2.04) cm |
| *Lc/Linf* | 0.47 (0.45-0.49) |
| *Lc/Lc\_opt* | 0.78 |
| alpha | 2.46 (2.38-2.54) |
| *M/K* | 1.27 (1.04-1.58) |
| *F/M* | 1.3 (0.891-1.75) |
| *F/K* | 1.65 (1.34-2.03) |
| *Z/K* | 2.92 (2.68-3.26) |
| *Y/R'* | 0.056 (0.033-0.083) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.054 |
| *B/B0* | 0.26 (0.15-0.39) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.38 |
| *B/BMSY* | 0.7 (0.41-1) |

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| **LBB results for *Hexagrammos agrammus*** | |
| **Priors** | |
| *Linf* | 28.8 cm SD=0.29 cm |
| *Z/K* | 5.6 SD=4.3 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 4.06 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 12.2 cm SD=1.2 cm |
| alpha | 17 SD=1.7 |
| **Estimates of general reference points for 2011** | |
| *Linf* | 28.4 (27.9-29) cm |
| *Lopt* | 20 cm |
| *Lopt/Linf* | 0.72 |
| *Lc\_opt* | 19 cm |
| *Lc\_opt/Linf* | 0.67 |
| *Lc50* | 12.2 (12.1-12.4) cm |
| *Lc/Linf* | 0.43 (0.43-0.44) |
| *Lc/Lc\_opt* | 0.64 |
| alpha | 0.694 (0.673-0.71) |
| *M/K* | 1.16 (0.888-1.46) |
| *F/M* | 3.75 (2.7-5.4) |
| *F/K* | 4.34 (3.76-4.89) |
| *Z/K* | 5.48 (5.09-5.93) |
| *Y/R'* | 0.017 (0.01-0.026) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.065 |
| *B/B0* | 0.076 (0.046-0.12) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.38 |
| *B/BMSY* | 0.21 (0.12-0.3) |

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| **LBB results for *Muraenesox cinereus*** | |
| **Priors** | |
| *Linf* | 52.5 cm SD=0.52 cm |
| *Z/K* | 4.1 SD=0.16 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 2.56 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 20.4 cm SD=2 cm |
| alpha | 16.1 SD=1.6 |
| **Estimates of general reference points for 2003** | |
| *Linf* | 53.4 (52.5-54.1) cm |
| *Lopt* | 36 cm |
| *Lopt/Linf* | 0.67 |
| *Lc\_opt* | 32 cm |
| *Lc\_opt/Linf* | 0.6 |
| *Lc50* | 21.4 (21-21.9) cm |
| *Lc/Linf* | 0.4 (0.39-0.41) |
| *Lc/Lc\_opt* | 0.67 |
| alpha | 0.312 (0.303-0.325) |
| *M/K* | 1.48 (1.19-1.7) |
| *F/M* | 2.3 (1.8-3.33) |
| *F/K* | 3.45 (2.97-4.05) |
| *Z/K* | 4.91 (4.52-5.27) |
| *Y/R'* | 0.021 (0.014-0.032) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.045 |
| *B/B0* | 0.13 (0.085-0.19 |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.37 |
| *B/BMSY* | 0.35 (0.23-0.52) |

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| **LBB results for *Pennahia pawak*** | |
| **Priors** | |
| *Linf* | 24.5 cm SD=0.24 cm |
| *Z/K* | 1.7 SD=0.36 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 0.165 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 12.2 cm SD=1.2 cm |
| alpha | 12.8 SD=1.3 |
| **Estimates of general reference points for 2009** | |
| *Linf* | 24.2 (23.9-24.5) cm |
| *Lopt* | 16 cm |
| *Lopt/Linf* | 0.64 |
| *Lc\_opt* | 11 cm |
| *Lc\_opt/Linf* | 0.47 |
| *Lc50* | 12.6 (12.4-12.9) cm |
| *Lc/Linf* | 0.52 (0.51-0.53) |
| *Lc/Lc\_opt* | 1.1 |
| alpha | 0.562 (0.541-0.582) |
| *M/K* | 1.67 (1.35-1.89) |
| *F/M* | 0.27 (0.0875-0.616) |
| *F/K* | 0.458 (0.164-0.852) |
| *Z/K* | 2.09 (1.93-2.3) |
| *Y/R'* | 0.02 (0.00098-0.051) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.037 |
| *B/B0* | 0.7 (0.034-1.8) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.36 |
| *B/BMSY* | 1.9 (0.094-4.9) |

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| **LBB results for *Setipinna taty*** | |
| **Priors** | |
| *Linf* | 20.5 cm SD=0.2 cm |
| *Z/K* | 3.2 SD=0.32 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 1.69 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 7.65 cm SD=0.77 cm |
| alpha | 24.4 SD=2.4 |
| **Estimates of general reference points for 2005** | |
| *Linf* | 20 (19.6-20.4) cm |
| *Lopt* | 14 cm |
| *Lopt/Linf* | 0.68 |
| *Lc\_opt* | 12 cm |
| *Lc\_opt/Linf* | 0.59 |
| *Lc50* | 7.08 (7-7.14)) cm |
| *Lc/Linf* | 0.35 (0.35-0.36) |
| *Lc/Lc\_opt* | 0.6 |
| alpha | 1.44 (1.4-1.48) |
| *M/K* | 1.39 (1.06-1.62) |
| *F/M* | 1.52 (1.11-2.28) |
| *F/K* | 2.12 (1.75-2.48) |
| *Z/K* | 3.48 (3.27-3.7) |
| *Y/R'* | 0.035 (0.021-0.054) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.051 |
| *B/B0* | 0.19 (0.11-0.29) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.37 |
| *B/BMSY* | 0.51 (0.3-0.79) |

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| LBB results for [*Decapterus*](http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?genid=2102)[*maruadsi*](http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?spid=62260) | |
| **Priors** | |
| *Linf* | 27 cm SD=0.27 cm |
| *Z/K* | 1.4 SD=0.23 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 0.3 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 12.2 cm SD=1.2 cm |
| alpha | 9.14 SD=0.91 |
| **Estimates of general reference points for 1998** | |
| *Linf* | 27.9 (27.6-28.2) cm |
| *Lopt* | 20 cm |
| *Lopt/Linf* | 0.72 |
| *Lc\_opt* | 17 cm |
| *Lc\_opt/Linf* | 0.61 |
| *Lc50* | 15.4 (14.9-15.8) cm |
| *Lc/Linf* | 0.55 (0.53-0.57) |
| *Lc/Lc\_opt* | 0.9 |
| alpha | 0.367 (0.356-0.376) |
| *M/K* | 1.19 (0.901-1.5) |
| *F/M* | 1.27 (0.756-1.97) |
| *F/K* | 1.52 (1.11-1.91) |
| *Z/K* | 2.72 (2.49-2.95) |
| *Y/R'* | 0.064 (0.03-0.11) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.061 |
| *B/B0* | 0.3 (0.14-0.5) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.38 |
| *B/BMSY* | 0.78 (0.36-1.3) |

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| **LBB results for** [***Decapterus***](http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?genid=2102)[***maruadsi***](http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?spid=62260) | |
| **Priors** | |
| *Linf* | 27 cm SD=0.27 cm |
| *Z/K* | 4.2 SD=0.18 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 2.69 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 12.2 cm SD=1.2 cm |
| alpha | 21.5 SD=2.1 |
| **Estimates of general reference points for 2009** | |
| *Linf* | 27.8 (27.4-28.2) cm |
| *Lopt* | 18 cm |
| *Lopt/Linf* | 0.64 |
| *Lc\_opt* | 16 cm |
| *Lc\_opt/Linf* | 0.57 |
| *Lc50* | 13 (12.8-13.2) cm |
| *Lc/Linf* | 0.47 (0.46-0.47) |
| *Lc/Lc\_opt* | 0.81 |
| alpha | 0.731 (0.706-0.76) |
| *M/K* | 1.66 (1.31-1.97) |
| *F/M* | 2.1 (1.59-2.92) |
| *F/K* | 3.51 (3.01-4) |
| *Z/K* | 5.14 (4.81-5.52) |
| *Y/R'* | 0.027 (0.018-0.04) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.038 |
| *B/B0* | 0.17 (0.11-0.24) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.36 |
| *B/BMSY* | 0.46 (0.3-0.68) |

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| **LBB results for *Evynnis cardinalis*** | |
| **Priors** | |
| *Linf* | 21.5 cm SD=0.21 cm |
| *Z/K* | 2.6 SD=0.18 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 1.05 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 9.18 cm SD=0.92 cm |
| Alpha | 11.5 SD=1.2 |
| **Estimates of general reference points for 1962** | |
| *Linf* | 21.9 (21.5-22.1) cm |
| *Lopt* | 16 cm |
| *Lopt/Linf* | 0.72 |
| *Lc\_opt* | 14 cm |
| *Lc\_opt/Linf* | 0.64 |
| *Lc50* | 9.96 (9.75-10.2) cm |
| *Lc/Linf* | 0.46 (0.45-0.47) |
| *Lc/Lc\_opt* | 0.72 |
| Alpha | 0.609 (0.593-0.633) |
| *M/K* | 1.17 (0.919-1.47) |
| *F/M* | 1.91 (1.25-2.69) |
| *F/K* | 2.25 (1.84-2.57) |
| *Z/K* | 3.39 (3.19-3.72) |
| *Y/R'* | 0.045 (0.025-0.067) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.064 |
| *B/B0* | 0.17 (0.096-0.26) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.38 |
| *B/BMSY* | 0.46 (0.25-0.69) |

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| **LBB results for *Evynnis cardinalis*** | |
| **Priors** | |
| *Linf* | 21.5 cm SD=0.21 cm |
| *Z/K* | 4.9 SD=0.5 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 3.4 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 8.67 cm SD=0.87 cm |
| Alpha | 22.1 SD=2.2 |
| **Estimates of general reference points for 2006** | |
| *Linf* | 21.5 (21.2-21.8) cm |
| *Lopt* | 15 cm |
| *Lopt/Linf* | 0.7 |
| *Lc\_opt* | 14 cm |
| *Lc\_opt/Linf* | 0.65 |
| *Lc50* | 8.61 (8.51-8.68) cm |
| *Lc/Linf* | 0.4 (0.4-0.4) |
| *Lc/Lc\_opt* | 0.62 |
| Alpha | 1.25 (1.22-1.29) |
| *M/K* | 1.28 (0.979-1.54) |
| *F/M* | 3.36 (2.57-4.72) |
| *F/K* | 4.34 (3.8-4.66) |
| *Z/K* | 5.59 (5.23-5.92) |
| *Y/R'* | 0.016 (0.01-0.023) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.058 |
| *B/B0* | 0.082 (0.053-0.12) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.37 |
| *B/BMSY* | 0.22 (0.14-0.32) |

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| **LBB results for *Liparis tanakae*** | |
| **Priors** | |
| *Linf* | 53 cm SD=0.53 cm |
| *Z/K* | 3.4 SD=0.42 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 1.86 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 29.6 cm SD=3 cm |
| alpha | 20.3 SD=2 |
| **Estimates of general reference points for 2005** | |
| *Linf* | 54.5 (53.8-55.5) cm |
| *Lopt* | 35 cm |
| *Lopt/Linf* | 0.64 |
| *Lc\_opt* | 30 cm |
| *Lc\_opt/Linf* | 0.56 |
| *Lc50* | 31.9 (31.5-32.3) cm |
| *Lc/Linf* | 0.58 (0.58-0.59) |
| *Lc/Lc\_opt* | 1 |
| alpha | 0.36 (0.35-0.369) |
| *M/K* | 1.65 (1.4-1.92) |
| *F/M* | 1.49 (1.12-1.97) |
| *F/K* | 2.41 (2.11-2.93) |
| *Z/K* | 4.11 (3.8-4.49) |
| *Y/R'* | 0.041 (0.028-0.059) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.038 |
| *B/B0* | 0.29 (0.2-0.41) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.36 |
| *B/BMSY* | 0.8 (0.55-1.1) |

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| **LBB results for *Liparis tanakae*** | |
| **Priors** | |
| *Linf* | 53 cm SD=0.53 cm |
| *Z/K* | 4 SD=1.2 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 2.55 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 28.6 cm SD=2.9 cm |
| alpha | 15.6 SD=1.6 |
| **Estimates of general reference points for 2010** | |
| *Linf* | 53.1 (52.5-53.9) cm |
| *Lopt* | 39 cm |
| *Lopt/Linf* | 0.73 |
| *Lc\_opt* | 36 cm |
| *Lc\_opt/Linf* | 0.68 |
| *Lc50* | 32 (31.6-32.5) cm |
| *Lc/Linf* | 0.6 (0.59-0.61) |
| *Lc/Lc\_opt* | 0.88 |
| alpha | 0.327 (0.318-0.338) |
| *M/K* | 1.1 (0.906-1.34) |
| *F/M* | 3.96 (3.15-5.2) |
| *F/K* | 4.42 (3.98-4.98) |
| *Z/K* | 5.53 (5.13-6.03) |
| *Y/R'* | 0.035 (0.025-0.049) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.07 |
| *B/B0* | 0.11 (0.077-0.15) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.38 |
| *B/BMSY* | 0.28 (0.2-0.4) |

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| **LBB results for *Nemipterus bathybius*** | |
| **Priors** | |
| *Linf* | 24.0 cm SD=0.24 cm |
| *Z/K* | 3.3 SD=0.22 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 1.82 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 8.67 cm SD=0.87 cm |
| alpha | 15.3 SD=1.5 |
| **Estimates of general reference points for 1997** | |
| *Linf* | 24.4 (24-24.8) cm |
| *Lopt* | 16 cm |
| *Lopt/Linf* | 0.65 |
| *Lc\_opt* | 14 cm |
| *Lc\_opt/Linf* | 0.56 |
| *Lc50* | 11.2 (11-11.5) cm |
| *Lc/Linf* | 0.46 (0.45-0.47) |
| *Lc/Lc\_opt* | 0.82 |
| alpha | 0.652 (0.635-0.675) |
| *M/K* | 1.64 (1.41-1.86) |
| *F/M* | 1.43 (1.1-1.8) |
| *F/K* | 2.35 (2.05-2.74) |
| *Z/K* | 3.97 (3.77-4.32) |
| *Y/R'* | 0.038 (0.027-0.051) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.038 |
| *B/B0* | 0.24 (0.17-0.32) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.36 |
| *B/BMSY* | 0.66 (0.46-0.88) |

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| **LBB results for *Nemipterus bathybius*** | |
| **Priors** | |
| *Linf* | 24.0 cm SD=0.24 cm |
| *Z/K* | 4.3 SD=0.42 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 2.76 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 10.7 cm SD=1.1 cm |
| Alpha | 37.1 SD=3.7 |
| **Estimates of general reference points for 2009** | |
| *Linf* | 23.9 (23.5-24.2) cm |
| *Lopt* | 17 cm |
| *Lopt/Linf* | 0.7 |
| *Lc\_opt* | 15 cm |
| *Lc\_opt/Linf* | 0.64 |
| *Lc50* | 9.99 (9.96-10) cm |
| *Lc/Linf* | 0.42 (0.42-0.42) |
| *Lc/Lc\_opt* | 0.65 |
| Alpha | 1.99 (1.94-2.03) |
| *M/K* | 1.29 (1.07-1.56) |
| *F/M* | 2.88 (2.23-3.95) |
| *F/K* | 3.77 (3.41-4.22) |
| *Z/K* | 5.06 (4.86-5.33) |
| *Y/R'* | 0.022 (0.016-0.032) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.057 |
| *B/B0* | 0.1 (0.073-0.15) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.38 |
| *B/BMSY* | 0.28 (0.19-0.4) |

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| **LBB results for *Priacanthus macracanthus*** | |
| **Priors** | |
| *Linf* | 30.0 cm SD=0.3 cm |
| *Z/K* | 2.9 SD=0.12 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 1.36 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 10.2 cm SD=1 cm |
| alpha | 40.2 SD=4 |
| **Estimates of general reference points for 1999** | |
| *Linf* | 30.7 (30.2-31.2) cm |
| *Lopt* | 20 cm |
| *Lopt/Linf* | 0.65 |
| *Lc\_opt* | 16 cm |
| *Lc\_opt/Linf* | 0.53 |
| *Lc50* | 11.1 (11-11.3) cm |
| *Lc/Linf* | 0.36 (0.36-0.37) |
| *Lc/Lc\_opt* | 0.69 |
| alpha | 1 (0.957-1.06) |
| *M/K* | 1.65 (1.41-1.98) |
| *F/M* | 0.858 (0.59-1.26) |
| *F/K* | 1.42 (1.13-1.79) |
| *Z/K* | 3.08 (2.91-3.32) |
| *Y/R'* | 0.036 (0.021-0.057) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.039 |
| *B/B0* | 0.33 (0.2-0.52) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.36 |
| *B/BMSY* | 0.91 (0.55-1.4) |

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| **LBB results for *Priacanthus macracanthus*** | |
| **Priors** | |
| *Linf* | 30.0 cm SD=0.3 cm |
| *Z/K* | 2.6 SD=0.24 |
| *M/K* | 1.5 SD=0.15 |
| *F/K* | 1.14 (wide range with tau=4 in log-normal distribution) |
| *Lc* | 10.2 cm SD=1 cm |
| alpha | 15.0 SD=1.5 |
| **Estimates of general reference points for 2015** | |
| *Linf* | 30.3 (29.7-30.8) cm |
| *Lopt* | 20 cm |
| *Lopt/Linf* | 0.67 |
| *Lc\_opt* | 18 cm |
| *Lc\_opt/Linf* | 0.58 |
| *Lc50* | 9.84 (9.6-10.1) cm |
| *Lc/Linf* | 0.32 (0.32-0.33) |
| *Lc/Lc\_opt* | 0.56 |
| alpha | 0.51 (0.492-0.531) |
| *M/K* | 1.46 (1.2-1.73) |
| *F/M* | 1.53 (1.14-2.03) |
| *F/K* | 2.24 (1.92-2.56) |
| *Z/K* | 3.7 (3.46-3.96) |
| *Y/R'* | 0.029 (0.019-0.04) |
| *Y/R' (if F=M; Lc=Lc\_opt)* | 0.046 |
| *B/B0* | 0.18 (0.12-0.25) |
| *B/B0 (if F=M;*  *Lc = Lc\_opt)* | 0.37 |
| *B/BMSY* | 0.48 (0.32-0.67) |