Performance metric tables

Grant Adams

2022-09-10

“**Supplementary Table 4.a.1.** Summary of performance metric 1: average annual catch across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 2,091,828 | 2,976,620 | 1,623,757 | 2,091,930 | 2,091,439 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,109,822 | 2,965,906 | 1,679,994 | 2,109,947 | 2,110,537 |
|  |  | HCR 2a (PFMC) | 1,841,465 | 2,573,109 | 1,461,767 | 1,840,975 | 1,841,227 |
|  |  | HCR 2b (Dynamic PFMC) | 1,846,504 | 2,573,875 | 1,479,802 | 1,846,127 | 1,846,335 |
|  |  | HCR 3a (SESSF) | 1,844,842 | 2,592,893 | 1,431,560 | 1,845,118 | 1,846,009 |
|  |  | HCR 3b (Dynamic SESSF) | 1,861,767 | 2,596,669 | 1,491,879 | 1,861,207 | 1,861,522 |
|  |  | HCR 4 (NEFMC) | 1,575,075 | 2,993,408 | 1,705,923 | 2,136,269 | 2,136,540 |
|  |  | HCR 5 (Avg F) | 1,871,300 | 1,848,455 | 1,077,658 | 1,340,102 | 1,339,472 |
|  | *Est M* | HCR 1a (NPFMC) | 2,350,788 | 3,349,598 | 1,828,541 | 2,349,883 | 2,350,203 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,363,852 | 3,335,731 | 1,881,291 | 2,365,322 | 2,364,300 |
|  |  | HCR 2a (PFMC) | 2,148,227 | 3,027,397 | 1,695,659 | 2,148,718 | 2,147,129 |
|  |  | HCR 2b (Dynamic PFMC) | 2,153,853 | 3,027,235 | 1,717,547 | 2,153,398 | 2,152,749 |
|  |  | HCR 3a (SESSF) | 2,153,592 | 3,053,245 | 1,672,136 | 2,155,054 | 2,153,157 |
|  |  | HCR 3b (Dynamic SESSF) | 2,173,748 | 3,051,098 | 1,734,914 | 2,174,280 | 2,173,157 |
|  |  | HCR 4 (NEFMC) | 1,684,872 | 3,363,219 | 1,903,485 | 2,388,169 | 2,390,200 |
|  |  | HCR 5 (Avg F) | 2,027,015 | 1,801,993 | 1,048,507 | 1,301,952 | 1,302,083 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 2,457,425 | 3,506,366 | 1,894,717 | 2,456,389 | 2,457,108 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,467,940 | 3,479,558 | 1,956,555 | 2,467,509 | 2,468,098 |
|  |  | HCR 2a (PFMC) | 2,007,191 | 2,809,915 | 1,591,414 | 2,008,705 | 2,008,796 |
|  |  | HCR 2b (Dynamic PFMC) | 2,013,571 | 2,811,383 | 1,610,986 | 2,012,347 | 2,014,531 |
|  |  | HCR 3a (SESSF) | 2,024,325 | 2,846,402 | 1,567,536 | 2,025,319 | 2,024,288 |
|  |  | HCR 3b (Dynamic SESSF) | 2,039,122 | 2,846,365 | 1,632,325 | 2,039,798 | 2,039,469 |
|  |  | HCR 4 (NEFMC) | 1,734,720 | 3,521,602 | 1,997,447 | 2,508,395 | 2,508,109 |
|  |  | HCR 5 (Avg F) | 2,126,322 | 1,876,062 | 1,094,707 | 1,361,383 | 1,358,678 |
|  | *Est M* | HCR 1a (NPFMC) | 3,842,502 | 5,543,314 | 2,954,514 | 3,840,600 | 3,843,675 |
|  |  | HCR 1b (Dynamic NPFMC) | 3,861,742 | 5,499,268 | 3,041,569 | 3,859,532 | 3,859,538 |
|  |  | HCR 2a (PFMC) | 3,351,390 | 4,780,902 | 2,617,162 | 3,355,168 | 3,351,876 |
|  |  | HCR 2b (Dynamic PFMC) | 3,366,618 | 4,775,517 | 2,654,017 | 3,367,116 | 3,363,000 |
|  |  | HCR 3a (SESSF) | 3,342,439 | 4,791,559 | 2,562,084 | 3,342,939 | 3,342,513 |
|  |  | HCR 3b (Dynamic SESSF) | 3,386,206 | 4,804,328 | 2,681,179 | 3,387,921 | 3,384,612 |
|  |  | HCR 4 (NEFMC) | 2,197,823 | 5,505,724 | 3,053,928 | 3,872,918 | 3,867,875 |
|  |  | HCR 5 (Avg F) | 3,034,820 | 1,870,808 | 1,082,497 | 1,347,387 | 1,345,585 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 2,920,761 | 3,627,794 | 2,437,015 | 2,793,160 | 2,982,140 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,907,407 | 3,586,564 | 2,462,184 | 2,786,310 | 2,970,337 |
|  |  | HCR 2a (PFMC) | 2,407,373 | 2,896,112 | 2,052,327 | 2,311,319 | 2,454,792 |
|  |  | HCR 2b (Dynamic PFMC) | 2,406,803 | 2,894,192 | 2,060,281 | 2,313,437 | 2,455,561 |
|  |  | HCR 3a (SESSF) | 2,385,181 | 2,875,172 | 2,020,285 | 2,268,145 | 2,445,729 |
|  |  | HCR 3b (Dynamic SESSF) | 2,389,898 | 2,871,527 | 2,046,089 | 2,278,495 | 2,447,587 |
|  |  | HCR 4 (NEFMC) | 2,067,435 | 3,649,752 | 2,515,946 | 2,840,799 | 3,022,520 |
|  |  | HCR 5 (Avg F) | 2,497,025 | 2,038,487 | 1,444,296 | 1,586,552 | 1,745,557 |
|  | *Est M* | HCR 1a (NPFMC) | 3,604,779 | 4,523,617 | 3,009,277 | 3,457,920 | 3,677,037 |
|  |  | HCR 1b (Dynamic NPFMC) | 3,593,574 | 4,483,422 | 3,041,602 | 3,461,044 | 3,667,759 |
|  |  | HCR 2a (PFMC) | 3,128,255 | 3,835,812 | 2,650,914 | 3,010,349 | 3,187,538 |
|  |  | HCR 2b (Dynamic PFMC) | 3,128,717 | 3,833,528 | 2,658,509 | 3,014,190 | 3,187,029 |
|  |  | HCR 3a (SESSF) | 3,090,346 | 3,789,623 | 2,602,305 | 2,947,852 | 3,165,200 |
|  |  | HCR 3b (Dynamic SESSF) | 3,090,078 | 3,783,142 | 2,636,606 | 2,955,357 | 3,161,603 |
|  |  | HCR 4 (NEFMC) | 2,165,563 | 4,541,512 | 3,090,729 | 3,503,415 | 3,711,555 |
|  |  | HCR 5 (Avg F) | 2,934,402 | 2,033,899 | 1,418,931 | 1,567,030 | 1,722,480 |

[1] “**Supplementary Table 4.b.1.** Summary of performance metric 1: average annual catch across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 151,077 | 216,631 | 117,329 | 151,064 | 151,071 |
|  |  | HCR 1b (Dynamic NPFMC) | 153,351 | 215,539 | 121,809 | 153,278 | 153,257 |
|  |  | HCR 2a (PFMC) | 118,650 | 165,478 | 94,457 | 118,498 | 118,571 |
|  |  | HCR 2b (Dynamic PFMC) | 119,093 | 165,909 | 95,592 | 118,944 | 119,021 |
|  |  | HCR 3a (SESSF) | 132,204 | 187,928 | 101,851 | 132,065 | 131,947 |
|  |  | HCR 3b (Dynamic SESSF) | 135,193 | 188,583 | 108,220 | 135,273 | 135,475 |
|  |  | HCR 4 (NEFMC) | 156,448 | 218,401 | 124,716 | 156,224 | 156,293 |
|  |  | HCR 5 (Avg F) | 129,805 | 174,274 | 100,040 | 124,762 | 124,746 |
|  | *Est M* | HCR 1a (NPFMC) | 162,486 | 235,409 | 125,642 | 162,581 | 162,422 |
|  |  | HCR 1b (Dynamic NPFMC) | 164,770 | 234,168 | 130,405 | 164,475 | 164,353 |
|  |  | HCR 2a (PFMC) | 150,805 | 214,829 | 119,273 | 150,573 | 150,846 |
|  |  | HCR 2b (Dynamic PFMC) | 150,780 | 214,413 | 119,942 | 150,644 | 150,374 |
|  |  | HCR 3a (SESSF) | 150,349 | 216,334 | 115,677 | 150,514 | 150,697 |
|  |  | HCR 3b (Dynamic SESSF) | 152,460 | 217,403 | 120,918 | 151,821 | 152,653 |
|  |  | HCR 4 (NEFMC) | 177,223 | 249,955 | 141,241 | 176,622 | 177,381 |
|  |  | HCR 5 (Avg F) | 128,697 | 191,135 | 106,506 | 134,297 | 133,981 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 144,138 | 205,693 | 111,833 | 144,041 | 144,048 |
|  |  | HCR 1b (Dynamic NPFMC) | 146,308 | 204,718 | 116,243 | 146,044 | 146,238 |
|  |  | HCR 2a (PFMC) | 114,587 | 159,116 | 91,407 | 114,439 | 114,330 |
|  |  | HCR 2b (Dynamic PFMC) | 114,872 | 159,295 | 92,108 | 114,670 | 114,926 |
|  |  | HCR 3a (SESSF) | 127,114 | 179,939 | 98,135 | 127,152 | 126,877 |
|  |  | HCR 3b (Dynamic SESSF) | 129,636 | 180,305 | 103,874 | 129,484 | 129,440 |
|  |  | HCR 4 (NEFMC) | 149,022 | 208,750 | 119,016 | 148,327 | 148,395 |
|  |  | HCR 5 (Avg F) | 138,288 | 165,960 | 95,374 | 118,680 | 119,022 |
|  | *Est M* | HCR 1a (NPFMC) | 139,497 | 195,183 | 105,971 | 139,363 | 138,822 |
|  |  | HCR 1b (Dynamic NPFMC) | 135,186 | 192,679 | 109,474 | 135,389 | 134,959 |
|  |  | HCR 2a (PFMC) | 136,486 | 174,939 | 100,392 | 124,802 | 124,369 |
|  |  | HCR 2b (Dynamic PFMC) | 121,327 | 171,814 | 98,974 | 123,123 | 123,440 |
|  |  | HCR 3a (SESSF) | 121,767 | 184,182 | 100,744 | 132,431 | 130,796 |
|  |  | HCR 3b (Dynamic SESSF) | 122,515 | 180,098 | 102,810 | 129,422 | 128,439 |
|  |  | HCR 4 (NEFMC) | 150,557 | 211,558 | 121,531 | 150,996 | 150,917 |
|  |  | HCR 5 (Avg F) | 142,648 | 162,801 | 93,103 | 116,887 | 117,070 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 294,308 | 336,653 | 255,719 | 233,008 | 331,951 |
|  |  | HCR 1b (Dynamic NPFMC) | 293,632 | 332,708 | 256,929 | 235,468 | 330,353 |
|  |  | HCR 2a (PFMC) | 215,151 | 248,766 | 188,121 | 177,933 | 239,263 |
|  |  | HCR 2b (Dynamic PFMC) | 215,003 | 248,937 | 188,357 | 179,044 | 239,718 |
|  |  | HCR 3a (SESSF) | 223,488 | 254,570 | 196,122 | 177,123 | 252,340 |
|  |  | HCR 3b (Dynamic SESSF) | 223,932 | 255,057 | 197,104 | 182,000 | 253,629 |
|  |  | HCR 4 (NEFMC) | 299,872 | 340,813 | 263,207 | 242,257 | 338,819 |
|  |  | HCR 5 (Avg F) | 160,357 | 138,193 | 111,415 | 99,647 | 141,747 |
|  | *Est M* | HCR 1a (NPFMC) | 467,494 | 525,978 | 405,488 | 364,268 | 535,430 |
|  |  | HCR 1b (Dynamic NPFMC) | 467,352 | 525,174 | 409,771 | 369,720 | 535,204 |
|  |  | HCR 2a (PFMC) | 445,938 | 510,928 | 389,274 | 358,810 | 500,423 |
|  |  | HCR 2b (Dynamic PFMC) | 448,314 | 509,057 | 390,304 | 360,581 | 503,188 |
|  |  | HCR 3a (SESSF) | 387,514 | 433,030 | 339,293 | 298,603 | 446,070 |
|  |  | HCR 3b (Dynamic SESSF) | 388,238 | 435,361 | 344,018 | 305,454 | 447,622 |
|  |  | HCR 4 (NEFMC) | 499,336 | 561,018 | 437,900 | 396,563 | 566,826 |
|  |  | HCR 5 (Avg F) | 127,912 | 163,194 | 128,448 | 114,948 | 165,065 |

[1] “**Supplementary Table 4.a.2.** Summary of performance metric 2: average interannual variation in catch (IAV) across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 78,018 | 77,665 | 83,975 | 78,031 | 77,904 |
|  |  | HCR 1b (Dynamic NPFMC) | 66,955 | 82,272 | 64,483 | 67,103 | 66,737 |
|  |  | HCR 2a (PFMC) | 29,866 | 38,601 | 29,185 | 29,832 | 30,027 |
|  |  | HCR 2b (Dynamic PFMC) | 28,464 | 38,577 | 25,691 | 28,393 | 28,402 |
|  |  | HCR 3a (SESSF) | 43,623 | 42,383 | 61,107 | 43,471 | 43,574 |
|  |  | HCR 3b (Dynamic SESSF) | 29,911 | 40,299 | 27,507 | 30,010 | 30,041 |
|  |  | HCR 4 (NEFMC) | 25,282 | 69,073 | 53,540 | 55,879 | 55,717 |
|  |  | HCR 5 (Avg F) | 40,871 | 16,675 | 9,101 | 11,066 | 11,120 |
|  | *Est M* | HCR 1a (NPFMC) | 288,607 | 237,786 | 345,417 | 288,490 | 288,430 |
|  |  | HCR 1b (Dynamic NPFMC) | 160,388 | 164,909 | 174,212 | 160,929 | 160,652 |
|  |  | HCR 2a (PFMC) | 63,806 | 72,021 | 66,895 | 63,846 | 63,763 |
|  |  | HCR 2b (Dynamic PFMC) | 59,914 | 70,894 | 59,533 | 59,641 | 59,992 |
|  |  | HCR 3a (SESSF) | 102,656 | 86,655 | 137,222 | 103,297 | 103,264 |
|  |  | HCR 3b (Dynamic SESSF) | 66,983 | 76,887 | 68,541 | 66,978 | 66,843 |
|  |  | HCR 4 (NEFMC) | 56,419 | 146,868 | 162,142 | 147,532 | 147,469 |
|  |  | HCR 5 (Avg F) | 101,770 | 15,851 | 8,622 | 10,367 | 10,430 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 64,363 | 71,542 | 68,068 | 64,101 | 64,304 |
|  |  | HCR 1b (Dynamic NPFMC) | 59,549 | 79,700 | 53,491 | 59,639 | 59,479 |
|  |  | HCR 2a (PFMC) | 27,216 | 38,026 | 25,245 | 27,298 | 27,159 |
|  |  | HCR 2b (Dynamic PFMC) | 26,146 | 37,826 | 22,449 | 26,415 | 26,266 |
|  |  | HCR 3a (SESSF) | 35,663 | 40,062 | 51,365 | 35,901 | 35,935 |
|  |  | HCR 3b (Dynamic SESSF) | 27,567 | 38,950 | 24,152 | 27,651 | 27,557 |
|  |  | HCR 4 (NEFMC) | 23,679 | 66,746 | 43,445 | 49,003 | 48,848 |
|  |  | HCR 5 (Avg F) | 36,259 | 16,992 | 9,119 | 11,252 | 11,228 |
|  | *Est M* | HCR 1a (NPFMC) | 390,806 | 378,169 | 443,577 | 392,149 | 391,450 |
|  |  | HCR 1b (Dynamic NPFMC) | 246,091 | 318,768 | 229,677 | 245,991 | 246,740 |
|  |  | HCR 2a (PFMC) | 115,697 | 150,996 | 109,811 | 115,529 | 115,490 |
|  |  | HCR 2b (Dynamic PFMC) | 109,063 | 149,145 | 96,910 | 109,897 | 108,824 |
|  |  | HCR 3a (SESSF) | 172,830 | 164,841 | 218,697 | 173,480 | 171,424 |
|  |  | HCR 3b (Dynamic SESSF) | 117,908 | 155,791 | 107,601 | 117,688 | 118,328 |
|  |  | HCR 4 (NEFMC) | 80,457 | 268,334 | 209,638 | 217,563 | 217,689 |
|  |  | HCR 5 (Avg F) | 148,776 | 17,718 | 9,193 | 11,398 | 11,330 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 117,159 | 147,857 | 113,964 | 123,324 | 113,651 |
|  |  | HCR 1b (Dynamic NPFMC) | 118,183 | 162,605 | 105,789 | 121,471 | 116,381 |
|  |  | HCR 2a (PFMC) | 55,293 | 80,302 | 48,176 | 56,830 | 54,332 |
|  |  | HCR 2b (Dynamic PFMC) | 54,468 | 81,022 | 46,638 | 56,923 | 53,930 |
|  |  | HCR 3a (SESSF) | 64,065 | 87,173 | 66,079 | 70,673 | 61,607 |
|  |  | HCR 3b (Dynamic SESSF) | 60,233 | 90,996 | 51,294 | 62,859 | 58,593 |
|  |  | HCR 4 (NEFMC) | 48,760 | 133,914 | 87,152 | 100,689 | 96,471 |
|  |  | HCR 5 (Avg F) | 73,077 | 35,684 | 18,262 | 23,459 | 22,684 |
|  | *Est M* | HCR 1a (NPFMC) | 481,250 | 478,117 | 524,740 | 502,682 | 470,656 |
|  |  | HCR 1b (Dynamic NPFMC) | 325,467 | 481,886 | 477,315 | 473,357 | 447,410 |
|  |  | HCR 2a (PFMC) | 136,519 | 191,254 | 155,808 | 163,204 | 155,054 |
|  |  | HCR 2b (Dynamic PFMC) | 132,673 | 190,465 | 148,524 | 158,647 | 152,146 |
|  |  | HCR 3a (SESSF) | 184,706 | 253,604 | 265,359 | 256,479 | 229,616 |
|  |  | HCR 3b (Dynamic SESSF) | 154,460 | 242,838 | 204,207 | 214,632 | 200,355 |
|  |  | HCR 4 (NEFMC) | 106,521 | 369,118 | 352,218 | 351,294 | 334,825 |
|  |  | HCR 5 (Avg F) | 194,235 | 36,174 | 18,055 | 23,340 | 22,426 |

[1] “**Supplementary Table 4.b.2.** Summary of performance metric 2: average interannual variation in catch (IAV) across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 21,542 | 28,281 | 19,255 | 21,489 | 21,529 |
|  |  | HCR 1b (Dynamic NPFMC) | 19,433 | 27,912 | 15,194 | 19,069 | 19,279 |
|  |  | HCR 2a (PFMC) | 9,385 | 13,536 | 7,699 | 9,376 | 9,209 |
|  |  | HCR 2b (Dynamic PFMC) | 9,056 | 13,297 | 7,235 | 9,026 | 9,000 |
|  |  | HCR 3a (SESSF) | 15,280 | 19,462 | 14,612 | 15,444 | 15,078 |
|  |  | HCR 3b (Dynamic SESSF) | 12,160 | 17,960 | 9,655 | 11,930 | 12,182 |
|  |  | HCR 4 (NEFMC) | 17,099 | 24,715 | 13,853 | 16,957 | 17,003 |
|  |  | HCR 5 (Avg F) | 11,244 | 15,646 | 8,190 | 10,406 | 10,326 |
|  | *Est M* | HCR 1a (NPFMC) | 24,622 | 32,135 | 22,081 | 24,750 | 24,591 |
|  |  | HCR 1b (Dynamic NPFMC) | 22,320 | 31,771 | 17,866 | 22,012 | 21,747 |
|  |  | HCR 2a (PFMC) | 14,881 | 21,995 | 12,104 | 14,707 | 14,699 |
|  |  | HCR 2b (Dynamic PFMC) | 13,705 | 21,620 | 10,683 | 13,907 | 13,841 |
|  |  | HCR 3a (SESSF) | 19,868 | 24,982 | 19,052 | 20,165 | 20,133 |
|  |  | HCR 3b (Dynamic SESSF) | 15,062 | 23,066 | 11,868 | 14,799 | 14,833 |
|  |  | HCR 4 (NEFMC) | 20,784 | 31,340 | 17,446 | 20,822 | 21,251 |
|  |  | HCR 5 (Avg F) | 10,092 | 16,933 | 8,526 | 10,838 | 10,725 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 18,635 | 24,507 | 16,622 | 18,749 | 18,693 |
|  |  | HCR 1b (Dynamic NPFMC) | 16,734 | 24,326 | 13,605 | 16,582 | 16,681 |
|  |  | HCR 2a (PFMC) | 8,349 | 12,061 | 6,968 | 8,386 | 8,256 |
|  |  | HCR 2b (Dynamic PFMC) | 8,026 | 11,930 | 6,370 | 8,041 | 8,074 |
|  |  | HCR 3a (SESSF) | 13,360 | 17,168 | 12,626 | 13,416 | 13,228 |
|  |  | HCR 3b (Dynamic SESSF) | 10,479 | 15,894 | 8,403 | 10,628 | 10,428 |
|  |  | HCR 4 (NEFMC) | 15,359 | 22,168 | 12,597 | 14,950 | 15,212 |
|  |  | HCR 5 (Avg F) | 12,634 | 13,688 | 6,946 | 8,884 | 9,031 |
|  | *Est M* | HCR 1a (NPFMC) | 17,843 | 20,559 | 14,704 | 17,893 | 17,588 |
|  |  | HCR 1b (Dynamic NPFMC) | 14,002 | 20,494 | 11,820 | 14,061 | 14,021 |
|  |  | HCR 2a (PFMC) | 12,144 | 13,605 | 8,382 | 9,626 | 9,511 |
|  |  | HCR 2b (Dynamic PFMC) | 8,514 | 12,847 | 7,054 | 8,694 | 8,700 |
|  |  | HCR 3a (SESSF) | 12,213 | 17,775 | 14,526 | 15,522 | 14,928 |
|  |  | HCR 3b (Dynamic SESSF) | 9,164 | 15,725 | 8,771 | 10,938 | 10,823 |
|  |  | HCR 4 (NEFMC) | 14,553 | 21,119 | 12,799 | 14,564 | 14,622 |
|  |  | HCR 5 (Avg F) | 13,055 | 12,197 | 6,663 | 8,277 | 8,327 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 24,305 | 29,674 | 20,315 | 21,135 | 26,337 |
|  |  | HCR 1b (Dynamic NPFMC) | 24,561 | 30,839 | 20,418 | 20,282 | 27,527 |
|  |  | HCR 2a (PFMC) | 12,209 | 15,145 | 10,333 | 10,520 | 13,375 |
|  |  | HCR 2b (Dynamic PFMC) | 12,501 | 15,239 | 10,484 | 10,322 | 13,584 |
|  |  | HCR 3a (SESSF) | 15,123 | 19,419 | 13,502 | 14,844 | 16,522 |
|  |  | HCR 3b (Dynamic SESSF) | 14,489 | 18,399 | 12,338 | 12,396 | 16,737 |
|  |  | HCR 4 (NEFMC) | 22,625 | 28,003 | 19,142 | 19,380 | 25,487 |
|  |  | HCR 5 (Avg F) | 9,492 | 9,239 | 6,462 | 6,552 | 8,269 |
|  | *Est M* | HCR 1a (NPFMC) | 66,315 | 80,877 | 56,548 | 61,035 | 72,137 |
|  |  | HCR 1b (Dynamic NPFMC) | 67,319 | 85,364 | 56,695 | 57,740 | 74,747 |
|  |  | HCR 2a (PFMC) | 44,066 | 54,673 | 37,357 | 37,477 | 49,088 |
|  |  | HCR 2b (Dynamic PFMC) | 44,028 | 54,298 | 36,899 | 36,257 | 49,879 |
|  |  | HCR 3a (SESSF) | 45,699 | 56,124 | 40,519 | 44,565 | 48,124 |
|  |  | HCR 3b (Dynamic SESSF) | 41,695 | 53,426 | 35,347 | 36,659 | 46,401 |
|  |  | HCR 4 (NEFMC) | 63,831 | 78,077 | 53,996 | 54,191 | 70,642 |
|  |  | HCR 5 (Avg F) | 8,225 | 11,984 | 8,124 | 8,148 | 10,539 |

[1] “**Supplementary Table 4.a.3.** Summary of performance metric 3: probability of the fishery being open across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.3.** Summary of performance metric 3: probability of the fishery being open across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.03 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.02 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0.01 | 0.01 | 0.02 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.a.4.** Summary of performance metric 4: average relative mean squared error in estimate of spawning biomass in 2060 across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 4 (NEFMC) | 0.04 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.02 | 0.05 | 0.05 | 0.05 | 0.05 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.08 | 0.08 | 0.09 | 0.08 | 0.08 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
|  |  | HCR 2a (PFMC) | 0.1 | 0.11 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 2b (Dynamic PFMC) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 3a (SESSF) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 3b (Dynamic SESSF) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 4 (NEFMC) | 0.11 | 0.08 | 0.08 | 0.08 | 0.08 |
|  |  | HCR 5 (Avg F) | 0.1 | 0.13 | 0.13 | 0.13 | 0.13 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0.01 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.01 | 0 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0.01 | 0 | 0.01 | 0.01 |
|  |  | HCR 3a (SESSF) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.01 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.01 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3a (SESSF) | 0.02 | 0.01 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) | 0.02 | 0.01 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 4 (NEFMC) | 0.06 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.03 | 0.1 | 0.06 | 0.08 | 0.07 |

[1] “**Supplementary Table 4.b.4.** Summary of performance metric 4: average relative mean squared error in estimate of spawning biomass in 2060 across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.08 | 0.1 | 0.08 | 0.08 | 0.08 |
|  |  | HCR 2b (Dynamic PFMC) | 0.08 | 0.1 | 0.07 | 0.08 | 0.08 |
|  |  | HCR 3a (SESSF) | 0.05 | 0.05 | 0.05 | 0.04 | 0.05 |
|  |  | HCR 3b (Dynamic SESSF) | 0.04 | 0.05 | 0.03 | 0.04 | 0.04 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.03 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.17 | 0.17 | 0.12 | 0.14 | 0.14 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.03 | 0.02 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 2b (Dynamic PFMC) | 0.03 | 0.02 | 0.02 | 0.02 | 0.03 |
|  |  | HCR 3a (SESSF) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.01 | 0.03 | 0.01 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.05 | 0.04 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 2b (Dynamic PFMC) | 0.05 | 0.04 | 0.05 | 0.04 | 0.05 |
|  |  | HCR 3a (SESSF) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 3b (Dynamic SESSF) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.02 | 0.02 | 0.03 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.07 | 0.1 | 0.09 | 0.11 | 0.09 |
|  | *Est M* | HCR 1a (NPFMC) | 0.07 | 0.05 | 0.07 | 0.05 | 0.08 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.07 | 0.05 | 0.07 | 0.04 | 0.09 |
|  |  | HCR 2a (PFMC) | 0.14 | 0.11 | 0.15 | 0.1 | 0.16 |
|  |  | HCR 2b (Dynamic PFMC) | 0.14 | 0.11 | 0.14 | 0.09 | 0.16 |
|  |  | HCR 3a (SESSF) | 0.08 | 0.06 | 0.08 | 0.06 | 0.09 |
|  |  | HCR 3b (Dynamic SESSF) | 0.08 | 0.06 | 0.09 | 0.04 | 0.1 |
|  |  | HCR 4 (NEFMC) | 0.07 | 0.05 | 0.07 | 0.04 | 0.08 |
|  |  | HCR 5 (Avg F) | 0.1 | 0.16 | 0.1 | 0.13 | 0.1 |

[1] “**Supplementary Table 4.a.5.** Summary of performance metric 5: probability that the population is perceived as undergoing overfishing in the terminal year of the EM across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.03 | 0.03 | 0.02 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.33 | 0.99 | 0.99 | 0.99 | 0.99 |
|  |  | HCR 5 (Avg F) | 0.66 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.04 | 0.06 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.03 | 0.05 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 2a (PFMC) | 0.05 | 0.13 | 0.06 | 0.07 | 0.07 |
|  |  | HCR 2b (Dynamic PFMC) | 0.05 | 0.12 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.06 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 5 (Avg F) | 0.03 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.5.** Summary of performance metric 5: probability that the population is perceived as undergoing overfishing in the terminal year of the EM across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.04 | 0.03 | 0.06 | 0.04 | 0.04 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.12 | 0.1 | 0.14 | 0.12 | 0.12 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.1 | 0.09 | 0.12 | 0.1 | 0.1 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0 | 0.01 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.03 | 0.02 | 0.05 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.09 | 0.06 | 0.11 | 0.09 | 0.09 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.09 | 0.07 | 0.08 | 0.08 | 0.09 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0.01 | 0 | 0.02 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0.01 | 0 | 0.02 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.03 | 0.08 | 0.01 | 0.11 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.03 | 0.09 | 0.02 | 0.12 | 0.01 |
|  |  | HCR 2a (PFMC) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.a.6.** Summary of performance metric 6: probability that the population is perceived to be overfished in the terminal year of the EM across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.03 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.06 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0.07 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.01 | 0.12 | 0.03 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.02 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.03 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0.09 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0 | 0.1 | 0.02 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0.01 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.02 | 0.04 | 0.03 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.6.** Summary of performance metric 6: probability that the population is perceived to be overfished in the terminal year of the EM across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0.04 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.05 | 0.02 | 0.14 | 0.05 | 0.05 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0.02 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.03 | 0.01 | 0.08 | 0.03 | 0.03 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.11 | 0.05 | 0.22 | 0.11 | 0.11 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0.01 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0.03 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.05 | 0.01 | 0.13 | 0.05 | 0.05 |
|  |  | HCR 5 (Avg F) | 0.02 | 0 | 0.01 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.03 | 0.01 | 0.06 | 0.02 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.08 | 0.03 | 0.17 | 0.07 | 0.08 |
|  |  | HCR 5 (Avg F) | 0.08 | 0 | 0.01 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0.01 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0.03 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0.03 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0.01 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0.01 | 0.01 | 0.03 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0.01 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.03 | 0.04 | 0.03 | 0.13 | 0.01 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0.01 | 0 |

[1] “**Supplementary Table 4.a.7.** Summary of performance metric 7: probability that the population is undergoing overfishing as determined from the OM across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.04 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.98 | 0.94 | 0.99 | 0.98 | 0.97 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.97 | 0.97 | 0.98 | 0.97 | 0.97 |
|  |  | HCR 2a (PFMC) | 0.99 | 1 | 0.94 | 0.99 | 0.99 |
|  |  | HCR 2b (Dynamic PFMC) | 1 | 1 | 1 | 1 | 1 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.05 | 0.06 | 0.05 | 0.05 |
|  |  | HCR 5 (Avg F) | 0.04 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0 | 0.04 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.02 | 0.01 | 0.02 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.01 | 0.01 | 0.02 | 0.01 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.32 | 0.97 | 0.97 | 0.97 | 0.97 |
|  |  | HCR 5 (Avg F) | 0.65 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.7.** Summary of performance metric 7: probability that the population is undergoing overfishing as determined from the OM across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.69 | 0.72 | 0.53 | 0.69 | 0.69 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.66 | 0.6 | 0.72 | 0.66 | 0.65 |
|  |  | HCR 2a (PFMC) | 0.07 | 0.07 | 0.08 | 0.08 | 0.07 |
|  |  | HCR 2b (Dynamic PFMC) | 0.08 | 0.07 | 0.09 | 0.08 | 0.08 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.91 | 0.93 | 0.83 | 0.92 | 0.92 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.91 | 0.9 | 0.92 | 0.91 | 0.9 |
|  |  | HCR 2a (PFMC) | 0.93 | 0.96 | 0.9 | 0.94 | 0.93 |
|  |  | HCR 2b (Dynamic PFMC) | 0.95 | 0.96 | 0.96 | 0.96 | 0.95 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.71 | 0.72 | 0.54 | 0.71 | 0.71 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.7 | 0.61 | 0.75 | 0.69 | 0.7 |
|  |  | HCR 2a (PFMC) | 0.12 | 0.1 | 0.13 | 0.12 | 0.12 |
|  |  | HCR 2b (Dynamic PFMC) | 0.13 | 0.1 | 0.14 | 0.13 | 0.13 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.47 | 0.51 | 0.32 | 0.47 | 0.47 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.25 | 0.28 | 0.32 | 0.24 | 0.25 |
|  |  | HCR 2a (PFMC) | 0.73 | 0.46 | 0.44 | 0.44 | 0.42 |
|  |  | HCR 2b (Dynamic PFMC) | 0.36 | 0.41 | 0.45 | 0.42 | 0.44 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.a.8.** Summary of performance metric 8: probability that the population is overfished as determined from the OM across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0.1 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.13 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.05 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.07 | 0 | 0.26 | 0.05 | 0.05 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.03 | 0.01 | 0.28 | 0.06 | 0.06 |
|  |  | HCR 5 (Avg F) | 0.06 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.02 | 0 | 0.16 | 0.02 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0 | 0.17 | 0.02 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.02 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0.01 | 0.02 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0 | 0.01 | 0.02 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.8.** Summary of performance metric 8: probability that the population is overfished as determined from the OM across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0.01 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.11 | 0.09 | 0.12 | 0.11 | 0.11 |
|  |  | HCR 5 (Avg F) | 0.03 | 0.01 | 0.02 | 0.02 | 0.02 |
|  | *Est M* | HCR 1a (NPFMC) | 0.03 | 0.05 | 0.02 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.19 | 0.18 | 0.19 | 0.19 | 0.19 |
|  |  | HCR 2b (Dynamic PFMC) | 0.03 | 0.02 | 0.05 | 0.03 | 0.03 |
|  |  | HCR 3a (SESSF) | 0.03 | 0.06 | 0.01 | 0.03 | 0.03 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.29 | 0.26 | 0.32 | 0.28 | 0.29 |
|  |  | HCR 5 (Avg F) | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.02 | 0.03 | 0.01 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.02 | 0 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.12 | 0.1 | 0.13 | 0.11 | 0.11 |
|  |  | HCR 5 (Avg F) | 0.08 | 0.02 | 0.02 | 0.02 | 0.02 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.01 | 0.01 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.18 | 0.09 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.03 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.15 | 0.14 | 0.16 | 0.16 | 0.15 |
|  |  | HCR 5 (Avg F) | 0.11 | 0.01 | 0.02 | 0.02 | 0.02 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0.01 | 0 | 0.02 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.03 | 0.01 | 0.05 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.04 | 0.03 | 0.08 | 0.01 |
|  |  | HCR 2a (PFMC) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0.01 | 0 | 0.02 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0.02 | 0 | 0.02 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0.02 | 0.03 | 0.02 | 0.07 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0.06 | 0.09 | 0.08 | 0.15 | 0.05 |
|  |  | HCR 5 (Avg F) | 0 | 0.01 | 0 | 0.04 | 0 |

[1] “**Supplementary Table 4.a.9.** Summary of performance metric 9: probability that the population is overfished as determined from the OM, but is perceived as not overfished by the EM across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.04 | 0.06 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.03 | 0.05 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 2a (PFMC) | 0.05 | 0.13 | 0.06 | 0.07 | 0.07 |
|  |  | HCR 2b (Dynamic PFMC) | 0.05 | 0.12 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.06 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 5 (Avg F) | 0.03 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.9.** Summary of performance metric 9: probability that the population is overfished as determined from the OM, but is perceived as not overfished by the EM across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.04 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.03 | 0.02 | 0.02 | 0.03 | 0.03 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0.01 | 0 | 0.02 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0.01 | 0 | 0.02 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.03 | 0.08 | 0.01 | 0.11 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.03 | 0.09 | 0.02 | 0.12 | 0.01 |
|  |  | HCR 2a (PFMC) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.a.10.** Summary of performance metric 10: probability that the population is not overfished as determined from the OM, but is perceived as overfished by the EM across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.04 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.95 | 0.91 | 0.96 | 0.95 | 0.95 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.97 | 0.97 | 0.98 | 0.97 | 0.97 |
|  |  | HCR 2a (PFMC) | 0.99 | 1 | 0.93 | 0.99 | 0.99 |
|  |  | HCR 2b (Dynamic PFMC) | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.04 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 5 (Avg F) | 0.02 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0 | 0.04 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.02 | 0.01 | 0.02 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.10.** Summary of performance metric 10: probability that the population is not overfished as determined from the OM, but is perceived as overfished by the EM across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.66 | 0.69 | 0.49 | 0.65 | 0.65 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.64 | 0.58 | 0.7 | 0.64 | 0.63 |
|  |  | HCR 2a (PFMC) | 0.07 | 0.07 | 0.08 | 0.08 | 0.07 |
|  |  | HCR 2b (Dynamic PFMC) | 0.08 | 0.07 | 0.09 | 0.08 | 0.08 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.79 | 0.83 | 0.7 | 0.8 | 0.8 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.8 | 0.81 | 0.81 | 0.81 | 0.8 |
|  |  | HCR 2a (PFMC) | 0.93 | 0.95 | 0.89 | 0.93 | 0.93 |
|  |  | HCR 2b (Dynamic PFMC) | 0.95 | 0.95 | 0.96 | 0.96 | 0.94 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.68 | 0.7 | 0.51 | 0.69 | 0.68 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.68 | 0.59 | 0.72 | 0.67 | 0.67 |
|  |  | HCR 2a (PFMC) | 0.12 | 0.1 | 0.13 | 0.12 | 0.12 |
|  |  | HCR 2b (Dynamic PFMC) | 0.13 | 0.1 | 0.14 | 0.12 | 0.13 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.39 | 0.45 | 0.25 | 0.39 | 0.39 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.19 | 0.23 | 0.25 | 0.19 | 0.19 |
|  |  | HCR 2a (PFMC) | 0.72 | 0.46 | 0.44 | 0.44 | 0.42 |
|  |  | HCR 2b (Dynamic PFMC) | 0.36 | 0.41 | 0.45 | 0.42 | 0.44 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.a.11.** Summary of performance metric 11: probability that the population undergoing overfishing as determined from the OM, but is perceived as not undergoing overfishing by the EM across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0.01 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.11.** Summary of performance metric 11: probability that the population undergoing overfishing as determined from the OM, but is perceived as not undergoing overfishing by the EM across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.04 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0.01 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.03 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.05 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0.01 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0.01 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0.03 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0.02 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0.03 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0.04 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.a.12.** Summary of performance metric 12: probability that the population is not undergoing overfishing as determined from the OM, but is perceived as undergoing overfishing by the EM across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.07 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.07 | 0.01 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.05 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.06 | 0 | 0.19 | 0.04 | 0.04 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0 | 0.16 | 0.04 | 0.04 |
|  |  | HCR 5 (Avg F) | 0.04 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0.07 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.07 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 4.b.12.** Summary of performance metric 12: probability that the population is not undergoing overfishing as determined from the OM, but is perceived as undergoing overfishing by the EM across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.03 | 0.04 | 0.02 | 0.03 | 0.04 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0.01 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.06 | 0.08 | 0.03 | 0.06 | 0.06 |
|  |  | HCR 5 (Avg F) | 0.02 | 0.01 | 0.01 | 0.02 | 0.02 |
|  | *Est M* | HCR 1a (NPFMC) | 0.03 | 0.05 | 0.02 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.16 | 0.17 | 0.12 | 0.16 | 0.16 |
|  |  | HCR 2b (Dynamic PFMC) | 0.03 | 0.02 | 0.05 | 0.03 | 0.03 |
|  |  | HCR 3a (SESSF) | 0.03 | 0.06 | 0.01 | 0.03 | 0.03 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.18 | 0.21 | 0.12 | 0.18 | 0.18 |
|  |  | HCR 5 (Avg F) | 0.02 | 0.03 | 0.02 | 0.03 | 0.03 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.02 | 0.03 | 0.01 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.04 | 0.04 | 0.03 | 0.04 | 0.04 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.02 | 0 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.07 | 0.09 | 0.04 | 0.07 | 0.07 |
|  |  | HCR 5 (Avg F) | 0.06 | 0.02 | 0.01 | 0.02 | 0.02 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.01 | 0 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.15 | 0.09 | 0.06 | 0.08 | 0.08 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.03 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.07 | 0.1 | 0.05 | 0.08 | 0.08 |
|  |  | HCR 5 (Avg F) | 0.04 | 0.01 | 0.01 | 0.02 | 0.02 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0.01 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.03 | 0.01 | 0.04 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.04 | 0.03 | 0.08 | 0.01 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0.01 | 0 | 0.02 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0.01 | 0 | 0.02 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0.02 | 0.03 | 0.02 | 0.07 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0.03 | 0.05 | 0.04 | 0.07 | 0.04 |
|  |  | HCR 5 (Avg F) | 0 | 0.01 | 0 | 0.03 | 0 |

[1] “**Supplementary Table 4.a.13.** Summary of performance metric 13: terminal spawning stock biomass depletion across scenarios for Pollock in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.41 | 0.61 | 0.37 | 0.45 | 0.45 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.42 | 0.43 | 0.4 | 0.42 | 0.42 |
|  |  | HCR 2a (PFMC) | 0.48 | 0.72 | 0.42 | 0.52 | 0.52 |
|  |  | HCR 2b (Dynamic PFMC) | 0.49 | 0.51 | 0.47 | 0.49 | 0.49 |
|  |  | HCR 3a (SESSF) | 0.48 | 0.72 | 0.43 | 0.52 | 0.52 |
|  |  | HCR 3b (Dynamic SESSF) | 0.49 | 0.5 | 0.47 | 0.49 | 0.49 |
|  |  | HCR 4 (NEFMC) | 0.55 | 0.61 | 0.35 | 0.43 | 0.43 |
|  |  | HCR 5 (Avg F) | 0.47 | 0.91 | 0.53 | 0.66 | 0.66 |
|  | *Est M* | HCR 1a (NPFMC) | 0.34 | 0.5 | 0.3 | 0.37 | 0.37 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.34 | 0.35 | 0.33 | 0.34 | 0.34 |
|  |  | HCR 2a (PFMC) | 0.4 | 0.59 | 0.35 | 0.43 | 0.43 |
|  |  | HCR 2b (Dynamic PFMC) | 0.4 | 0.42 | 0.39 | 0.4 | 0.4 |
|  |  | HCR 3a (SESSF) | 0.4 | 0.59 | 0.35 | 0.43 | 0.43 |
|  |  | HCR 3b (Dynamic SESSF) | 0.4 | 0.41 | 0.38 | 0.4 | 0.4 |
|  |  | HCR 4 (NEFMC) | 0.52 | 0.5 | 0.28 | 0.36 | 0.35 |
|  |  | HCR 5 (Avg F) | 0.43 | 0.92 | 0.54 | 0.67 | 0.67 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.61 | 0.89 | 0.51 | 0.64 | 0.63 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.62 | 0.63 | 0.61 | 0.62 | 0.62 |
|  |  | HCR 2a (PFMC) | 0.67 | 0.99 | 0.56 | 0.7 | 0.7 |
|  |  | HCR 2b (Dynamic PFMC) | 0.69 | 0.7 | 0.67 | 0.69 | 0.69 |
|  |  | HCR 3a (SESSF) | 0.67 | 0.98 | 0.56 | 0.7 | 0.7 |
|  |  | HCR 3b (Dynamic SESSF) | 0.68 | 0.7 | 0.67 | 0.68 | 0.68 |
|  |  | HCR 4 (NEFMC) | 0.71 | 0.88 | 0.5 | 0.63 | 0.63 |
|  |  | HCR 5 (Avg F) | 0.66 | 1.12 | 0.64 | 0.8 | 0.8 |
|  | *Est M* | HCR 1a (NPFMC) | 0.41 | 0.59 | 0.35 | 0.43 | 0.43 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.41 | 0.42 | 0.4 | 0.41 | 0.41 |
|  |  | HCR 2a (PFMC) | 0.48 | 0.7 | 0.4 | 0.5 | 0.5 |
|  |  | HCR 2b (Dynamic PFMC) | 0.48 | 0.5 | 0.47 | 0.48 | 0.48 |
|  |  | HCR 3a (SESSF) | 0.48 | 0.7 | 0.41 | 0.5 | 0.5 |
|  |  | HCR 3b (Dynamic SESSF) | 0.48 | 0.49 | 0.47 | 0.48 | 0.48 |
|  |  | HCR 4 (NEFMC) | 0.65 | 0.6 | 0.34 | 0.42 | 0.42 |
|  |  | HCR 5 (Avg F) | 0.52 | 1.12 | 0.64 | 0.8 | 0.8 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 1.27 | 1.84 | 1.05 | 1.27 | 1.23 |
|  |  | HCR 1b (Dynamic NPFMC) | 1.28 | 1.86 | 1.05 | 1.27 | 1.24 |
|  |  | HCR 2a (PFMC) | 1.41 | 1.99 | 1.17 | 1.41 | 1.37 |
|  |  | HCR 2b (Dynamic PFMC) | 1.41 | 1.99 | 1.17 | 1.41 | 1.37 |
|  |  | HCR 3a (SESSF) | 1.38 | 1.94 | 1.14 | 1.36 | 1.34 |
|  |  | HCR 3b (Dynamic SESSF) | 1.38 | 1.94 | 1.14 | 1.36 | 1.34 |
|  |  | HCR 4 (NEFMC) | 1.48 | 1.84 | 1.04 | 1.26 | 1.22 |
|  |  | HCR 5 (Avg F) | 1.37 | 2.45 | 1.43 | 1.68 | 1.7 |
|  | *Est M* | HCR 1a (NPFMC) | 1.02 | 1.5 | 0.84 | 1.02 | 0.98 |
|  |  | HCR 1b (Dynamic NPFMC) | 1.02 | 1.51 | 0.84 | 1.02 | 0.98 |
|  |  | HCR 2a (PFMC) | 1.15 | 1.67 | 0.95 | 1.16 | 1.11 |
|  |  | HCR 2b (Dynamic PFMC) | 1.15 | 1.67 | 0.95 | 1.16 | 1.11 |
|  |  | HCR 3a (SESSF) | 1.12 | 1.62 | 0.93 | 1.12 | 1.09 |
|  |  | HCR 3b (Dynamic SESSF) | 1.12 | 1.62 | 0.92 | 1.11 | 1.09 |
|  |  | HCR 4 (NEFMC) | 1.35 | 1.5 | 0.83 | 1.01 | 0.98 |
|  |  | HCR 5 (Avg F) | 1.18 | 2.45 | 1.44 | 1.68 | 1.71 |

[1] “**Supplementary Table 4.b.13.** Summary of performance metric 13: terminal spawning stock biomass depletion across scenarios for Pollock in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.37 | 0.38 | 0.37 | 0.37 | 0.37 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.37 | 0.38 | 0.36 | 0.37 | 0.37 |
|  |  | HCR 2a (PFMC) | 0.49 | 0.5 | 0.48 | 0.49 | 0.49 |
|  |  | HCR 2b (Dynamic PFMC) | 0.48 | 0.5 | 0.47 | 0.48 | 0.48 |
|  |  | HCR 3a (SESSF) | 0.44 | 0.45 | 0.44 | 0.44 | 0.44 |
|  |  | HCR 3b (Dynamic SESSF) | 0.43 | 0.44 | 0.42 | 0.43 | 0.43 |
|  |  | HCR 4 (NEFMC) | 0.36 | 0.37 | 0.34 | 0.36 | 0.36 |
|  |  | HCR 5 (Avg F) | 0.45 | 0.48 | 0.45 | 0.47 | 0.47 |
|  | *Est M* | HCR 1a (NPFMC) | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.33 | 0.34 | 0.32 | 0.33 | 0.33 |
|  |  | HCR 2a (PFMC) | 0.38 | 0.39 | 0.37 | 0.38 | 0.38 |
|  |  | HCR 2b (Dynamic PFMC) | 0.38 | 0.39 | 0.37 | 0.38 | 0.38 |
|  |  | HCR 3a (SESSF) | 0.38 | 0.39 | 0.38 | 0.38 | 0.38 |
|  |  | HCR 3b (Dynamic SESSF) | 0.37 | 0.38 | 0.36 | 0.37 | 0.37 |
|  |  | HCR 4 (NEFMC) | 0.29 | 0.3 | 0.28 | 0.29 | 0.29 |
|  |  | HCR 5 (Avg F) | 0.46 | 0.45 | 0.42 | 0.44 | 0.44 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.36 | 0.37 | 0.35 | 0.36 | 0.36 |
|  |  | HCR 2a (PFMC) | 0.48 | 0.5 | 0.47 | 0.48 | 0.48 |
|  |  | HCR 2b (Dynamic PFMC) | 0.48 | 0.49 | 0.47 | 0.48 | 0.48 |
|  |  | HCR 3a (SESSF) | 0.43 | 0.44 | 0.44 | 0.43 | 0.43 |
|  |  | HCR 3b (Dynamic SESSF) | 0.42 | 0.44 | 0.41 | 0.42 | 0.42 |
|  |  | HCR 4 (NEFMC) | 0.35 | 0.36 | 0.34 | 0.35 | 0.35 |
|  |  | HCR 5 (Avg F) | 0.39 | 0.48 | 0.45 | 0.47 | 0.46 |
|  | *Est M* | HCR 1a (NPFMC) | 0.39 | 0.4 | 0.4 | 0.39 | 0.39 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.4 | 0.4 | 0.39 | 0.4 | 0.4 |
|  |  | HCR 2a (PFMC) | 0.4 | 0.45 | 0.43 | 0.44 | 0.44 |
|  |  | HCR 2b (Dynamic PFMC) | 0.45 | 0.46 | 0.43 | 0.44 | 0.44 |
|  |  | HCR 3a (SESSF) | 0.45 | 0.43 | 0.43 | 0.41 | 0.42 |
|  |  | HCR 3b (Dynamic SESSF) | 0.45 | 0.44 | 0.42 | 0.42 | 0.43 |
|  |  | HCR 4 (NEFMC) | 0.34 | 0.35 | 0.33 | 0.34 | 0.34 |
|  |  | HCR 5 (Avg F) | 0.38 | 0.48 | 0.46 | 0.47 | 0.47 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 1.06 | 1.1 | 0.98 | 0.96 | 1.1 |
|  |  | HCR 1b (Dynamic NPFMC) | 1.06 | 1.11 | 0.98 | 0.94 | 1.11 |
|  |  | HCR 2a (PFMC) | 1.42 | 1.52 | 1.31 | 1.32 | 1.45 |
|  |  | HCR 2b (Dynamic PFMC) | 1.42 | 1.52 | 1.3 | 1.31 | 1.45 |
|  |  | HCR 3a (SESSF) | 1.11 | 1.15 | 1.03 | 0.99 | 1.17 |
|  |  | HCR 3b (Dynamic SESSF) | 1.11 | 1.15 | 1.03 | 0.97 | 1.16 |
|  |  | HCR 4 (NEFMC) | 1.06 | 1.1 | 0.98 | 0.93 | 1.1 |
|  |  | HCR 5 (Avg F) | 1.16 | 0.92 | 0.87 | 0.76 | 0.99 |
|  | *Est M* | HCR 1a (NPFMC) | 0.64 | 0.66 | 0.6 | 0.58 | 0.66 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.64 | 0.66 | 0.6 | 0.57 | 0.67 |
|  |  | HCR 2a (PFMC) | 0.85 | 0.88 | 0.78 | 0.78 | 0.88 |
|  |  | HCR 2b (Dynamic PFMC) | 0.84 | 0.89 | 0.78 | 0.77 | 0.87 |
|  |  | HCR 3a (SESSF) | 0.71 | 0.72 | 0.67 | 0.63 | 0.74 |
|  |  | HCR 3b (Dynamic SESSF) | 0.7 | 0.71 | 0.66 | 0.61 | 0.74 |
|  |  | HCR 4 (NEFMC) | 0.58 | 0.6 | 0.55 | 0.51 | 0.62 |
|  |  | HCR 5 (Avg F) | 0.92 | 0.86 | 0.82 | 0.71 | 0.95 |

[1] “**Supplementary Table 5.a.1.** Summary of performance metric 1: average annual catch across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 143,606 | 203,304 | 111,395 | 143,616 | 143,620 |
|  |  | HCR 1b (Dynamic NPFMC) | 144,669 | 202,642 | 115,497 | 144,711 | 144,675 |
|  |  | HCR 2a (PFMC) | 122,770 | 170,706 | 98,074 | 122,798 | 122,801 |
|  |  | HCR 2b (Dynamic PFMC) | 122,840 | 170,684 | 98,826 | 122,844 | 122,862 |
|  |  | HCR 3a (SESSF) | 127,930 | 178,716 | 99,954 | 127,902 | 127,910 |
|  |  | HCR 3b (Dynamic SESSF) | 128,295 | 178,807 | 102,944 | 128,276 | 128,290 |
|  |  | HCR 4 (NEFMC) | 117,988 | 205,004 | 117,949 | 147,030 | 147,033 |
|  |  | HCR 5 (Avg F) | 134,284 | 234,524 | 133,816 | 108,921 | 108,883 |
|  | *Est M* | HCR 1a (NPFMC) | 146,838 | 207,727 | 114,060 | 146,823 | 146,905 |
|  |  | HCR 1b (Dynamic NPFMC) | 147,969 | 207,193 | 118,118 | 147,834 | 148,047 |
|  |  | HCR 2a (PFMC) | 126,980 | 176,511 | 101,400 | 127,030 | 126,892 |
|  |  | HCR 2b (Dynamic PFMC) | 126,982 | 176,258 | 102,259 | 127,091 | 127,055 |
|  |  | HCR 3a (SESSF) | 130,859 | 182,835 | 102,331 | 130,809 | 130,797 |
|  |  | HCR 3b (Dynamic SESSF) | 131,477 | 183,046 | 105,588 | 131,469 | 131,432 |
|  |  | HCR 4 (NEFMC) | 113,357 | 211,319 | 121,553 | 151,558 | 151,612 |
|  |  | HCR 5 (Avg F) | 132,647 | 129,674 | 76,661 | 94,340 | 94,404 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 144,236 | 203,922 | 112,010 | 144,230 | 144,217 |
|  |  | HCR 1b (Dynamic NPFMC) | 145,256 | 203,270 | 115,997 | 145,259 | 145,238 |
|  |  | HCR 2a (PFMC) | 123,293 | 171,347 | 98,556 | 123,297 | 123,322 |
|  |  | HCR 2b (Dynamic PFMC) | 123,376 | 171,259 | 99,265 | 123,330 | 123,335 |
|  |  | HCR 3a (SESSF) | 128,605 | 179,549 | 100,628 | 128,613 | 128,610 |
|  |  | HCR 3b (Dynamic SESSF) | 128,969 | 179,582 | 103,526 | 128,968 | 128,948 |
|  |  | HCR 4 (NEFMC) | 121,221 | 205,552 | 118,383 | 147,505 | 147,506 |
|  |  | HCR 5 (Avg F) | 135,296 | 235,336 | 134,396 | 110,954 | 110,982 |
|  | *Est M* | HCR 1a (NPFMC) | 142,343 | 201,413 | 110,482 | 142,393 | 142,311 |
|  |  | HCR 1b (Dynamic NPFMC) | 143,380 | 200,564 | 114,416 | 143,301 | 143,355 |
|  |  | HCR 2a (PFMC) | 120,915 | 167,876 | 96,589 | 120,729 | 120,708 |
|  |  | HCR 2b (Dynamic PFMC) | 120,903 | 167,480 | 97,232 | 120,773 | 120,739 |
|  |  | HCR 3a (SESSF) | 126,636 | 176,856 | 99,098 | 126,714 | 126,647 |
|  |  | HCR 3b (Dynamic SESSF) | 126,962 | 176,820 | 101,902 | 126,960 | 126,941 |
|  |  | HCR 4 (NEFMC) | 110,581 | 204,665 | 117,845 | 146,955 | 146,914 |
|  |  | HCR 5 (Avg F) | 129,315 | 128,483 | 76,329 | 93,744 | 93,753 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 153,126 | 200,049 | 122,738 | 152,311 | 153,527 |
|  |  | HCR 1b (Dynamic NPFMC) | 153,409 | 198,388 | 125,940 | 152,677 | 153,816 |
|  |  | HCR 2a (PFMC) | 125,550 | 159,054 | 103,961 | 124,999 | 125,865 |
|  |  | HCR 2b (Dynamic PFMC) | 125,526 | 158,953 | 104,383 | 125,145 | 125,826 |
|  |  | HCR 3a (SESSF) | 131,439 | 167,407 | 107,113 | 130,687 | 131,855 |
|  |  | HCR 3b (Dynamic SESSF) | 131,513 | 167,102 | 109,059 | 130,795 | 131,887 |
|  |  | HCR 4 (NEFMC) | 122,002 | 202,002 | 129,006 | 155,830 | 156,906 |
|  |  | HCR 5 (Avg F) | 139,290 | 222,992 | 145,307 | 174,304 | 175,934 |
|  | *Est M* | HCR 1a (NPFMC) | 158,507 | 210,079 | 126,596 | 157,708 | 158,975 |
|  |  | HCR 1b (Dynamic NPFMC) | 158,681 | 208,461 | 129,520 | 157,900 | 158,944 |
|  |  | HCR 2a (PFMC) | 131,156 | 169,281 | 107,745 | 130,446 | 131,391 |
|  |  | HCR 2b (Dynamic PFMC) | 131,167 | 169,167 | 108,315 | 130,676 | 131,398 |
|  |  | HCR 3a (SESSF) | 136,606 | 176,933 | 110,758 | 135,833 | 137,020 |
|  |  | HCR 3b (Dynamic SESSF) | 136,780 | 176,930 | 112,603 | 135,964 | 137,029 |
|  |  | HCR 4 (NEFMC) | 109,684 | 213,854 | 133,616 | 162,362 | 163,392 |
|  |  | HCR 5 (Avg F) | 138,966 | 222,583 | 145,122 | 173,983 | 175,686 |

[1] “**Supplementary Table 5.b.1.** Summary of performance metric 1: average annual catch across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 31,787 | 45,853 | 24,628 | 31,822 | 31,823 |
|  |  | HCR 1b (Dynamic NPFMC) | 31,708 | 45,305 | 24,841 | 31,701 | 31,720 |
|  |  | HCR 2a (PFMC) | 28,056 | 40,001 | 21,872 | 28,062 | 28,043 |
|  |  | HCR 2b (Dynamic PFMC) | 28,208 | 40,046 | 22,185 | 28,201 | 28,179 |
|  |  | HCR 3a (SESSF) | 26,452 | 38,104 | 20,289 | 26,575 | 26,554 |
|  |  | HCR 3b (Dynamic SESSF) | 26,935 | 38,397 | 21,250 | 27,044 | 27,023 |
|  |  | HCR 4 (NEFMC) | 32,181 | 45,972 | 25,274 | 32,212 | 32,189 |
|  |  | HCR 5 (Avg F) | 10,505 | 34,242 | 19,149 | 24,258 | 24,232 |
|  | *Est M* | HCR 1a (NPFMC) | 25,975 | 37,876 | 19,873 | 26,005 | 25,976 |
|  |  | HCR 1b (Dynamic NPFMC) | 26,008 | 37,819 | 20,174 | 26,030 | 26,019 |
|  |  | HCR 2a (PFMC) | 20,187 | 29,156 | 15,631 | 20,207 | 20,191 |
|  |  | HCR 2b (Dynamic PFMC) | 20,041 | 28,779 | 15,671 | 20,047 | 20,048 |
|  |  | HCR 3a (SESSF) | 22,870 | 33,258 | 17,394 | 22,819 | 22,938 |
|  |  | HCR 3b (Dynamic SESSF) | 21,798 | 31,415 | 17,026 | 21,804 | 21,803 |
|  |  | HCR 4 (NEFMC) | 26,039 | 37,629 | 20,318 | 25,988 | 26,026 |
|  |  | HCR 5 (Avg F) | 8,339 | 34,920 | 19,209 | 24,444 | 24,426 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 20,282 | 29,401 | 15,603 | 20,294 | 20,282 |
|  |  | HCR 1b (Dynamic NPFMC) | 20,542 | 29,395 | 16,101 | 20,552 | 20,540 |
|  |  | HCR 2a (PFMC) | 19,303 | 27,582 | 15,017 | 19,303 | 19,285 |
|  |  | HCR 2b (Dynamic PFMC) | 19,349 | 27,596 | 15,210 | 19,351 | 19,350 |
|  |  | HCR 3a (SESSF) | 18,820 | 27,117 | 14,373 | 18,851 | 18,847 |
|  |  | HCR 3b (Dynamic SESSF) | 18,916 | 26,976 | 14,891 | 18,931 | 18,928 |
|  |  | HCR 4 (NEFMC) | 20,613 | 29,477 | 16,180 | 20,619 | 20,626 |
|  |  | HCR 5 (Avg F) | 9,742 | 25,885 | 14,473 | 18,300 | 18,287 |
|  | *Est M* | HCR 1a (NPFMC) | 13,757 | 20,077 | 10,095 | 13,763 | 13,747 |
|  |  | HCR 1b (Dynamic NPFMC) | 14,747 | 20,928 | 11,595 | 14,724 | 14,760 |
|  |  | HCR 2a (PFMC) | 11,976 | 16,818 | 9,416 | 11,993 | 11,972 |
|  |  | HCR 2b (Dynamic PFMC) | 12,014 | 16,771 | 9,561 | 12,032 | 12,015 |
|  |  | HCR 3a (SESSF) | 11,627 | 16,628 | 8,712 | 11,627 | 11,901 |
|  |  | HCR 3b (Dynamic SESSF) | 11,936 | 16,871 | 9,415 | 11,933 | 11,932 |
|  |  | HCR 4 (NEFMC) | 14,966 | 21,139 | 11,835 | 14,965 | 14,965 |
|  |  | HCR 5 (Avg F) | 9,890 | 26,620 | 14,630 | 18,635 | 18,640 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 29,453 | 38,286 | 23,629 | 26,454 | 31,216 |
|  |  | HCR 1b (Dynamic NPFMC) | 29,451 | 37,511 | 24,221 | 26,636 | 31,116 |
|  |  | HCR 2a (PFMC) | 27,293 | 35,249 | 22,338 | 24,733 | 28,742 |
|  |  | HCR 2b (Dynamic PFMC) | 26,748 | 35,210 | 22,468 | 24,822 | 28,762 |
|  |  | HCR 3a (SESSF) | 25,304 | 32,641 | 20,546 | 22,691 | 26,836 |
|  |  | HCR 3b (Dynamic SESSF) | 24,997 | 32,433 | 20,947 | 22,878 | 26,809 |
|  |  | HCR 4 (NEFMC) | 29,821 | 38,378 | 24,569 | 26,989 | 31,514 |
|  |  | HCR 5 (Avg F) | 7,902 | 28,311 | 18,690 | 20,123 | 23,830 |
|  | *Est M* | HCR 1a (NPFMC) | 22,706 | 29,661 | 18,166 | 20,518 | 23,990 |
|  |  | HCR 1b (Dynamic NPFMC) | 22,757 | 29,486 | 18,553 | 20,520 | 24,044 |
|  |  | HCR 2a (PFMC) | 18,443 | 23,839 | 15,087 | 16,819 | 19,407 |
|  |  | HCR 2b (Dynamic PFMC) | 18,236 | 23,544 | 15,027 | 16,654 | 19,184 |
|  |  | HCR 3a (SESSF) | 19,940 | 25,915 | 16,168 | 17,929 | 21,145 |
|  |  | HCR 3b (Dynamic SESSF) | 19,225 | 24,722 | 15,842 | 17,349 | 20,320 |
|  |  | HCR 4 (NEFMC) | 22,496 | 29,080 | 18,467 | 20,357 | 23,723 |
|  |  | HCR 5 (Avg F) | 4,217 | 28,736 | 18,673 | 20,182 | 24,018 |

[1] “**Supplementary Table 5.a.2.** Summary of performance metric 2: average interannual variation in catch (IAV) across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 3,103 | 3,258 | 3,091 | 3,100 | 3,092 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,334 | 3,184 | 2,040 | 2,324 | 2,344 |
|  |  | HCR 2a (PFMC) | 1,275 | 1,768 | 1,185 | 1,275 | 1,274 |
|  |  | HCR 2b (Dynamic PFMC) | 1,154 | 1,693 | 970 | 1,149 | 1,157 |
|  |  | HCR 3a (SESSF) | 2,309 | 2,461 | 3,322 | 2,290 | 2,306 |
|  |  | HCR 3b (Dynamic SESSF) | 1,726 | 2,196 | 1,649 | 1,722 | 1,723 |
|  |  | HCR 4 (NEFMC) | 1,221 | 2,815 | 1,769 | 2,019 | 2,029 |
|  |  | HCR 5 (Avg F) | 3,613 | 5,001 | 3,592 | 6,760 | 6,765 |
|  | *Est M* | HCR 1a (NPFMC) | 3,361 | 3,519 | 3,422 | 3,365 | 3,377 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,496 | 3,384 | 2,229 | 2,494 | 2,506 |
|  |  | HCR 2a (PFMC) | 1,411 | 1,922 | 1,343 | 1,422 | 1,408 |
|  |  | HCR 2b (Dynamic PFMC) | 1,271 | 1,828 | 1,090 | 1,270 | 1,270 |
|  |  | HCR 3a (SESSF) | 2,395 | 2,552 | 3,451 | 2,405 | 2,404 |
|  |  | HCR 3b (Dynamic SESSF) | 2,320 | 2,669 | 2,350 | 2,320 | 2,319 |
|  |  | HCR 4 (NEFMC) | 1,206 | 3,097 | 2,038 | 2,275 | 2,270 |
|  |  | HCR 5 (Avg F) | 4,389 | 6,732 | 10,322 | 8,584 | 8,583 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 3,003 | 3,135 | 3,005 | 2,998 | 2,983 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,209 | 3,047 | 1,943 | 2,222 | 2,201 |
|  |  | HCR 2a (PFMC) | 1,197 | 1,668 | 1,122 | 1,199 | 1,195 |
|  |  | HCR 2b (Dynamic PFMC) | 1,074 | 1,594 | 912 | 1,076 | 1,074 |
|  |  | HCR 3a (SESSF) | 2,207 | 2,341 | 3,191 | 2,222 | 2,206 |
|  |  | HCR 3b (Dynamic SESSF) | 1,525 | 2,008 | 1,424 | 1,527 | 1,523 |
|  |  | HCR 4 (NEFMC) | 1,191 | 2,689 | 1,715 | 1,929 | 1,930 |
|  |  | HCR 5 (Avg F) | 3,729 | 4,973 | 3,700 | 7,277 | 7,277 |
|  | *Est M* | HCR 1a (NPFMC) | 2,865 | 3,032 | 2,873 | 2,882 | 2,843 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,144 | 2,931 | 1,892 | 2,135 | 2,137 |
|  |  | HCR 2a (PFMC) | 1,168 | 1,633 | 1,087 | 1,166 | 1,161 |
|  |  | HCR 2b (Dynamic PFMC) | 1,052 | 1,552 | 883 | 1,055 | 1,051 |
|  |  | HCR 3a (SESSF) | 2,186 | 2,315 | 3,143 | 2,179 | 2,185 |
|  |  | HCR 3b (Dynamic SESSF) | 1,399 | 1,899 | 1,262 | 1,396 | 1,397 |
|  |  | HCR 4 (NEFMC) | 1,062 | 2,686 | 1,715 | 1,937 | 1,926 |
|  |  | HCR 5 (Avg F) | 4,589 | 7,642 | 11,850 | 9,841 | 9,836 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 3,521 | 3,901 | 3,584 | 3,545 | 3,530 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,776 | 3,840 | 2,433 | 2,792 | 2,779 |
|  |  | HCR 2a (PFMC) | 1,506 | 2,067 | 1,383 | 1,512 | 1,508 |
|  |  | HCR 2b (Dynamic PFMC) | 1,378 | 1,968 | 1,168 | 1,369 | 1,376 |
|  |  | HCR 3a (SESSF) | 2,516 | 2,859 | 3,258 | 2,522 | 2,495 |
|  |  | HCR 3b (Dynamic SESSF) | 1,675 | 2,321 | 1,471 | 1,687 | 1,675 |
|  |  | HCR 4 (NEFMC) | 1,517 | 3,428 | 2,163 | 2,475 | 2,455 |
|  |  | HCR 5 (Avg F) | 4,496 | 6,318 | 4,568 | 4,951 | 4,931 |
|  | *Est M* | HCR 1a (NPFMC) | 3,604 | 4,057 | 3,738 | 3,663 | 3,605 |
|  |  | HCR 1b (Dynamic NPFMC) | 2,910 | 4,013 | 2,556 | 2,925 | 2,904 |
|  |  | HCR 2a (PFMC) | 1,590 | 2,181 | 1,459 | 1,594 | 1,584 |
|  |  | HCR 2b (Dynamic PFMC) | 1,462 | 2,093 | 1,256 | 1,462 | 1,464 |
|  |  | HCR 3a (SESSF) | 2,506 | 2,912 | 3,206 | 2,515 | 2,505 |
|  |  | HCR 3b (Dynamic SESSF) | 1,818 | 2,515 | 1,698 | 1,859 | 1,866 |
|  |  | HCR 4 (NEFMC) | 1,355 | 3,652 | 2,356 | 2,682 | 2,666 |
|  |  | HCR 5 (Avg F) | 5,309 | 6,252 | 4,524 | 4,893 | 4,877 |

[1] “**Supplementary Table 5.b.2.** Summary of performance metric 2: average interannual variation in catch (IAV) across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 12,896 | 15,663 | 13,124 | 12,821 | 12,806 |
|  |  | HCR 1b (Dynamic NPFMC) | 11,382 | 16,147 | 9,630 | 11,493 | 11,280 |
|  |  | HCR 2a (PFMC) | 6,770 | 9,507 | 5,855 | 6,744 | 6,717 |
|  |  | HCR 2b (Dynamic PFMC) | 6,513 | 9,499 | 5,390 | 6,539 | 6,527 |
|  |  | HCR 3a (SESSF) | 6,891 | 9,007 | 7,325 | 6,977 | 6,912 |
|  |  | HCR 3b (Dynamic SESSF) | 6,219 | 9,101 | 5,229 | 6,316 | 6,167 |
|  |  | HCR 4 (NEFMC) | 9,425 | 13,604 | 7,790 | 9,436 | 9,416 |
|  |  | HCR 5 (Avg F) | 1,596 | 6,491 | 3,665 | 4,429 | 4,442 |
|  | *Est M* | HCR 1a (NPFMC) | 6,868 | 9,170 | 6,474 | 6,818 | 6,731 |
|  |  | HCR 1b (Dynamic NPFMC) | 6,561 | 10,142 | 5,262 | 6,605 | 6,592 |
|  |  | HCR 2a (PFMC) | 3,308 | 5,041 | 2,874 | 3,337 | 3,323 |
|  |  | HCR 2b (Dynamic PFMC) | 3,202 | 4,876 | 2,551 | 3,188 | 3,197 |
|  |  | HCR 3a (SESSF) | 4,841 | 6,658 | 5,055 | 4,756 | 4,730 |
|  |  | HCR 3b (Dynamic SESSF) | 3,752 | 5,782 | 3,042 | 3,769 | 3,769 |
|  |  | HCR 4 (NEFMC) | 5,324 | 8,247 | 4,252 | 5,304 | 5,310 |
|  |  | HCR 5 (Avg F) | 1,334 | 7,020 | 3,823 | 4,708 | 4,610 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 13,063 | 12,033 | 13,799 | 12,708 | 12,907 |
|  |  | HCR 1b (Dynamic NPFMC) | 9,322 | 10,662 | 9,009 | 9,322 | 9,276 |
|  |  | HCR 2a (PFMC) | 4,831 | 5,838 | 4,748 | 4,786 | 4,936 |
|  |  | HCR 2b (Dynamic PFMC) | 4,484 | 5,644 | 4,074 | 4,380 | 4,419 |
|  |  | HCR 3a (SESSF) | 5,958 | 5,899 | 7,798 | 6,151 | 6,252 |
|  |  | HCR 3b (Dynamic SESSF) | 4,100 | 5,321 | 3,934 | 4,156 | 4,187 |
|  |  | HCR 4 (NEFMC) | 6,983 | 8,488 | 6,465 | 6,933 | 6,991 |
|  |  | HCR 5 (Avg F) | 1,594 | 4,061 | 2,704 | 2,967 | 3,008 |
|  | *Est M* | HCR 1a (NPFMC) | 2,270 | 2,486 | 2,359 | 2,266 | 2,306 |
|  |  | HCR 1b (Dynamic NPFMC) | 1,706 | 2,508 | 1,447 | 1,711 | 1,712 |
|  |  | HCR 2a (PFMC) | 963 | 1,362 | 901 | 980 | 978 |
|  |  | HCR 2b (Dynamic PFMC) | 894 | 1,314 | 753 | 910 | 900 |
|  |  | HCR 3a (SESSF) | 1,569 | 1,805 | 2,251 | 1,614 | 7,433 |
|  |  | HCR 3b (Dynamic SESSF) | 1,177 | 1,605 | 1,038 | 1,172 | 1,169 |
|  |  | HCR 4 (NEFMC) | 1,477 | 2,204 | 1,235 | 1,479 | 1,479 |
|  |  | HCR 5 (Avg F) | 1,288 | 4,827 | 2,900 | 3,321 | 3,375 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 11,107 | 12,198 | 10,614 | 11,683 | 11,027 |
|  |  | HCR 1b (Dynamic NPFMC) | 9,277 | 10,781 | 8,583 | 9,276 | 9,553 |
|  |  | HCR 2a (PFMC) | 5,282 | 6,617 | 4,913 | 5,232 | 5,401 |
|  |  | HCR 2b (Dynamic PFMC) | 5,121 | 6,552 | 4,493 | 4,884 | 5,258 |
|  |  | HCR 3a (SESSF) | 5,591 | 6,157 | 6,196 | 5,971 | 5,444 |
|  |  | HCR 3b (Dynamic SESSF) | 4,741 | 5,825 | 4,159 | 4,525 | 4,811 |
|  |  | HCR 4 (NEFMC) | 7,634 | 9,433 | 6,893 | 7,414 | 7,743 |
|  |  | HCR 5 (Avg F) | 1,335 | 4,141 | 2,878 | 3,085 | 3,425 |
|  | *Est M* | HCR 1a (NPFMC) | 4,382 | 5,271 | 4,265 | 4,423 | 4,433 |
|  |  | HCR 1b (Dynamic NPFMC) | 4,013 | 5,396 | 3,388 | 3,795 | 4,244 |
|  |  | HCR 2a (PFMC) | 2,206 | 2,852 | 1,950 | 2,074 | 2,266 |
|  |  | HCR 2b (Dynamic PFMC) | 2,048 | 2,744 | 1,765 | 1,930 | 2,131 |
|  |  | HCR 3a (SESSF) | 3,008 | 3,702 | 3,208 | 3,128 | 3,045 |
|  |  | HCR 3b (Dynamic SESSF) | 2,372 | 3,127 | 1,987 | 2,186 | 2,448 |
|  |  | HCR 4 (NEFMC) | 3,297 | 4,360 | 2,804 | 3,035 | 3,437 |
|  |  | HCR 5 (Avg F) | 1,483 | 4,736 | 3,251 | 3,485 | 3,911 |

[1] “**Supplementary Table 5.a.3.** Summary of performance metric 3: probability of the fishery being open across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.b.3.** Summary of performance metric 3: probability of the fishery being open across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.07 | 0.06 | 0.09 | 0.06 | 0.06 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.1 | 0.1 | 0.11 | 0.1 | 0.1 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 3b (Dynamic SESSF) | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.a.4.** Summary of performance metric 4: average relative mean squared error in estimate of spawning biomass in 2060 across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.b.4.** Summary of performance metric 4: average relative mean squared error in estimate of spawning biomass in 2060 across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.02 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0.02 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.07 | 0.06 | 0.08 | 0.07 | 0.07 |
|  |  | HCR 2b (Dynamic PFMC) | 0.07 | 0.06 | 0.08 | 0.07 | 0.07 |
|  |  | HCR 3a (SESSF) | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) | 0.04 | 0.03 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.16 | 0.15 | 0.19 | 0.15 | 0.15 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
|  |  | HCR 2a (PFMC) | 0.15 | 0.14 | 0.15 | 0.14 | 0.14 |
|  |  | HCR 2b (Dynamic PFMC) | 0.14 | 0.14 | 0.13 | 0.14 | 0.14 |
|  |  | HCR 3a (SESSF) | 0.17 | 0.16 | 0.19 | 0.17 | 0.16 |
|  |  | HCR 3b (Dynamic SESSF) | 0.15 | 0.16 | 0.15 | 0.15 | 0.15 |
|  |  | HCR 4 (NEFMC) | 0.11 | 0.12 | 0.11 | 0.11 | 0.11 |
|  |  | HCR 5 (Avg F) | 0.24 | 0.18 | 0.18 | 0.18 | 0.18 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.02 | 0.02 | 0.01 | 2.05 |
|  |  | HCR 3b (Dynamic SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0.02 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.03 | 0.02 | 0.02 | 0.03 |
|  |  | HCR 3a (SESSF) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 3b (Dynamic SESSF) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 2b (Dynamic PFMC) | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
|  |  | HCR 3a (SESSF) | 0.01 | 0 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 |
|  |  | HCR 5 (Avg F) | 0.04 | 0.01 | 0.01 | 0.01 | 0.01 |

[1] “**Supplementary Table 5.a.5.** Summary of performance metric 5: probability that the population is perceived as undergoing overfishing in the terminal year of the EM across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.b.5.** Summary of performance metric 5: probability that the population is perceived as undergoing overfishing in the terminal year of the EM across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.06 | 0.04 | 0.08 | 0.06 | 0.07 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.06 | 0.05 | 0.07 | 0.06 | 0.06 |
|  |  | HCR 2a (PFMC) | 0.16 | 0.14 | 0.15 | 0.16 | 0.16 |
|  |  | HCR 2b (Dynamic PFMC) | 0.2 | 0.17 | 0.22 | 0.19 | 0.2 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 1 | 0.99 | 1 | 1 | 0.99 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.04 | 0.02 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.01 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 |
|  |  | HCR 2b (Dynamic PFMC) | 0.06 | 0.05 | 0.07 | 0.06 | 0.06 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.09 | 0.1 | 0.09 | 0.08 | 0.09 |
|  |  | HCR 5 (Avg F) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.17 | 0.15 | 0.17 | 0.18 | 0.17 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.17 | 0.14 | 0.19 | 0.17 | 0.17 |
|  |  | HCR 2a (PFMC) | 0.31 | 0.32 | 0.25 | 0.32 | 0.31 |
|  |  | HCR 2b (Dynamic PFMC) | 0.35 | 0.32 | 0.37 | 0.34 | 0.35 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 1 | 1 | 1 | 1 | 1 |
|  |  | HCR 5 (Avg F) | 0 | 0.04 | 0.05 | 0.04 | 0.05 |
|  | *Est M* | HCR 1a (NPFMC) | 0.11 | 0.1 | 0.13 | 0.11 | 0.11 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.89 | 0.93 | 0.92 | 0.91 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.08 | 0.07 | 0.07 | 0.09 | 0.07 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.08 | 0.06 | 0.09 | 0.09 | 0.07 |
|  |  | HCR 2a (PFMC) | 0.19 | 0.19 | 0.18 | 0.19 | 0.18 |
|  |  | HCR 2b (Dynamic PFMC) | 0.2 | 0.2 | 0.22 | 0.23 | 0.21 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.99 | 0.99 | 1 | 1 | 0.99 |
|  |  | HCR 5 (Avg F) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.03 | 0.02 | 0.03 | 0.02 |
|  |  | HCR 5 (Avg F) | 0 | 0.28 | 0.29 | 0.31 | 0.27 |

[1] “**Supplementary Table 5.a.6.** Summary of performance metric 6: probability that the population is perceived to be overfished in the terminal year of the EM across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0.06 | 0.25 |  |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  |  |  |  |  |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0.06 | 0.25 |  |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  |  |  |  |  |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0.05 | 0.2 | 0.08 | 0.07 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0.04 | 0.19 | 0.07 | 0.07 |

[1] “**Supplementary Table 5.b.6.** Summary of performance metric 6: probability that the population is perceived to be overfished in the terminal year of the EM across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.06 | 0.06 | 0.11 | 0.06 | 0.06 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0.05 | 0.11 | 0.06 | 0.06 |
|  |  | HCR 5 (Avg F) |  | 0.03 | 0.03 | 0.02 | 0.02 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.06 | 0.06 | 0.08 | 0.06 | 0.06 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0.05 | 0.08 | 0.05 | 0.05 |
|  |  | HCR 5 (Avg F) |  | 0.05 | 0.07 | 0.05 | 0.05 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.06 | 0.05 | 0.07 | 0.06 | 0.06 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 2a (PFMC) | 0.1 | 0.08 | 0.18 | 0.1 | 0.1 |
|  |  | HCR 2b (Dynamic PFMC) | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 3a (SESSF) |  | 0.01 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 4 (NEFMC) |  | 0.09 | 0.23 | 0.12 | 0.12 |
|  |  | HCR 5 (Avg F) |  | 0.06 | 0.08 | 0.07 | 0.07 |
|  | *Est M* | HCR 1a (NPFMC) | 0.07 | 0.07 | 0.08 | 0.07 | 0.07 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.1 | 0.1 | 0.11 | 0.1 | 0.1 |
|  |  | HCR 2b (Dynamic PFMC) | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 3a (SESSF) |  | 0.1 | 0.11 | 0.1 | 0.11 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0.07 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 4 (NEFMC) |  | 0.1 | 0.12 | 0.1 | 0.1 |
|  |  | HCR 5 (Avg F) |  | 0.16 | 0.6 | 0.3 | 0.29 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.06 | 0.06 | 0.09 | 0.07 | 0.06 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0.06 | 0.09 | 0.08 | 0.06 |
|  |  | HCR 5 (Avg F) |  | 0.05 | 0.05 | 0.05 | 0.05 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.01 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.08 | 0.08 | 0.09 | 0.09 | 0.08 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0.06 | 0.06 | 0.06 | 0.06 |
|  |  | HCR 5 (Avg F) |  | 0.06 | 0.09 | 0.08 | 0.07 |

[1] “**Supplementary Table 5.a.7.** Summary of performance metric 7: probability that the population is undergoing overfishing as determined from the OM across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.1 | 0.01 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.06 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.b.7.** Summary of performance metric 7: probability that the population is undergoing overfishing as determined from the OM across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.26 | 0.29 | 0.19 | 0.26 | 0.26 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.12 | 0.1 | 0.15 | 0.12 | 0.13 |
|  |  | HCR 2a (PFMC) | 0.41 | 0.37 | 0.38 | 0.42 | 0.41 |
|  |  | HCR 2b (Dynamic PFMC) | 0.49 | 0.41 | 0.52 | 0.48 | 0.48 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 1 | 0.99 | 1 | 1 | 0.99 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 1 | 1 | 0.99 | 1 | 1 |
|  |  | HCR 1b (Dynamic NPFMC) | 1 | 1 | 1 | 1 | 1 |
|  |  | HCR 2a (PFMC) | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
|  |  | HCR 2b (Dynamic PFMC) | 1 | 1 | 1 | 1 | 1 |
|  |  | HCR 3a (SESSF) | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 |
|  |  | HCR 3b (Dynamic SESSF) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 4 (NEFMC) | 1 | 1 | 1 | 1 | 1 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.69 | 0.81 | 0.75 | 0.74 |
|  | *Est M* | HCR 1a (NPFMC) | 0.12 | 0.11 | 0.11 | 0.12 | 0.12 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.9 | 0.94 | 0.92 | 0.92 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.a.8.** Summary of performance metric 8: probability that the population is overfished as determined from the OM across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.05 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0.26 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.03 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0 | 0.07 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0.01 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.05 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0.3 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.05 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0.04 | 0.06 | 0.05 | 0.05 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0 | 0.04 | 0.06 | 0.05 | 0.05 |

[1] “**Supplementary Table 5.b.8.** Summary of performance metric 8: probability that the population is overfished as determined from the OM across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.05 | 0.06 | 0.05 | 0.05 | 0.05 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.1 | 0.09 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.1 | 0.09 | 0.11 | 0.1 | 0.1 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.05 | 0.05 | 0.05 | 0.05 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.05 | 0.05 | 0.05 | 0.05 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.35 | 0.32 | 0.32 | 0.35 | 0.35 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.29 | 0.23 | 0.37 | 0.29 | 0.29 |
|  |  | HCR 2a (PFMC) | 0.59 | 0.5 | 0.64 | 0.59 | 0.59 |
|  |  | HCR 2b (Dynamic PFMC) | 0.51 | 0.4 | 0.61 | 0.51 | 0.51 |
|  |  | HCR 3a (SESSF) | 0.23 | 0.22 | 0.2 | 0.23 | 0.23 |
|  |  | HCR 3b (Dynamic SESSF) | 0.16 | 0.13 | 0.2 | 0.16 | 0.16 |
|  |  | HCR 4 (NEFMC) | 0.55 | 0.47 | 0.64 | 0.56 | 0.56 |
|  |  | HCR 5 (Avg F) | 0.1 | 0.18 | 0.25 | 0.21 | 0.21 |
|  | *Est M* | HCR 1a (NPFMC) | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 2b (Dynamic PFMC) | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 3a (SESSF) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 3b (Dynamic SESSF) | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 4 (NEFMC) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
|  |  | HCR 5 (Avg F) | 0.09 | 0.18 | 0.25 | 0.21 | 0.21 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.16 | 0.07 | 0.14 | 0.13 | 0.1 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.16 | 0.09 | 0.2 | 0.17 | 0.12 |
|  |  | HCR 2a (PFMC) | 0.11 | 0.04 | 0.08 | 0.07 | 0.05 |
|  |  | HCR 2b (Dynamic PFMC) | 0.11 | 0.05 | 0.09 | 0.08 | 0.06 |
|  |  | HCR 3a (SESSF) | 0.09 | 0.01 | 0.03 | 0.03 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) | 0.11 | 0.04 | 0.09 | 0.07 | 0.06 |
|  |  | HCR 4 (NEFMC) | 0.18 | 0.11 | 0.23 | 0.19 | 0.14 |
|  |  | HCR 5 (Avg F) | 0.07 | 0.05 | 0.09 | 0.08 | 0.05 |
|  | *Est M* | HCR 1a (NPFMC) | 0.08 | 0 | 0.01 | 0.01 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.08 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.07 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0.08 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0.07 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0.08 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.09 | 0.03 | 0.04 | 0.04 | 0.03 |
|  |  | HCR 5 (Avg F) | 0.07 | 0.04 | 0.08 | 0.07 | 0.05 |

[1] “**Supplementary Table 5.a.9.** Summary of performance metric 9: probability that the population is overfished as determined from the OM, but is perceived as not overfished by the EM across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.b.9.** Summary of performance metric 9: probability that the population is overfished as determined from the OM, but is perceived as not overfished by the EM across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.04 | 0.02 | 0.03 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.01 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 |
|  |  | HCR 2b (Dynamic PFMC) | 0.06 | 0.05 | 0.07 | 0.06 | 0.06 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.06 | 0.07 | 0.06 | 0.06 | 0.06 |
|  |  | HCR 5 (Avg F) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.03 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0.03 | 0.02 | 0.03 | 0.03 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.08 | 0.07 | 0.07 | 0.09 | 0.07 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.08 | 0.06 | 0.09 | 0.09 | 0.07 |
|  |  | HCR 2a (PFMC) | 0.19 | 0.19 | 0.18 | 0.19 | 0.18 |
|  |  | HCR 2b (Dynamic PFMC) | 0.2 | 0.2 | 0.22 | 0.23 | 0.21 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.97 | 0.97 | 0.98 | 0.98 | 0.97 |
|  |  | HCR 5 (Avg F) | 0 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0.02 | 0.03 | 0.02 | 0.03 | 0.02 |
|  |  | HCR 5 (Avg F) | 0 | 0.28 | 0.29 | 0.31 | 0.27 |

[1] “**Supplementary Table 5.a.10.** Summary of performance metric 10: probability that the population is not overfished as determined from the OM, but is perceived as overfished by the EM across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0 | 0.09 | 0.01 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.06 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.b.10.** Summary of performance metric 10: probability that the population is not overfished as determined from the OM, but is perceived as overfished by the EM across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.2 | 0.25 | 0.12 | 0.2 | 0.2 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.07 | 0.05 | 0.08 | 0.06 | 0.07 |
|  |  | HCR 2a (PFMC) | 0.27 | 0.26 | 0.24 | 0.27 | 0.27 |
|  |  | HCR 2b (Dynamic PFMC) | 0.31 | 0.27 | 0.32 | 0.31 | 0.3 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0.01 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.83 | 0.85 | 0.82 | 0.82 | 0.83 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.83 | 0.86 | 0.81 | 0.83 | 0.83 |
|  |  | HCR 2a (PFMC) | 0.67 | 0.66 | 0.74 | 0.66 | 0.67 |
|  |  | HCR 2b (Dynamic PFMC) | 0.65 | 0.68 | 0.63 | 0.66 | 0.65 |
|  |  | HCR 3a (SESSF) | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 |
|  |  | HCR 3b (Dynamic SESSF) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0.01 | 0.65 | 0.76 | 0.71 | 0.7 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.01 | 0 | 0.01 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0.05 | 0.03 | 0.03 | 0.04 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 5.a.11.** Summary of performance metric 11: probability that the population undergoing overfishing as determined from the OM, but is perceived as not undergoing overfishing by the EM across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0.06 | 0.06 |  |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  |  |  |  |  |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0.06 | 0.06 |  |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  |  |  |  |  |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0.01 | 0.14 | 0.03 | 0.03 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0.01 | 0.13 | 0.03 | 0.02 |

[1] “**Supplementary Table 5.b.11.** Summary of performance metric 11: probability that the population undergoing overfishing as determined from the OM, but is perceived as not undergoing overfishing by the EM across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.03 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0.03 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0 | 0.03 | 0.01 | 0.01 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0.02 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0.02 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.01 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0.01 | 0 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0.02 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0.01 | 0.34 | 0.09 | 0.08 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0.02 | 0.03 | 0.03 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0.02 | 0.02 | 0.02 | 0.02 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0.02 | 0.01 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.01 | 0.08 | 0.09 | 0.09 | 0.08 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 5 (Avg F) |  | 0.03 | 0.04 | 0.03 | 0.03 |

[1] “**Supplementary Table 5.a.12.** Summary of performance metric 12: probability that the population is not undergoing overfishing as determined from the OM, but is perceived as undergoing overfishing by the EM across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0.07 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0.11 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) |  | 0.01 | 0 | 0 | 0.01 |

[1] “**Supplementary Table 5.b.12.** Summary of performance metric 12: probability that the population is not undergoing overfishing as determined from the OM, but is perceived as undergoing overfishing by the EM across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.02 | 0.03 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.03 | 0.04 | 0.02 | 0.03 | 0.03 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0.03 | 0.03 | 0.03 | 0.03 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0.03 | 0.02 | 0.03 | 0.04 |
|  |  | HCR 5 (Avg F) |  | 0.03 | 0.03 | 0.03 | 0.03 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.29 | 0.27 | 0.26 | 0.29 | 0.29 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.25 | 0.18 | 0.32 | 0.25 | 0.25 |
|  |  | HCR 2a (PFMC) | 0.49 | 0.42 | 0.46 | 0.48 | 0.48 |
|  |  | HCR 2b (Dynamic PFMC) | 0.46 | 0.35 | 0.56 | 0.46 | 0.46 |
|  |  | HCR 3a (SESSF) |  | 0.2 | 0.18 | 0.21 | 0.22 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0.1 | 0.17 | 0.13 | 0.13 |
|  |  | HCR 4 (NEFMC) |  | 0.38 | 0.41 | 0.44 | 0.43 |
|  |  | HCR 5 (Avg F) |  | 0.12 | 0.17 | 0.15 | 0.14 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0.03 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.12 | 0.06 | 0.13 | 0.12 | 0.09 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.16 | 0.09 | 0.2 | 0.17 | 0.12 |
|  |  | HCR 2a (PFMC) | 0.05 | 0.01 | 0.03 | 0.02 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0.1 | 0.05 | 0.09 | 0.08 | 0.06 |
|  |  | HCR 3a (SESSF) |  | 0.01 | 0.03 | 0.03 | 0.02 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0.04 | 0.09 | 0.07 | 0.06 |
|  |  | HCR 4 (NEFMC) |  | 0.05 | 0.14 | 0.11 | 0.08 |
|  |  | HCR 5 (Avg F) |  | 0.02 | 0.06 | 0.05 | 0.03 |
|  | *Est M* | HCR 1a (NPFMC) | 0.06 | 0 | 0.01 | 0.01 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.08 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0.06 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0.01 | 0.02 | 0.02 | 0.01 |

[1] “**Supplementary Table 5.a.13.** Summary of performance metric 13: terminal spawning stock biomass depletion across scenarios for Cod in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.4 | 0.62 | 0.4 | 0.47 | 0.47 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.4 | 0.42 | 0.39 | 0.4 | 0.4 |
|  |  | HCR 2a (PFMC) | 0.49 | 0.76 | 0.46 | 0.56 | 0.56 |
|  |  | HCR 2b (Dynamic PFMC) | 0.49 | 0.51 | 0.48 | 0.49 | 0.49 |
|  |  | HCR 3a (SESSF) | 0.47 | 0.73 | 0.45 | 0.54 | 0.54 |
|  |  | HCR 3b (Dynamic SESSF) | 0.47 | 0.48 | 0.46 | 0.47 | 0.47 |
|  |  | HCR 4 (NEFMC) | 0.5 | 0.61 | 0.37 | 0.45 | 0.45 |
|  |  | HCR 5 (Avg F) | 0.44 | 0.47 | 0.29 | 0.61 | 0.61 |
|  | *Est M* | HCR 1a (NPFMC) | 0.39 | 0.6 | 0.39 | 0.45 | 0.45 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.39 | 0.4 | 0.38 | 0.39 | 0.39 |
|  |  | HCR 2a (PFMC) | 0.47 | 0.73 | 0.45 | 0.54 | 0.54 |
|  |  | HCR 2b (Dynamic PFMC) | 0.47 | 0.49 | 0.46 | 0.47 | 0.47 |
|  |  | HCR 3a (SESSF) | 0.46 | 0.71 | 0.44 | 0.53 | 0.53 |
|  |  | HCR 3b (Dynamic SESSF) | 0.46 | 0.47 | 0.45 | 0.46 | 0.46 |
|  |  | HCR 4 (NEFMC) | 0.52 | 0.58 | 0.35 | 0.43 | 0.43 |
|  |  | HCR 5 (Avg F) | 0.44 | 0.9 | 0.55 | 0.66 | 0.66 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.4 | 0.61 | 0.39 | 0.46 | 0.46 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.39 | 0.41 | 0.38 | 0.39 | 0.39 |
|  |  | HCR 2a (PFMC) | 0.48 | 0.75 | 0.46 | 0.55 | 0.55 |
|  |  | HCR 2b (Dynamic PFMC) | 0.48 | 0.5 | 0.47 | 0.48 | 0.48 |
|  |  | HCR 3a (SESSF) | 0.46 | 0.71 | 0.45 | 0.53 | 0.53 |
|  |  | HCR 3b (Dynamic SESSF) | 0.46 | 0.48 | 0.45 | 0.46 | 0.46 |
|  |  | HCR 4 (NEFMC) | 0.49 | 0.6 | 0.37 | 0.44 | 0.44 |
|  |  | HCR 5 (Avg F) | 0.43 | 0.45 | 0.28 | 0.6 | 0.6 |
|  | *Est M* | HCR 1a (NPFMC) | 0.4 | 0.62 | 0.4 | 0.47 | 0.47 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.4 | 0.42 | 0.39 | 0.4 | 0.4 |
|  |  | HCR 2a (PFMC) | 0.49 | 0.76 | 0.47 | 0.56 | 0.56 |
|  |  | HCR 2b (Dynamic PFMC) | 0.49 | 0.51 | 0.48 | 0.49 | 0.49 |
|  |  | HCR 3a (SESSF) | 0.47 | 0.73 | 0.46 | 0.54 | 0.54 |
|  |  | HCR 3b (Dynamic SESSF) | 0.47 | 0.48 | 0.46 | 0.47 | 0.47 |
|  |  | HCR 4 (NEFMC) | 0.53 | 0.6 | 0.37 | 0.45 | 0.45 |
|  |  | HCR 5 (Avg F) | 0.45 | 0.9 | 0.54 | 0.66 | 0.66 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.67 | 0.81 | 0.59 | 0.67 | 0.66 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.67 | 0.82 | 0.57 | 0.66 | 0.66 |
|  |  | HCR 2a (PFMC) | 0.79 | 0.95 | 0.68 | 0.78 | 0.78 |
|  |  | HCR 2b (Dynamic PFMC) | 0.79 | 0.95 | 0.68 | 0.78 | 0.78 |
|  |  | HCR 3a (SESSF) | 0.76 | 0.91 | 0.66 | 0.75 | 0.75 |
|  |  | HCR 3b (Dynamic SESSF) | 0.76 | 0.91 | 0.65 | 0.75 | 0.75 |
|  |  | HCR 4 (NEFMC) | 0.78 | 0.81 | 0.56 | 0.65 | 0.65 |
|  |  | HCR 5 (Avg F) | 0.71 | 0.56 | 0.4 | 0.46 | 0.46 |
|  | *Est M* | HCR 1a (NPFMC) | 0.68 | 0.84 | 0.59 | 0.67 | 0.67 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.68 | 0.84 | 0.58 | 0.67 | 0.67 |
|  |  | HCR 2a (PFMC) | 0.81 | 0.99 | 0.69 | 0.8 | 0.8 |
|  |  | HCR 2b (Dynamic PFMC) | 0.81 | 0.99 | 0.69 | 0.8 | 0.8 |
|  |  | HCR 3a (SESSF) | 0.77 | 0.95 | 0.67 | 0.76 | 0.76 |
|  |  | HCR 3b (Dynamic SESSF) | 0.77 | 0.95 | 0.66 | 0.77 | 0.76 |
|  |  | HCR 4 (NEFMC) | 0.83 | 0.82 | 0.56 | 0.65 | 0.65 |
|  |  | HCR 5 (Avg F) | 0.73 | 0.57 | 0.4 | 0.46 | 0.46 |

[1] “**Supplementary Table 5.b.13.** Summary of performance metric 13: terminal spawning stock biomass depletion across scenarios for Cod in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.37 | 0.38 | 0.37 | 0.37 | 0.37 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.41 | 0.42 | 0.4 | 0.41 | 0.41 |
|  |  | HCR 2a (PFMC) | 0.43 | 0.44 | 0.42 | 0.43 | 0.43 |
|  |  | HCR 2b (Dynamic PFMC) | 0.46 | 0.48 | 0.45 | 0.46 | 0.46 |
|  |  | HCR 3a (SESSF) | 0.46 | 0.47 | 0.45 | 0.45 | 0.45 |
|  |  | HCR 3b (Dynamic SESSF) | 0.49 | 0.5 | 0.47 | 0.48 | 0.48 |
|  |  | HCR 4 (NEFMC) | 0.37 | 0.38 | 0.35 | 0.37 | 0.37 |
|  |  | HCR 5 (Avg F) | 0.72 | 0.51 | 0.48 | 0.49 | 0.49 |
|  | *Est M* | HCR 1a (NPFMC) | 0.46 | 0.47 | 0.47 | 0.46 | 0.46 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.51 | 0.51 | 0.5 | 0.51 | 0.51 |
|  |  | HCR 2a (PFMC) | 0.56 | 0.57 | 0.55 | 0.56 | 0.56 |
|  |  | HCR 2b (Dynamic PFMC) | 0.61 | 0.62 | 0.6 | 0.61 | 0.61 |
|  |  | HCR 3a (SESSF) | 0.51 | 0.52 | 0.51 | 0.52 | 0.51 |
|  |  | HCR 3b (Dynamic SESSF) | 0.58 | 0.59 | 0.57 | 0.58 | 0.58 |
|  |  | HCR 4 (NEFMC) | 0.46 | 0.47 | 0.45 | 0.46 | 0.46 |
|  |  | HCR 5 (Avg F) | 0.75 | 0.5 | 0.48 | 0.49 | 0.49 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.2 | 0.22 | 0.19 | 0.2 | 0.2 |
|  |  | HCR 2a (PFMC) | 0.23 | 0.24 | 0.22 | 0.23 | 0.23 |
|  |  | HCR 2b (Dynamic PFMC) | 0.25 | 0.26 | 0.23 | 0.25 | 0.25 |
|  |  | HCR 3a (SESSF) | 0.25 | 0.26 | 0.25 | 0.25 | 0.25 |
|  |  | HCR 3b (Dynamic SESSF) | 0.26 | 0.28 | 0.25 | 0.26 | 0.26 |
|  |  | HCR 4 (NEFMC) | 0.19 | 0.2 | 0.18 | 0.19 | 0.19 |
|  |  | HCR 5 (Avg F) | 0.56 | 0.28 | 0.25 | 0.26 | 0.26 |
|  | *Est M* | HCR 1a (NPFMC) | 0.41 | 0.42 | 0.41 | 0.41 | 0.41 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.42 | 0.44 | 0.41 | 0.42 | 0.42 |
|  |  | HCR 2a (PFMC) | 0.49 | 0.5 | 0.47 | 0.49 | 0.49 |
|  |  | HCR 2b (Dynamic PFMC) | 0.51 | 0.53 | 0.5 | 0.51 | 0.51 |
|  |  | HCR 3a (SESSF) | 0.48 | 0.49 | 0.48 | 0.48 | 0.48 |
|  |  | HCR 3b (Dynamic SESSF) | 0.5 | 0.52 | 0.49 | 0.5 | 0.5 |
|  |  | HCR 4 (NEFMC) | 0.38 | 0.4 | 0.37 | 0.39 | 0.38 |
|  |  | HCR 5 (Avg F) | 0.55 | 0.27 | 0.24 | 0.26 | 0.26 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.36 | 0.44 | 0.36 | 0.37 | 0.4 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.36 | 0.45 | 0.34 | 0.37 | 0.4 |
|  |  | HCR 2a (PFMC) | 0.42 | 0.52 | 0.4 | 0.43 | 0.46 |
|  |  | HCR 2b (Dynamic PFMC) | 0.44 | 0.52 | 0.4 | 0.43 | 0.46 |
|  |  | HCR 3a (SESSF) | 0.43 | 0.52 | 0.42 | 0.43 | 0.47 |
|  |  | HCR 3b (Dynamic SESSF) | 0.43 | 0.52 | 0.4 | 0.43 | 0.46 |
|  |  | HCR 4 (NEFMC) | 0.36 | 0.44 | 0.34 | 0.36 | 0.39 |
|  |  | HCR 5 (Avg F) | 0.79 | 0.51 | 0.41 | 0.43 | 0.47 |
|  | *Est M* | HCR 1a (NPFMC) | 0.5 | 0.6 | 0.49 | 0.51 | 0.54 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.5 | 0.6 | 0.48 | 0.51 | 0.55 |
|  |  | HCR 2a (PFMC) | 0.62 | 0.74 | 0.59 | 0.63 | 0.67 |
|  |  | HCR 2b (Dynamic PFMC) | 0.63 | 0.75 | 0.59 | 0.63 | 0.67 |
|  |  | HCR 3a (SESSF) | 0.55 | 0.65 | 0.53 | 0.55 | 0.59 |
|  |  | HCR 3b (Dynamic SESSF) | 0.56 | 0.67 | 0.53 | 0.56 | 0.61 |
|  |  | HCR 4 (NEFMC) | 0.51 | 0.61 | 0.49 | 0.52 | 0.55 |
|  |  | HCR 5 (Avg F) | 0.83 | 0.51 | 0.41 | 0.43 | 0.47 |

[1] “**Supplementary Table 6.a.1.** Summary of performance metric 1: average annual catch across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 32,708 | 43,344 | 26,754 | 43,355 | 26,756 |
|  |  | HCR 1b (Dynamic NPFMC) | 32,797 | 43,336 | 27,447 | 43,343 | 27,445 |
|  |  | HCR 2a (PFMC) | 35,017 | 46,268 | 29,358 | 46,257 | 29,362 |
|  |  | HCR 2b (Dynamic PFMC) | 35,019 | 46,269 | 29,371 | 46,260 | 29,376 |
|  |  | HCR 3a (SESSF) | 28,925 | 37,995 | 24,126 | 37,989 | 24,128 |
|  |  | HCR 3b (Dynamic SESSF) | 28,931 | 38,010 | 24,368 | 38,005 | 24,370 |
|  |  | HCR 4 (NEFMC) | 31,016 | 43,376 | 27,661 | 43,375 | 27,667 |
|  |  | HCR 5 (Avg F) | 32,078 | 14,690 | 9,683 | 39,954 | 25,518 |
|  | *Est M* | HCR 1a (NPFMC) | 33,554 | 44,595 | 27,414 | 44,613 | 27,423 |
|  |  | HCR 1b (Dynamic NPFMC) | 33,675 | 44,569 | 28,169 | 44,572 | 28,161 |
|  |  | HCR 2a (PFMC) | 36,000 | 47,648 | 30,157 | 47,642 | 30,152 |
|  |  | HCR 2b (Dynamic PFMC) | 36,006 | 47,615 | 30,175 | 47,642 | 30,199 |
|  |  | HCR 3a (SESSF) | 29,882 | 39,334 | 24,846 | 39,327 | 24,855 |
|  |  | HCR 3b (Dynamic SESSF) | 29,875 | 39,329 | 25,148 | 39,316 | 25,130 |
|  |  | HCR 4 (NEFMC) | 30,381 | 44,725 | 28,428 | 44,714 | 28,435 |
|  |  | HCR 5 (Avg F) | 31,805 | 36,413 | 23,310 | 36,412 | 23,317 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 37,997 | 51,312 | 30,720 | 51,321 | 30,717 |
|  |  | HCR 1b (Dynamic NPFMC) | 37,834 | 51,194 | 31,042 | 51,201 | 31,051 |
|  |  | HCR 2a (PFMC) | 41,712 | 56,331 | 34,368 | 56,328 | 34,366 |
|  |  | HCR 2b (Dynamic PFMC) | 41,715 | 56,341 | 34,373 | 56,352 | 34,373 |
|  |  | HCR 3a (SESSF) | 32,557 | 43,726 | 26,814 | 43,707 | 26,810 |
|  |  | HCR 3b (Dynamic SESSF) | 32,558 | 43,729 | 26,947 | 43,720 | 26,959 |
|  |  | HCR 4 (NEFMC) | 34,477 | 51,317 | 31,464 | 51,336 | 31,462 |
|  |  | HCR 5 (Avg F) | 36,156 | 15,541 | 9,858 | 43,329 | 26,676 |
|  | *Est M* | HCR 1a (NPFMC) | 47,341 | 64,623 | 37,954 | 64,651 | 37,965 |
|  |  | HCR 1b (Dynamic NPFMC) | 47,539 | 64,495 | 38,999 | 64,496 | 38,995 |
|  |  | HCR 2a (PFMC) | 52,773 | 71,689 | 43,208 | 71,707 | 43,230 |
|  |  | HCR 2b (Dynamic PFMC) | 52,783 | 71,671 | 43,309 | 71,690 | 43,320 |
|  |  | HCR 3a (SESSF) | 42,080 | 56,861 | 34,137 | 56,870 | 34,128 |
|  |  | HCR 3b (Dynamic SESSF) | 42,161 | 56,865 | 34,773 | 56,887 | 34,766 |
|  |  | HCR 4 (NEFMC) | 36,727 | 64,958 | 39,477 | 64,916 | 39,479 |
|  |  | HCR 5 (Avg F) | 42,028 | 40,689 | 25,040 | 40,670 | 25,024 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 35,236 | 43,307 | 29,815 | 46,253 | 28,986 |
|  |  | HCR 1b (Dynamic NPFMC) | 35,220 | 43,157 | 30,264 | 46,190 | 29,501 |
|  |  | HCR 2a (PFMC) | 36,914 | 44,863 | 31,875 | 48,374 | 31,013 |
|  |  | HCR 2b (Dynamic PFMC) | 36,913 | 44,871 | 31,890 | 48,345 | 31,023 |
|  |  | HCR 3a (SESSF) | 30,406 | 36,880 | 26,287 | 39,621 | 25,518 |
|  |  | HCR 3b (Dynamic SESSF) | 30,413 | 36,880 | 26,369 | 39,637 | 25,678 |
|  |  | HCR 4 (NEFMC) | 32,795 | 43,374 | 30,519 | 46,351 | 29,779 |
|  |  | HCR 5 (Avg F) | 33,756 | 14,130 | 10,388 | 15,157 | 10,123 |
|  | *Est M* | HCR 1a (NPFMC) | 37,013 | 46,023 | 31,149 | 48,741 | 30,398 |
|  |  | HCR 1b (Dynamic NPFMC) | 36,968 | 45,884 | 31,610 | 48,654 | 30,904 |
|  |  | HCR 2a (PFMC) | 38,922 | 47,982 | 33,399 | 51,204 | 32,625 |
|  |  | HCR 2b (Dynamic PFMC) | 38,900 | 47,969 | 33,408 | 51,158 | 32,621 |
|  |  | HCR 3a (SESSF) | 32,160 | 39,550 | 27,637 | 42,090 | 26,952 |
|  |  | HCR 3b (Dynamic SESSF) | 32,162 | 39,532 | 27,746 | 42,067 | 27,104 |
|  |  | HCR 4 (NEFMC) | 30,143 | 46,161 | 31,917 | 48,922 | 31,241 |
|  |  | HCR 5 (Avg F) | 33,976 | 14,122 | 10,324 | 15,163 | 10,061 |

[1] “**Supplementary Table 6.b.1.** Summary of performance metric 1: average annual catch across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 85,510 | 111,297 | 70,793 | 111,297 | 70,789 |
|  |  | HCR 1b (Dynamic NPFMC) | 85,815 | 111,331 | 72,687 | 111,370 | 72,695 |
|  |  | HCR 2a (PFMC) | 94,495 | 122,598 | 80,310 | 122,562 | 80,293 |
|  |  | HCR 2b (Dynamic PFMC) | 94,537 | 122,577 | 80,363 | 122,579 | 80,348 |
|  |  | HCR 3a (SESSF) | 74,509 | 95,923 | 63,164 | 95,929 | 63,156 |
|  |  | HCR 3b (Dynamic SESSF) | 74,500 | 95,939 | 63,745 | 95,951 | 63,739 |
|  |  | HCR 4 (NEFMC) | 86,773 | 112,260 | 74,000 | 112,287 | 73,998 |
|  |  | HCR 5 (Avg F) | 78,294 | 27,073 | 18,599 | 27,078 | 18,610 |
|  | *Est M* | HCR 1a (NPFMC) | 84,908 | 110,012 | 70,628 | 110,063 | 70,639 |
|  |  | HCR 1b (Dynamic NPFMC) | 85,229 | 110,165 | 72,410 | 110,170 | 72,415 |
|  |  | HCR 2a (PFMC) | 94,581 | 122,540 | 80,542 | 122,598 | 80,559 |
|  |  | HCR 2b (Dynamic PFMC) | 94,622 | 122,551 | 80,568 | 122,542 | 80,634 |
|  |  | HCR 3a (SESSF) | 74,394 | 95,307 | 63,212 | 95,357 | 63,235 |
|  |  | HCR 3b (Dynamic SESSF) | 74,453 | 95,300 | 63,710 | 95,268 | 63,727 |
|  |  | HCR 4 (NEFMC) | 88,139 | 113,548 | 75,199 | 113,640 | 75,183 |
|  |  | HCR 5 (Avg F) | 66,601 | 27,184 | 18,743 | 27,167 | 18,735 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 98,592 | 129,996 | 81,014 | 130,003 | 80,990 |
|  |  | HCR 1b (Dynamic NPFMC) | 98,382 | 129,924 | 82,190 | 129,894 | 82,193 |
|  |  | HCR 2a (PFMC) | 110,885 | 146,175 | 93,057 | 146,191 | 93,060 |
|  |  | HCR 2b (Dynamic PFMC) | 110,884 | 146,195 | 93,082 | 146,203 | 93,095 |
|  |  | HCR 3a (SESSF) | 83,881 | 109,903 | 70,423 | 109,915 | 70,428 |
|  |  | HCR 3b (Dynamic SESSF) | 83,890 | 109,923 | 70,777 | 109,911 | 70,777 |
|  |  | HCR 4 (NEFMC) | 99,842 | 131,292 | 84,021 | 131,272 | 84,008 |
|  |  | HCR 5 (Avg F) | 94,567 | 26,254 | 17,565 | 26,268 | 17,563 |
|  | *Est M* | HCR 1a (NPFMC) | 108,692 | 144,560 | 88,547 | 144,633 | 88,530 |
|  |  | HCR 1b (Dynamic NPFMC) | 108,990 | 144,728 | 90,950 | 144,666 | 90,927 |
|  |  | HCR 2a (PFMC) | 124,610 | 166,389 | 103,549 | 166,257 | 103,519 |
|  |  | HCR 2b (Dynamic PFMC) | 124,547 | 166,369 | 103,701 | 166,315 | 103,642 |
|  |  | HCR 3a (SESSF) | 94,181 | 123,831 | 78,417 | 123,840 | 78,426 |
|  |  | HCR 3b (Dynamic SESSF) | 94,153 | 123,817 | 79,300 | 123,814 | 79,382 |
|  |  | HCR 4 (NEFMC) | 113,334 | 150,824 | 94,611 | 150,925 | 94,587 |
|  |  | HCR 5 (Avg F) | 72,742 | 28,437 | 19,013 | 28,558 | 18,999 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 101,402 | 130,510 | 84,502 | 130,400 | 84,422 |
|  |  | HCR 1b (Dynamic NPFMC) | 101,058 | 130,473 | 85,140 | 130,232 | 85,078 |
|  |  | HCR 2a (PFMC) | 114,400 | 147,603 | 96,776 | 147,730 | 96,593 |
|  |  | HCR 2b (Dynamic PFMC) | 114,380 | 147,574 | 96,761 | 147,722 | 96,623 |
|  |  | HCR 3a (SESSF) | 85,339 | 109,032 | 72,540 | 108,859 | 72,472 |
|  |  | HCR 3b (Dynamic SESSF) | 85,327 | 109,058 | 72,641 | 108,859 | 72,613 |
|  |  | HCR 4 (NEFMC) | 102,671 | 131,909 | 87,075 | 131,786 | 86,997 |
|  |  | HCR 5 (Avg F) | 74,251 | 25,927 | 18,055 | 25,824 | 18,066 |
|  | *Est M* | HCR 1a (NPFMC) | 109,682 | 142,037 | 90,779 | 141,785 | 90,756 |
|  |  | HCR 1b (Dynamic NPFMC) | 109,568 | 142,004 | 92,322 | 141,704 | 92,281 |
|  |  | HCR 2a (PFMC) | 126,362 | 164,861 | 106,121 | 165,014 | 105,948 |
|  |  | HCR 2b (Dynamic PFMC) | 126,373 | 164,935 | 106,199 | 165,034 | 106,042 |
|  |  | HCR 3a (SESSF) | 93,594 | 119,856 | 79,230 | 119,667 | 79,173 |
|  |  | HCR 3b (Dynamic SESSF) | 93,569 | 119,861 | 79,633 | 119,639 | 79,630 |
|  |  | HCR 4 (NEFMC) | 113,351 | 147,051 | 95,579 | 146,776 | 95,479 |
|  |  | HCR 5 (Avg F) | 27,098 | 27,694 | 19,311 | 27,520 | 19,322 |

[1] “**Supplementary Table 6.a.2.** Summary of performance metric 2: average interannual variation in catch (IAV) across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 237 | 244 | 258 | 246 | 258 |
|  |  | HCR 1b (Dynamic NPFMC) | 218 | 248 | 225 | 251 | 225 |
|  |  | HCR 2a (PFMC) | 286 | 324 | 296 | 323 | 296 |
|  |  | HCR 2b (Dynamic PFMC) | 286 | 325 | 295 | 325 | 294 |
|  |  | HCR 3a (SESSF) | 118 | 156 | 176 | 156 | 176 |
|  |  | HCR 3b (Dynamic SESSF) | 116 | 155 | 111 | 156 | 111 |
|  |  | HCR 4 (NEFMC) | 168 | 247 | 207 | 248 | 208 |
|  |  | HCR 5 (Avg F) | 577 | 30 | 15 | 1,076 | 1,544 |
|  | *Est M* | HCR 1a (NPFMC) | 295 | 288 | 324 | 288 | 325 |
|  |  | HCR 1b (Dynamic NPFMC) | 262 | 286 | 274 | 288 | 273 |
|  |  | HCR 2a (PFMC) | 364 | 386 | 387 | 383 | 386 |
|  |  | HCR 2b (Dynamic PFMC) | 363 | 387 | 385 | 386 | 383 |
|  |  | HCR 3a (SESSF) | 138 | 172 | 211 | 173 | 210 |
|  |  | HCR 3b (Dynamic SESSF) | 136 | 174 | 134 | 174 | 134 |
|  |  | HCR 4 (NEFMC) | 164 | 284 | 258 | 284 | 258 |
|  |  | HCR 5 (Avg F) | 461 | 734 | 1,032 | 734 | 1,032 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 322 | 433 | 327 | 435 | 324 |
|  |  | HCR 1b (Dynamic NPFMC) | 340 | 463 | 307 | 462 | 307 |
|  |  | HCR 2a (PFMC) | 413 | 566 | 372 | 564 | 372 |
|  |  | HCR 2b (Dynamic PFMC) | 412 | 564 | 372 | 569 | 370 |
|  |  | HCR 3a (SESSF) | 202 | 305 | 206 | 306 | 207 |
|  |  | HCR 3b (Dynamic SESSF) | 202 | 305 | 168 | 304 | 169 |
|  |  | HCR 4 (NEFMC) | 245 | 442 | 272 | 447 | 271 |
|  |  | HCR 5 (Avg F) | 547 | 67 | 33 | 917 | 1,170 |
|  | *Est M* | HCR 1a (NPFMC) | 788 | 732 | 881 | 734 | 879 |
|  |  | HCR 1b (Dynamic NPFMC) | 644 | 713 | 665 | 711 | 664 |
|  |  | HCR 2a (PFMC) | 1,280 | 1,246 | 1,428 | 1,243 | 1,425 |
|  |  | HCR 2b (Dynamic PFMC) | 1,273 | 1,244 | 1,403 | 1,241 | 1,401 |
|  |  | HCR 3a (SESSF) | 344 | 396 | 558 | 396 | 559 |
|  |  | HCR 3b (Dynamic SESSF) | 310 | 391 | 302 | 391 | 300 |
|  |  | HCR 4 (NEFMC) | 297 | 707 | 674 | 710 | 675 |
|  |  | HCR 5 (Avg F) | 668 | 617 | 827 | 617 | 828 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 214 | 242 | 229 | 250 | 230 |
|  |  | HCR 1b (Dynamic NPFMC) | 209 | 253 | 202 | 258 | 205 |
|  |  | HCR 2a (PFMC) | 266 | 315 | 258 | 324 | 262 |
|  |  | HCR 2b (Dynamic PFMC) | 266 | 316 | 258 | 322 | 260 |
|  |  | HCR 3a (SESSF) | 116 | 154 | 126 | 165 | 147 |
|  |  | HCR 3b (Dynamic SESSF) | 115 | 155 | 104 | 163 | 104 |
|  |  | HCR 4 (NEFMC) | 170 | 245 | 185 | 256 | 187 |
|  |  | HCR 5 (Avg F) | 506 | 30 | 17 | 34 | 17 |
|  | *Est M* | HCR 1a (NPFMC) | 251 | 276 | 272 | 282 | 274 |
|  |  | HCR 1b (Dynamic NPFMC) | 242 | 292 | 243 | 296 | 246 |
|  |  | HCR 2a (PFMC) | 317 | 374 | 328 | 381 | 332 |
|  |  | HCR 2b (Dynamic PFMC) | 318 | 375 | 327 | 378 | 332 |
|  |  | HCR 3a (SESSF) | 133 | 175 | 147 | 184 | 168 |
|  |  | HCR 3b (Dynamic SESSF) | 133 | 175 | 124 | 183 | 125 |
|  |  | HCR 4 (NEFMC) | 137 | 281 | 223 | 287 | 225 |
|  |  | HCR 5 (Avg F) | 397 | 30 | 17 | 33 | 17 |

[1] “**Supplementary Table 6.b.2.** Summary of performance metric 2: average interannual variation in catch (IAV) across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 515 | 452 | 639 | 453 | 640 |
|  |  | HCR 1b (Dynamic NPFMC) | 491 | 447 | 581 | 447 | 581 |
|  |  | HCR 2a (PFMC) | 1,107 | 937 | 1,296 | 937 | 1,298 |
|  |  | HCR 2b (Dynamic PFMC) | 1,106 | 937 | 1,294 | 937 | 1,295 |
|  |  | HCR 3a (SESSF) | 215 | 224 | 374 | 224 | 373 |
|  |  | HCR 3b (Dynamic SESSF) | 215 | 224 | 246 | 224 | 246 |
|  |  | HCR 4 (NEFMC) | 617 | 548 | 717 | 547 | 717 |
|  |  | HCR 5 (Avg F) | 1,284 | 19 | 7 | 19 | 8 |
|  | *Est M* | HCR 1a (NPFMC) | 1,762 | 1,423 | 2,135 | 1,421 | 2,134 |
|  |  | HCR 1b (Dynamic NPFMC) | 1,722 | 1,401 | 2,026 | 1,401 | 2,025 |
|  |  | HCR 2a (PFMC) | 2,927 | 2,346 | 3,433 | 2,344 | 3,428 |
|  |  | HCR 2b (Dynamic PFMC) | 2,925 | 2,346 | 3,430 | 2,346 | 3,423 |
|  |  | HCR 3a (SESSF) | 730 | 624 | 951 | 624 | 942 |
|  |  | HCR 3b (Dynamic SESSF) | 729 | 624 | 842 | 624 | 841 |
|  |  | HCR 4 (NEFMC) | 1,643 | 1,338 | 1,905 | 1,336 | 1,906 |
|  |  | HCR 5 (Avg F) | 819 | 19 | 7 | 19 | 7 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 503 | 496 | 639 | 496 | 639 |
|  |  | HCR 1b (Dynamic NPFMC) | 514 | 505 | 602 | 504 | 602 |
|  |  | HCR 2a (PFMC) | 1,058 | 950 | 1,229 | 950 | 1,229 |
|  |  | HCR 2b (Dynamic PFMC) | 1,057 | 950 | 1,228 | 950 | 1,227 |
|  |  | HCR 3a (SESSF) | 236 | 272 | 336 | 271 | 338 |
|  |  | HCR 3b (Dynamic SESSF) | 236 | 272 | 263 | 272 | 263 |
|  |  | HCR 4 (NEFMC) | 608 | 581 | 699 | 582 | 699 |
|  |  | HCR 5 (Avg F) | 1,288 | 22 | 12 | 22 | 12 |
|  | *Est M* | HCR 1a (NPFMC) | 1,504 | 1,241 | 1,881 | 1,240 | 1,883 |
|  |  | HCR 1b (Dynamic NPFMC) | 1,444 | 1,225 | 1,715 | 1,224 | 1,716 |
|  |  | HCR 2a (PFMC) | 2,919 | 2,376 | 3,482 | 2,381 | 3,482 |
|  |  | HCR 2b (Dynamic PFMC) | 2,918 | 2,378 | 3,469 | 2,380 | 3,468 |
|  |  | HCR 3a (SESSF) | 610 | 572 | 949 | 571 | 961 |
|  |  | HCR 3b (Dynamic SESSF) | 611 | 573 | 705 | 572 | 705 |
|  |  | HCR 4 (NEFMC) | 1,486 | 1,269 | 1,753 | 1,267 | 1,753 |
|  |  | HCR 5 (Avg F) | 309 | 26 | 11 | 26 | 11 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 479 | 483 | 592 | 481 | 592 |
|  |  | HCR 1b (Dynamic NPFMC) | 500 | 492 | 574 | 496 | 574 |
|  |  | HCR 2a (PFMC) | 1,012 | 926 | 1,160 | 927 | 1,161 |
|  |  | HCR 2b (Dynamic PFMC) | 1,013 | 928 | 1,160 | 926 | 1,161 |
|  |  | HCR 3a (SESSF) | 232 | 263 | 283 | 261 | 287 |
|  |  | HCR 3b (Dynamic SESSF) | 232 | 263 | 253 | 261 | 253 |
|  |  | HCR 4 (NEFMC) | 583 | 565 | 659 | 564 | 660 |
|  |  | HCR 5 (Avg F) | 698 | 20 | 13 | 20 | 13 |
|  | *Est M* | HCR 1a (NPFMC) | 1,322 | 1,141 | 1,620 | 1,141 | 1,621 |
|  |  | HCR 1b (Dynamic NPFMC) | 1,305 | 1,140 | 1,516 | 1,141 | 1,518 |
|  |  | HCR 2a (PFMC) | 2,608 | 2,193 | 3,054 | 2,189 | 3,057 |
|  |  | HCR 2b (Dynamic PFMC) | 2,607 | 2,193 | 3,049 | 2,189 | 3,052 |
|  |  | HCR 3a (SESSF) | 557 | 531 | 754 | 531 | 751 |
|  |  | HCR 3b (Dynamic SESSF) | 557 | 531 | 631 | 531 | 631 |
|  |  | HCR 4 (NEFMC) | 1,329 | 1,172 | 1,536 | 1,171 | 1,538 |
|  |  | HCR 5 (Avg F) | 32 | 22 | 11 | 22 | 11 |

[1] “**Supplementary Table 6.a.3.** Summary of performance metric 3: probability of the fishery being open across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.3.** Summary of performance metric 3: probability of the fishery being open across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.4.** Summary of performance metric 4: average relative mean squared error in estimate of spawning biomass in 2060 across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0.01 | 0.01 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.4.** Summary of performance metric 4: average relative mean squared error in estimate of spawning biomass in 2060 across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0.01 | 0 | 0.01 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.13 | 0.14 | 0.13 | 0.14 | 0.13 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.13 | 0.14 | 0.13 | 0.13 | 0.13 |
|  |  | HCR 2a (PFMC) | 0.15 | 0.15 | 0.14 | 0.15 | 0.14 |
|  |  | HCR 2b (Dynamic PFMC) | 0.15 | 0.15 | 0.14 | 0.15 | 0.14 |
|  |  | HCR 3a (SESSF) | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
|  |  | HCR 3b (Dynamic SESSF) | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
|  |  | HCR 4 (NEFMC) | 0.14 | 0.14 | 0.13 | 0.14 | 0.13 |
|  |  | HCR 5 (Avg F) | 0.13 | 0.09 | 0.09 | 0.09 | 0.09 |
|  | *Est M* | HCR 1a (NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 2a (PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.17 | 0.16 | 0.16 | 0.16 | 0.16 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.17 | 0.16 | 0.16 | 0.16 | 0.16 |
|  |  | HCR 2a (PFMC) | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 |
|  |  | HCR 2b (Dynamic PFMC) | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 |
|  |  | HCR 3a (SESSF) | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
|  |  | HCR 3b (Dynamic SESSF) | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
|  |  | HCR 4 (NEFMC) | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
|  |  | HCR 5 (Avg F) | 0.14 | 0.1 | 0.11 | 0.1 | 0.11 |
|  | *Est M* | HCR 1a (NPFMC) | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2a (PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
|  |  | HCR 3a (SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 3b (Dynamic SESSF) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 4 (NEFMC) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.5.** Summary of performance metric 5: probability that the population is perceived as undergoing overfishing in the terminal year of the EM across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.5.** Summary of performance metric 5: probability that the population is perceived as undergoing overfishing in the terminal year of the EM across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.6.** Summary of performance metric 6: probability that the population is perceived to be overfished in the terminal year of the EM across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0 |  |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  |  |  |  |  |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0 |  |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  |  |  |  |  |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.6.** Summary of performance metric 6: probability that the population is perceived to be overfished in the terminal year of the EM across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.7.** Summary of performance metric 7: probability that the population is undergoing overfishing as determined from the OM across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.09 | 0 | 0.09 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.06 | 0 | 0.37 | 0 | 0.37 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0 | 0.04 | 0 | 0.04 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.06 | 0 | 0.05 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.7.** Summary of performance metric 7: probability that the population is undergoing overfishing as determined from the OM across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.03 | 0.03 | 0.03 | 0.02 | 0.03 |
|  |  | HCR 2b (Dynamic PFMC) | 0.03 | 0.03 | 0.03 | 0.02 | 0.03 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.08 | 0.08 | 0.08 | 0.08 | 0.09 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 2a (PFMC) | 0.13 | 0.12 | 0.13 | 0.12 | 0.13 |
|  |  | HCR 2b (Dynamic PFMC) | 0.13 | 0.12 | 0.13 | 0.12 | 0.13 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.8.** Summary of performance metric 8: probability that the population is overfished as determined from the OM across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.01 | 0 | 0.01 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.01 | 0 | 0.01 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0.03 | 0 | 0.03 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.8.** Summary of performance metric 8: probability that the population is overfished as determined from the OM across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0.02 | 0 | 0.03 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.9.** Summary of performance metric 9: probability that the population is overfished as determined from the OM, but is perceived as not overfished by the EM across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.9.** Summary of performance metric 9: probability that the population is overfished as determined from the OM, but is perceived as not overfished by the EM across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.10.** Summary of performance metric 10: probability that the population is not overfished as determined from the OM, but is perceived as overfished by the EM across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0.09 | 0 | 0.09 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.06 | 0 | 0.37 | 0 | 0.37 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.01 | 0 | 0.04 | 0 | 0.04 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0.06 | 0 | 0.05 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0.01 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.10.** Summary of performance metric 10: probability that the population is not overfished as determined from the OM, but is perceived as overfished by the EM across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0.03 | 0.03 | 0.03 | 0.02 | 0.03 |
|  |  | HCR 2b (Dynamic PFMC) | 0.03 | 0.03 | 0.03 | 0.02 | 0.03 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0.08 | 0.08 | 0.08 | 0.08 | 0.09 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
|  |  | HCR 2a (PFMC) | 0.13 | 0.12 | 0.13 | 0.12 | 0.13 |
|  |  | HCR 2b (Dynamic PFMC) | 0.13 | 0.12 | 0.13 | 0.12 | 0.13 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.11.** Summary of performance metric 11: probability that the population undergoing overfishing as determined from the OM, but is perceived as not undergoing overfishing by the EM across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0 |  |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  |  |  |  |  |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0 |  |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  |  |  |  |  |
|  |  | HCR 3b (Dynamic SESSF) |  |  |  |  |  |
|  |  | HCR 4 (NEFMC) |  |  |  |  |  |
|  |  | HCR 5 (Avg F) |  |  |  |  |  |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.11.** Summary of performance metric 11: probability that the population undergoing overfishing as determined from the OM, but is perceived as not undergoing overfishing by the EM across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.12.** Summary of performance metric 12: probability that the population is not undergoing overfishing as determined from the OM, but is perceived as undergoing overfishing by the EM across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 |  | 0 |  |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 |  |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 |  | 0 |  |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 |  | 0 |  |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) |  | 0 |  | 0 |  |
|  |  | HCR 5 (Avg F) |  | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.b.12.** Summary of performance metric 12: probability that the population is not undergoing overfishing as determined from the OM, but is perceived as undergoing overfishing by the EM across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |
|  | *Est M* | HCR 1a (NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 1b (Dynamic NPFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 2a (PFMC) | 0 | 0 | 0.02 | 0 | 0.02 |
|  |  | HCR 2b (Dynamic PFMC) | 0 | 0 | 0.02 | 0 | 0.03 |
|  |  | HCR 3a (SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 3b (Dynamic SESSF) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 4 (NEFMC) | 0 | 0 | 0 | 0 | 0 |
|  |  | HCR 5 (Avg F) | 0 | 0 | 0 | 0 | 0 |

[1] “**Supplementary Table 6.a.13.** Summary of performance metric 13: terminal spawning stock biomass depletion across scenarios for Arrowtooth flounder in the EBS.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.44 | 0.6 | 0.41 | 0.6 | 0.41 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.44 | 0.45 | 0.43 | 0.45 | 0.43 |
|  |  | HCR 2a (PFMC) | 0.39 | 0.54 | 0.36 | 0.54 | 0.36 |
|  |  | HCR 2b (Dynamic PFMC) | 0.39 | 0.41 | 0.38 | 0.41 | 0.38 |
|  |  | HCR 3a (SESSF) | 0.51 | 0.7 | 0.46 | 0.7 | 0.46 |
|  |  | HCR 3b (Dynamic SESSF) | 0.51 | 0.53 | 0.5 | 0.53 | 0.5 |
|  |  | HCR 4 (NEFMC) | 0.47 | 0.6 | 0.39 | 0.6 | 0.39 |
|  |  | HCR 5 (Avg F) | 0.45 | 1.07 | 0.71 | 0.66 | 0.44 |
|  | *Est M* | HCR 1a (NPFMC) | 0.42 | 0.58 | 0.39 | 0.58 | 0.39 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.42 | 0.44 | 0.41 | 0.44 | 0.41 |
|  |  | HCR 2a (PFMC) | 0.37 | 0.51 | 0.34 | 0.51 | 0.34 |
|  |  | HCR 2b (Dynamic PFMC) | 0.37 | 0.39 | 0.36 | 0.39 | 0.36 |
|  |  | HCR 3a (SESSF) | 0.49 | 0.67 | 0.45 | 0.67 | 0.45 |
|  |  | HCR 3b (Dynamic SESSF) | 0.49 | 0.51 | 0.48 | 0.51 | 0.48 |
|  |  | HCR 4 (NEFMC) | 0.48 | 0.57 | 0.38 | 0.57 | 0.38 |
|  |  | HCR 5 (Avg F) | 0.45 | 0.72 | 0.48 | 0.72 | 0.48 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.54 | 0.76 | 0.48 | 0.76 | 0.48 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.55 | 0.57 | 0.55 | 0.57 | 0.55 |
|  |  | HCR 2a (PFMC) | 0.5 | 0.7 | 0.43 | 0.7 | 0.43 |
|  |  | HCR 2b (Dynamic PFMC) | 0.51 | 0.52 | 0.49 | 0.52 | 0.49 |
|  |  | HCR 3a (SESSF) | 0.61 | 0.85 | 0.53 | 0.85 | 0.53 |
|  |  | HCR 3b (Dynamic SESSF) | 0.62 | 0.63 | 0.61 | 0.63 | 0.61 |
|  |  | HCR 4 (NEFMC) | 0.58 | 0.76 | 0.47 | 0.76 | 0.47 |
|  |  | HCR 5 (Avg F) | 0.56 | 1.16 | 0.73 | 0.85 | 0.53 |
|  | *Est M* | HCR 1a (NPFMC) | 0.42 | 0.58 | 0.38 | 0.58 | 0.38 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.42 | 0.44 | 0.41 | 0.44 | 0.41 |
|  |  | HCR 2a (PFMC) | 0.34 | 0.48 | 0.3 | 0.48 | 0.3 |
|  |  | HCR 2b (Dynamic PFMC) | 0.34 | 0.36 | 0.33 | 0.36 | 0.33 |
|  |  | HCR 3a (SESSF) | 0.49 | 0.69 | 0.43 | 0.69 | 0.43 |
|  |  | HCR 3b (Dynamic SESSF) | 0.5 | 0.51 | 0.49 | 0.51 | 0.49 |
|  |  | HCR 4 (NEFMC) | 0.55 | 0.58 | 0.36 | 0.58 | 0.36 |
|  |  | HCR 5 (Avg F) | 0.49 | 0.89 | 0.55 | 0.89 | 0.55 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.53 | 0.6 | 0.49 | 0.61 | 0.49 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.52 | 0.6 | 0.48 | 0.61 | 0.48 |
|  |  | HCR 2a (PFMC) | 0.46 | 0.53 | 0.42 | 0.54 | 0.42 |
|  |  | HCR 2b (Dynamic PFMC) | 0.46 | 0.53 | 0.42 | 0.54 | 0.42 |
|  |  | HCR 3a (SESSF) | 0.6 | 0.68 | 0.55 | 0.69 | 0.55 |
|  |  | HCR 3b (Dynamic SESSF) | 0.6 | 0.68 | 0.55 | 0.69 | 0.55 |
|  |  | HCR 4 (NEFMC) | 0.54 | 0.6 | 0.48 | 0.61 | 0.48 |
|  |  | HCR 5 (Avg F) | 0.54 | 1.02 | 0.85 | 1.04 | 0.84 |
|  | *Est M* | HCR 1a (NPFMC) | 0.52 | 0.6 | 0.48 | 0.6 | 0.48 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.52 | 0.6 | 0.47 | 0.6 | 0.47 |
|  |  | HCR 2a (PFMC) | 0.45 | 0.52 | 0.41 | 0.53 | 0.41 |
|  |  | HCR 2b (Dynamic PFMC) | 0.45 | 0.52 | 0.41 | 0.53 | 0.41 |
|  |  | HCR 3a (SESSF) | 0.6 | 0.69 | 0.55 | 0.69 | 0.55 |
|  |  | HCR 3b (Dynamic SESSF) | 0.6 | 0.69 | 0.55 | 0.69 | 0.54 |
|  |  | HCR 4 (NEFMC) | 0.59 | 0.6 | 0.47 | 0.6 | 0.47 |
|  |  | HCR 5 (Avg F) | 0.55 | 1.02 | 0.85 | 1.04 | 0.84 |

[1] “**Supplementary Table 6.b.13.** Summary of performance metric 13: terminal spawning stock biomass depletion across scenarios for Arrowtooth flounder in the GOA.”

| **OM** | **EM** | **HCR** | **Exp. 1** | **Exp. 2** | **Exp. 3** | **Exp. 4** | **Exp. 5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *SS fix M* | *Fix M* | HCR 1a (NPFMC) | 0.42 | 0.44 | 0.42 | 0.44 | 0.42 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.44 | 0.46 | 0.43 | 0.46 | 0.43 |
|  |  | HCR 2a (PFMC) | 0.36 | 0.38 | 0.34 | 0.38 | 0.34 |
|  |  | HCR 2b (Dynamic PFMC) | 0.38 | 0.4 | 0.36 | 0.4 | 0.36 |
|  |  | HCR 3a (SESSF) | 0.5 | 0.52 | 0.48 | 0.52 | 0.48 |
|  |  | HCR 3b (Dynamic SESSF) | 0.52 | 0.54 | 0.5 | 0.54 | 0.5 |
|  |  | HCR 4 (NEFMC) | 0.42 | 0.44 | 0.4 | 0.44 | 0.4 |
|  |  | HCR 5 (Avg F) | 0.47 | 0.82 | 0.8 | 0.82 | 0.8 |
|  | *Est M* | HCR 1a (NPFMC) | 0.43 | 0.45 | 0.42 | 0.45 | 0.42 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.44 | 0.46 | 0.43 | 0.46 | 0.43 |
|  |  | HCR 2a (PFMC) | 0.36 | 0.38 | 0.34 | 0.38 | 0.34 |
|  |  | HCR 2b (Dynamic PFMC) | 0.37 | 0.39 | 0.36 | 0.39 | 0.36 |
|  |  | HCR 3a (SESSF) | 0.5 | 0.52 | 0.48 | 0.52 | 0.48 |
|  |  | HCR 3b (Dynamic SESSF) | 0.52 | 0.54 | 0.5 | 0.54 | 0.5 |
|  |  | HCR 4 (NEFMC) | 0.4 | 0.43 | 0.39 | 0.43 | 0.39 |
|  |  | HCR 5 (Avg F) | 0.55 | 0.82 | 0.8 | 0.82 | 0.8 |
| *SS est M* | *Fix M* | HCR 1a (NPFMC) | 0.48 | 0.5 | 0.47 | 0.5 | 0.47 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.5 | 0.52 | 0.49 | 0.52 | 0.49 |
|  |  | HCR 2a (PFMC) | 0.42 | 0.44 | 0.4 | 0.44 | 0.4 |
|  |  | HCR 2b (Dynamic PFMC) | 0.43 | 0.45 | 0.42 | 0.45 | 0.42 |
|  |  | HCR 3a (SESSF) | 0.55 | 0.57 | 0.53 | 0.57 | 0.53 |
|  |  | HCR 3b (Dynamic SESSF) | 0.57 | 0.59 | 0.56 | 0.59 | 0.56 |
|  |  | HCR 4 (NEFMC) | 0.47 | 0.49 | 0.45 | 0.49 | 0.45 |
|  |  | HCR 5 (Avg F) | 0.5 | 0.86 | 0.84 | 0.86 | 0.84 |
|  | *Est M* | HCR 1a (NPFMC) | 0.43 | 0.44 | 0.42 | 0.44 | 0.42 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.44 | 0.46 | 0.43 | 0.46 | 0.43 |
|  |  | HCR 2a (PFMC) | 0.35 | 0.37 | 0.34 | 0.37 | 0.34 |
|  |  | HCR 2b (Dynamic PFMC) | 0.37 | 0.38 | 0.35 | 0.38 | 0.35 |
|  |  | HCR 3a (SESSF) | 0.5 | 0.52 | 0.48 | 0.52 | 0.48 |
|  |  | HCR 3b (Dynamic SESSF) | 0.52 | 0.54 | 0.5 | 0.54 | 0.5 |
|  |  | HCR 4 (NEFMC) | 0.41 | 0.42 | 0.39 | 0.42 | 0.39 |
|  |  | HCR 5 (Avg F) | 0.61 | 0.85 | 0.83 | 0.85 | 0.83 |
| *MS* | *Fix M* | HCR 1a (NPFMC) | 0.5 | 0.6 | 0.47 | 0.6 | 0.47 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.5 | 0.6 | 0.47 | 0.6 | 0.47 |
|  |  | HCR 2a (PFMC) | 0.44 | 0.53 | 0.4 | 0.53 | 0.4 |
|  |  | HCR 2b (Dynamic PFMC) | 0.44 | 0.53 | 0.4 | 0.53 | 0.4 |
|  |  | HCR 3a (SESSF) | 0.57 | 0.68 | 0.53 | 0.68 | 0.53 |
|  |  | HCR 3b (Dynamic SESSF) | 0.57 | 0.68 | 0.53 | 0.68 | 0.53 |
|  |  | HCR 4 (NEFMC) | 0.49 | 0.59 | 0.46 | 0.59 | 0.46 |
|  |  | HCR 5 (Avg F) | 0.62 | 0.99 | 0.81 | 0.99 | 0.81 |
|  | *Est M* | HCR 1a (NPFMC) | 0.46 | 0.56 | 0.44 | 0.56 | 0.44 |
|  |  | HCR 1b (Dynamic NPFMC) | 0.47 | 0.56 | 0.43 | 0.56 | 0.43 |
|  |  | HCR 2a (PFMC) | 0.39 | 0.47 | 0.36 | 0.47 | 0.36 |
|  |  | HCR 2b (Dynamic PFMC) | 0.39 | 0.47 | 0.36 | 0.47 | 0.36 |
|  |  | HCR 3a (SESSF) | 0.54 | 0.64 | 0.5 | 0.64 | 0.5 |
|  |  | HCR 3b (Dynamic SESSF) | 0.54 | 0.64 | 0.5 | 0.64 | 0.5 |
|  |  | HCR 4 (NEFMC) | 0.45 | 0.54 | 0.42 | 0.54 | 0.42 |
|  |  | HCR 5 (Avg F) | 0.83 | 0.98 | 0.81 | 0.98 | 0.81 |