

C. Red Hake-Tables

Table C1. Nominal commercial landings of red hake (mt) from the northern stock from 1960-2009. US landings from 1994-2009 include landings reported as bait on Vessel Trip Reports.

| Year | Northern Stock | | | Southern Stock | | | Combined Stock | | |
|------|----------------|--------|--------|----------------|---------|---------|----------------|---------|---------|
| | US | DWF | Total | US | DWF | Total | US | DWF | Total |
| 1960 | 3,792 | | 3,792 | 4,286 | | 4,286 | 8,078 | | 8,078 |
| 1961 | 3,276 | | 3,276 | 8,105 | | 8,105 | 11,381 | | 11,381 |
| 1962 | 1,911 | | 1,911 | 11,865 | | 11,865 | 13,776 | | 13,776 |
| 1963 | 1,225 | 2,056 | 3,281 | 29,712 | 2,189 | 31,901 | 30,937 | 4,245 | 35,182 |
| 1964 | 288 | 1,121 | 1,409 | 32,622 | 10,751 | 43,373 | 32,910 | 11,872 | 44,782 |
| 1965 | 200 | 2,573 | 2,773 | 25,246 | 67,744 | 92,990 | 25,446 | 70,317 | 95,763 |
| 1966 | 885 | 4,690 | 5,575 | 3,985 | 103,937 | 107,922 | 4,870 | 108,627 | 113,497 |
| 1967 | 577 | 1,286 | 1,863 | 6,764 | 52,019 | 58,783 | 7,341 | 53,305 | 60,646 |
| 1968 | 552 | 2,075 | 2,627 | 7,001 | 11,137 | 18,138 | 7,553 | 13,212 | 20,765 |
| 1969 | 146 | 1,875 | 2,021 | 5,539 | 47,389 | 52,928 | 5,685 | 49,264 | 54,949 |
| 1970 | 261 | 771 | 1,032 | 4,679 | 6,775 | 11,454 | 4,940 | 7,546 | 12,486 |
| 1971 | 377 | 4,428 | 4,805 | 3,227 | 31,907 | 35,134 | 3,604 | 36,335 | 39,939 |
| 1972 | 538 | 14,488 | 15,026 | 1,995 | 59,199 | 61,194 | 2,533 | 73,687 | 76,220 |
| 1973 | 362 | 14,926 | 15,288 | 3,603 | 47,759 | 51,362 | 3,965 | 62,685 | 66,650 |
| 1974 | 891 | 6,332 | 7,223 | 2,183 | 24,460 | 26,643 | 3,074 | 30,792 | 33,866 |
| 1975 | 450 | 8,251 | 8,701 | 2,065 | 17,911 | 19,976 | 2,515 | 26,162 | 28,677 |
| 1976 | 653 | 5,684 | 6,337 | 3,905 | 18,560 | 22,465 | 4,558 | 24,244 | 28,802 |
| 1977 | 889 | 2 | 891 | 2,522 | 4,540 | 7,062 | 3,411 | 4,542 | 7,953 |
| 1978 | 1,223 | | 1,223 | 3,327 | 2,136 | 5,463 | 4,550 | 2,136 | 6,686 |
| 1979 | 1,523 | | 1,523 | 6,624 | 968 | 7,592 | 8,147 | 968 | 9,115 |
| 1980 | 1,029 | | 1,029 | 3,927 | 155 | 4,082 | 4,956 | 155 | 5,111 |
| 1981 | 1,246 | | 1,246 | 2,124 | 196 | 2,320 | 3,370 | 196 | 3,566 |
| 1982 | 1,210 | | 1,210 | 2,993 | 177 | 3,170 | 4,203 | 177 | 4,380 |
| 1983 | 895 | | 895 | 1,334 | 107 | 1,441 | 2,229 | 107 | 2,336 |
| 1984 | 1,059 | | 1,059 | 1,214 | 57 | 1,271 | 2,273 | 57 | 2,330 |
| 1985 | 992 | | 992 | 827 | 76 | 903 | 1,819 | 76 | 1,895 |
| 1986 | 1,457 | | 1,457 | 644 | 50 | 694 | 2,101 | 50 | 2,151 |
| 1987 | 1,013 | | 1,013 | 943 | | 943 | 1,956 | | 1,956 |
| 1988 | 862 | | 862 | 871 | | 871 | 1,733 | | 1,733 |
| 1989 | 776 | | 776 | 931 | | 931 | 1,707 | | 1,707 |
| 1990 | 826 | | 826 | 798 | | 798 | 1,624 | | 1,624 |
| 1991 | 743 | | 743 | 925 | | 925 | 1,668 | | 1,668 |
| 1992 | 918 | | 918 | 1,245 | | 1,245 | 2,163 | | 2,163 |
| 1993 | 768 | | 768 | 924 | | 924 | 1,693 | | 1,693 |
| 1994 | 727 | | 727 | 983 | | 983 | 1,710 | | 1,710 |
| 1995 | 186 | | 186 | 1,428 | | 1,428 | 1,613 | | 1,613 |
| 1996 | 409 | | 409 | 700 | | 700 | 1,109 | | 1,109 |
| 1997 | 338 | | 338 | 999 | | 999 | 1,337 | | 1,337 |
| 1998 | 187 | | 187 | 1,154 | | 1,154 | 1,342 | | 1,342 |
| 1999 | 220 | | 220 | 1,351 | | 1,351 | 1,571 | | 1,571 |
| 2000 | 197 | | 197 | 1,417 | | 1,417 | 1,614 | | 1,614 |
| 2001 | 222 | | 222 | 1,469 | | 1,469 | 1,691 | | 1,691 |
| 2002 | 275 | | 275 | 663 | | 663 | 938 | | 938 |
| 2003 | 210 | | 210 | 623 | | 623 | 832 | | 832 |
| 2004 | 103 | | 103 | 588 | | 588 | 691 | | 691 |
| 2005 | 96 | | 96 | 356 | | 356 | 452 | | 452 |
| 2006 | 96 | | 96 | 375 | | 375 | 471 | | 471 |
| 2007 | 69 | | 69 | 470 | | 470 | 539 | | 539 |
| 2008 | 52 | | 52 | 580 | | 580 | 632 | | 632 |
| 2009 | 85 | | 85 | 575 | | 575 | 659 | | 659 |

Table C2. US landings of red hake (mt) from the northern region by state. Unknown state landings include landings reported as bait on Vessel Trip Reports as well as industrial fishery landings.

| Year | CT | ME | MD | MA | NH | NJ | NY | RI | Unknown | Total |
|------|----|-----|----|------|----|----|----|-----|---------|-------|
| 1964 | | | | 144 | | | | | 144 | 288 |
| 1965 | | <1 | | 200 | | | | | | 200 |
| 1966 | | | | 371 | | | | | 514 | 885 |
| 1967 | | <1 | | 118 | | | | | 459 | 577 |
| 1968 | | | | 92 | | | | | 460 | 552 |
| 1969 | | | | 134 | | | | | 12 | 146 |
| 1970 | | | | 261 | | | | | <1 | 261 |
| 1971 | | 12 | | 363 | | | | | 2 | 377 |
| 1972 | | | | 538 | | | | | | 538 |
| 1973 | | 39 | | 323 | | | | | | 362 |
| 1974 | | 17 | | 469 | | | | <1 | 405 | 891 |
| 1975 | | 1 | | 448 | | | | 1 | | 450 |
| 1976 | | 3 | | 650 | | | | <1 | | 653 |
| 1977 | | 25 | | 864 | | | | 1 | | 889 |
| 1978 | | 18 | | 1205 | | | | <1 | <1 | 1,223 |
| 1979 | | 12 | | 1509 | | | | 1 | 1 | 1,523 |
| 1980 | | 26 | | 1000 | | | | 1 | 2 | 1,029 |
| 1981 | | 83 | | 1162 | 1 | | | 1 | | 1,246 |
| 1982 | | 70 | | 1073 | 61 | 6 | | 1 | | 1,210 |
| 1983 | | 56 | | 839 | <1 | | | <1 | | 895 |
| 1984 | | 47 | | 1011 | 1 | | | <1 | | 1,059 |
| 1985 | | 77 | | 909 | <1 | | | 5 | | 992 |
| 1986 | | 190 | | 1265 | <1 | | | 2 | | 1,457 |
| 1987 | | 132 | | 877 | 1 | | | 4 | | 1,013 |
| 1988 | | 34 | | 763 | 7 | <1 | | 58 | | 862 |
| 1989 | | 20 | | 675 | 1 | | | 79 | | 776 |
| 1990 | | 5 | <1 | 719 | <1 | | | 100 | | 826 |
| 1991 | | 4 | | 712 | <1 | | | 27 | | 743 |
| 1992 | | 13 | | 818 | 22 | | | 65 | | 918 |
| 1993 | | <1 | | 686 | 21 | | | 62 | | 768 |
| 1994 | | 37 | | 631 | 30 | | | 16 | 13 | 727 |
| 1995 | 7 | <1 | <1 | 122 | 14 | | 2 | 1 | 40 | 186 |
| 1996 | 5 | | | 360 | | | <1 | 13 | 31 | 409 |
| 1997 | 5 | <1 | | 309 | <1 | 1 | 2 | 6 | 15 | 338 |
| 1998 | 6 | <1 | | 136 | | | 21 | 10 | 14 | 187 |
| 1999 | 23 | <1 | | 162 | | <1 | 12 | 7 | 16 | 220 |
| 2000 | 13 | <1 | | 151 | | <1 | | 8 | 25 | 197 |
| 2001 | 22 | <1 | | 154 | <1 | | 10 | 15 | 21 | 222 |
| 2002 | 20 | <1 | | 197 | <1 | | 5 | 22 | 31 | 275 |
| 2003 | 3 | <1 | | 141 | <1 | | 7 | 34 | 25 | 210 |
| 2004 | 21 | | | 50 | <1 | | 1 | 2 | 29 | 103 |
| 2005 | 16 | | | 47 | <1 | | 1 | <1 | 32 | 96 |
| 2006 | 12 | | | 55 | <1 | | 2 | 6 | 21 | 96 |
| 2007 | <1 | <1 | <1 | 31 | | | 1 | 3 | 33 | 69 |
| 2008 | <1 | <1 | | 9 | | <1 | <1 | <1 | 43 | 52 |
| 2009 | 1 | <1 | | 10 | <1 | | <1 | <1 | 74 | 85 |

Table C3. US landings of red hake (mt) from the southern region by state. Unknown state landings include landings reported as bait on Vessel Trip Reports as well as industrial fishery landings.

| Year | CT | DE | ME | MD | MA | NH | NJ | NY | NC | RI | VA | Unknown | Total |
|------|-----|----|----|----|------|----|-----|-----|----|-----|----|---------|--------|
| 1964 | | | | | 1160 | | | | | 67 | | 31395 | 32,622 |
| 1965 | | | | | 880 | | | | | 119 | | 24247 | 25,246 |
| 1966 | | | | | 39 | | | | | 77 | | 3869 | 3,985 |
| 1967 | | | | | | | | | | 40 | | 6724 | 6,764 |
| 1968 | | | | | | | | | | 155 | | 6846 | 7,001 |
| 1969 | | | | | <1 | | | | | 266 | | 5273 | 5,539 |
| 1970 | | | | | | | | | | 330 | | 4349 | 4,679 |
| 1971 | | | | | 2 | | | | | 142 | | 3083 | 3,227 |
| 1972 | | | | | <1 | | | | | 216 | | 1779 | 1,995 |
| 1973 | | | | | <1 | | | | | 182 | | 3421 | 3,603 |
| 1974 | | | | | <1 | | | | | 193 | | 1990 | 2,183 |
| 1975 | | | | | <1 | | | | | 411 | | 1654 | 2,065 |
| 1976 | | | | | 1 | | | | | 594 | | 3310 | 3,905 |
| 1977 | | | | | 5 | | | | | 243 | | 2274 | 2,522 |
| 1978 | | | | | 3 | | 592 | | | 130 | | 2602 | 3,327 |
| 1979 | | | | | 7 | | 958 | | | 247 | | 5412 | 6,624 |
| 1980 | | | | | <1 | | 787 | | | 317 | | 2823 | 3,927 |
| 1981 | | | | | 5 | | 732 | | | 184 | | 1203 | 2,124 |
| 1982 | | | | 12 | 2 | | 427 | | | 378 | 7 | 2166 | 2,993 |
| 1983 | | | | 15 | 1 | | 439 | | | 587 | 16 | 276 | 1,334 |
| 1984 | | | | 24 | 1 | | 403 | | | 617 | 26 | 143 | 1,214 |
| 1985 | | | | 8 | 1 | | 276 | | | 418 | 9 | 115 | 827 |
| 1986 | | | | 3 | 2 | | 225 | 61 | | 350 | 3 | | 644 |
| 1987 | | | | 8 | 1 | | 171 | 210 | | 548 | 5 | | 943 |
| 1988 | | | | 13 | 1 | | 233 | 180 | | 440 | 4 | | 871 |
| 1989 | 11 | | | 21 | 1 | | 319 | 239 | | 337 | 4 | | 931 |
| 1990 | 12 | <1 | | 12 | 2 | | 332 | 96 | | 338 | 6 | | 798 |
| 1991 | 52 | <1 | | 5 | 2 | | 274 | 147 | | 441 | 3 | | 925 |
| 1992 | 134 | 1 | | 5 | 2 | | 195 | 319 | | 588 | 1 | | 1,245 |
| 1993 | 149 | 2 | | 5 | 1 | | 234 | 199 | | 333 | 2 | | 924 |
| 1994 | 92 | 1 | | 4 | 4 | | 225 | 235 | | 415 | 2 | 5 | 983 |
| 1995 | 418 | 1 | <1 | 3 | 1 | <1 | 186 | 272 | | 539 | 1 | 7 | 1,428 |
| 1996 | 100 | | <1 | 2 | 14 | | 61 | 196 | | 324 | 1 | 2 | 700 |
| 1997 | 169 | | | 4 | 4 | | 104 | 275 | <1 | 430 | 1 | 12 | 999 |
| 1998 | 114 | | | 2 | 8 | | 111 | 373 | <1 | 544 | 2 | | 1,154 |
| 1999 | 141 | | | 3 | 22 | | 112 | 428 | <1 | 641 | <1 | 4 | 1,351 |
| 2000 | 159 | | | <1 | 29 | | 153 | 398 | <1 | 676 | <1 | 2 | 1,417 |
| 2001 | 129 | | 1 | 12 | 15 | | 145 | 451 | <1 | 688 | <1 | 28 | 1,469 |
| 2002 | 132 | <1 | | <1 | 15 | <1 | 61 | 186 | <1 | 244 | 1 | 24 | 663 |
| 2003 | 186 | | | <1 | 54 | | 14 | 119 | <1 | 249 | <1 | 1 | 623 |
| 2004 | 169 | <1 | | <1 | 77 | | 18 | 98 | <1 | 210 | 1 | 15 | 588 |
| 2005 | 156 | | | <1 | 18 | | 21 | 47 | | 102 | <1 | 12 | 356 |
| 2006 | 108 | <1 | | 1 | 47 | | 19 | 19 | | 174 | <1 | 6 | 375 |
| 2007 | 121 | <1 | | 1 | 43 | | 53 | 46 | | 170 | <1 | 36 | 470 |
| 2008 | 64 | <1 | | 1 | 30 | | 47 | 73 | | 273 | 2 | 89 | 580 |
| 2009 | 87 | <1 | | 1 | 45 | | 81 | 74 | | 175 | | 113 | 575 |

Table C4. US landings of red hake (mt) from the northern region by gear. Landings reported as bait on Vessel Trip Reports and industrial fishery landings are assumed to be otter trawl.

| Year | LL | OTF | OTS | SGN | OTH | Total |
|------|----|------|-----|-----|-----|-------|
| 1964 | <1 | 288 | | | <1 | 288 |
| 1965 | <1 | 199 | | | <1 | 200 |
| 1966 | <1 | 885 | | | | 885 |
| 1967 | <1 | 577 | | | <1 | 577 |
| 1968 | <1 | 552 | | | <1 | 552 |
| 1969 | 1 | 145 | | | <1 | 146 |
| 1970 | 1 | 260 | | | | 261 |
| 1971 | 1 | 376 | | | | 377 |
| 1972 | 1 | 538 | | | | 538 |
| 1973 | 1 | 339 | | 23 | <1 | 362 |
| 1974 | <1 | 890 | | 1 | | 891 |
| 1975 | 8 | 397 | 36 | 6 | 3 | 450 |
| 1976 | 41 | 589 | 4 | 19 | 1 | 653 |
| 1977 | 24 | 824 | 15 | 26 | <1 | 889 |
| 1978 | 28 | 1190 | | 4 | 1 | 1,223 |
| 1979 | <1 | 1516 | 4 | 2 | <1 | 1,523 |
| 1980 | 1 | 1021 | 1 | 4 | 1 | 1,029 |
| 1981 | 5 | 1140 | 6 | 95 | 1 | 1,246 |
| 1982 | <1 | 1148 | 21 | 39 | 1 | 1,210 |
| 1983 | 1 | 866 | 22 | 4 | 2 | 895 |
| 1984 | <1 | 1038 | 17 | 2 | 1 | 1,059 |
| 1985 | 3 | 920 | 44 | 24 | <1 | 992 |
| 1986 | <1 | 1174 | 269 | 5 | 9 | 1,457 |
| 1987 | 1 | 815 | 171 | 4 | 22 | 1,013 |
| 1988 | 1 | 793 | 46 | 5 | 16 | 862 |
| 1989 | 2 | 690 | 47 | 34 | 2 | 776 |
| 1990 | 2 | 720 | 76 | 22 | 4 | 826 |
| 1991 | 5 | 642 | 64 | 30 | 3 | 743 |
| 1992 | 4 | 861 | 22 | 25 | 6 | 918 |
| 1993 | 3 | 729 | <1 | 5 | 32 | 768 |
| 1994 | 2 | 690 | 1 | 8 | 26 | 727 |
| 1995 | 1 | 171 | | 2 | 12 | 186 |
| 1996 | 2 | 404 | 1 | 1 | 1 | 409 |
| 1997 | 3 | 323 | 1 | 2 | 9 | 338 |
| 1998 | 1 | 184 | | 1 | 1 | 187 |
| 1999 | <1 | 215 | | 4 | 1 | 220 |
| 2000 | <1 | 191 | | 2 | 4 | 197 |
| 2001 | <1 | 208 | | 2 | 12 | 222 |
| 2002 | <1 | 273 | | 2 | <1 | 275 |
| 2003 | <1 | 206 | | 1 | 3 | 210 |
| 2004 | <1 | 100 | | <1 | 3 | 103 |
| 2005 | <1 | 95 | | <1 | 1 | 96 |
| 2006 | | 96 | | <1 | <1 | 96 |
| 2007 | | 69 | | <1 | <1 | 69 |
| 2008 | <1 | 52 | | <1 | <1 | 52 |
| 2009 | | 85 | | <1 | <1 | 85 |

Table C5. US landings of red hake (mt) from the southern region by gear. Landings reported as bait on Vessel Trip Reports and industrial fishery landings are assumed to be otter trawl.

| Year | LL | OTF | SGN | OTH | Total |
|------|----|-------|-----|-----|--------|
| 1964 | | 32622 | | | 32,622 |
| 1965 | | 25246 | | | 25,246 |
| 1966 | | 3985 | | | 3,985 |
| 1967 | | 6764 | | | 6,764 |
| 1968 | | 7001 | | | 7,001 |
| 1969 | | 5539 | | <1 | 5,539 |
| 1970 | | 4679 | | <1 | 4,679 |
| 1971 | | 3227 | | | 3,227 |
| 1972 | | 1983 | <1 | 12 | 1,995 |
| 1973 | | 3603 | | | 3,603 |
| 1974 | <1 | 2183 | | <1 | 2,183 |
| 1975 | | 2065 | | <1 | 2,065 |
| 1976 | | 3903 | <1 | 2 | 3,905 |
| 1977 | | 2520 | | 2 | 2,522 |
| 1978 | | 3269 | | 58 | 3,327 |
| 1979 | | 6526 | <1 | 98 | 6,624 |
| 1980 | <1 | 3885 | <1 | 42 | 3,927 |
| 1981 | | 2076 | <1 | 48 | 2,124 |
| 1982 | | 2928 | <1 | 64 | 2,993 |
| 1983 | | 1265 | 4 | 65 | 1,334 |
| 1984 | | 1102 | 1 | 111 | 1,214 |
| 1985 | | 772 | 2 | 53 | 827 |
| 1986 | <1 | 601 | <1 | 44 | 644 |
| 1987 | <1 | 889 | <1 | 54 | 943 |
| 1988 | <1 | 800 | <1 | 70 | 871 |
| 1989 | | 838 | 1 | 92 | 931 |
| 1990 | <1 | 741 | 1 | 56 | 798 |
| 1991 | <1 | 868 | 3 | 54 | 925 |
| 1992 | 15 | 1185 | 1 | 44 | 1,245 |
| 1993 | <1 | 849 | 2 | 73 | 924 |
| 1994 | <1 | 853 | 3 | 127 | 983 |
| 1995 | <1 | 992 | 1 | 435 | 1,428 |
| 1996 | <1 | 693 | 1 | 6 | 700 |
| 1997 | <1 | 984 | 1 | 14 | 999 |
| 1998 | 1 | 1141 | 1 | 11 | 1,154 |
| 1999 | 1 | 1337 | <1 | 13 | 1,351 |
| 2000 | <1 | 1399 | 3 | 15 | 1,417 |
| 2001 | 1 | 1443 | 10 | 15 | 1,469 |
| 2002 | <1 | 654 | 1 | 8 | 663 |
| 2003 | <1 | 620 | <1 | 2 | 623 |
| 2004 | <1 | 576 | 2 | 10 | 588 |
| 2005 | <1 | 349 | <1 | 6 | 356 |
| 2006 | <1 | 369 | <1 | 6 | 375 |
| 2007 | | 460 | <1 | 10 | 470 |
| 2008 | 2 | 567 | 3 | 8 | 580 |
| 2009 | | 550 | <1 | 25 | 575 |

Table C6. US landings of red hake (mt) from the northern region by month. Landings reported as bait on Vessel Trip Reports and industrial fishery landings are included as unknown month.

| Year | Unk | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 1964 | 144 | 1 | 2 | 1 | 1 | <1 | 6 | 9 | 17 | 34 | 48 | 25 | 2 | 288 |
| 1965 | | 2 | 1 | 3 | 1 | 31 | 2 | 8 | 19 | 18 | 39 | 61 | 15 | 200 |
| 1966 | 514 | 2 | 2 | 3 | 3 | 1 | 4 | 67 | 93 | 56 | 54 | 73 | 13 | 885 |
| 1967 | 459 | 2 | 1 | 3 | <1 | 1 | 23 | 11 | 9 | 3 | 24 | 21 | 21 | 577 |
| 1968 | 460 | 1 | 1 | 1 | <1 | | 4 | 5 | 1 | 5 | 28 | 42 | 4 | 552 |
| 1969 | 12 | 1 | <1 | 1 | <1 | 1 | 1 | 4 | 4 | 22 | 58 | 32 | 12 | 146 |
| 1970 | <1 | 2 | 4 | 11 | 28 | 7 | 10 | 25 | 22 | 53 | 55 | 39 | 5 | 261 |
| 1971 | 2 | 4 | 4 | 8 | 4 | 6 | 18 | 32 | 54 | 75 | 86 | 61 | 23 | 377 |
| 1972 | | 7 | 4 | 3 | 7 | 2 | 23 | 82 | 97 | 85 | 125 | 71 | 31 | 538 |
| 1973 | | 8 | 3 | 4 | 12 | 4 | 10 | 41 | 56 | 41 | 81 | 59 | 45 | 362 |
| 1974 | 405 | 22 | 9 | 8 | 34 | 16 | 23 | 65 | 84 | 85 | 79 | 40 | 22 | 891 |
| 1975 | | 17 | 6 | 8 | 19 | 26 | 43 | 86 | 51 | 77 | 58 | 43 | 16 | 450 |
| 1976 | | 7 | 15 | 6 | 14 | 25 | 73 | 125 | 99 | 105 | 91 | 58 | 36 | 653 |
| 1977 | | 20 | 17 | 42 | 28 | 48 | 74 | 154 | 124 | 105 | 137 | 79 | 63 | 889 |
| 1978 | <1 | 17 | 17 | 19 | 29 | 33 | 99 | 255 | 248 | 211 | 165 | 90 | 40 | 1,223 |
| 1979 | 1 | 27 | 8 | 16 | 30 | 78 | 191 | 403 | 271 | 205 | 169 | 87 | 37 | 1,523 |
| 1980 | 2 | 10 | 7 | 7 | 15 | 41 | 133 | 218 | 176 | 184 | 130 | 73 | 32 | 1,029 |
| 1981 | | 44 | 24 | 25 | 25 | 59 | 143 | 182 | 233 | 195 | 212 | 80 | 25 | 1,246 |
| 1982 | | 29 | 20 | 14 | 26 | 44 | 110 | 175 | 179 | 193 | 263 | 100 | 59 | 1,210 |
| 1983 | | 24 | 10 | 10 | 15 | 35 | 153 | 169 | 145 | 134 | 122 | 57 | 21 | 895 |
| 1984 | | 20 | 8 | 4 | 5 | 18 | 106 | 199 | 219 | 185 | 176 | 79 | 40 | 1,059 |
| 1985 | | 14 | 4 | 12 | 11 | 41 | 74 | 169 | 173 | 205 | 166 | 70 | 52 | 992 |
| 1986 | | 18 | 72 | 65 | 47 | 75 | 134 | 146 | 172 | 156 | 179 | 217 | 176 | 1,457 |
| 1987 | | 22 | 12 | 29 | 47 | 92 | 120 | 126 | 137 | 133 | 94 | 109 | 92 | 1,013 |
| 1988 | | 16 | 7 | 27 | 14 | 33 | 61 | 148 | 160 | 115 | 145 | 97 | 38 | 862 |
| 1989 | | 7 | 2 | 8 | 14 | 29 | 147 | 108 | 141 | 110 | 127 | 58 | 23 | 776 |
| 1990 | | 18 | 9 | 6 | 18 | 23 | 60 | 170 | 198 | 97 | 133 | 49 | 42 | 826 |
| 1991 | | 28 | 10 | 8 | 14 | 18 | 39 | 156 | 122 | 72 | 154 | 90 | 30 | 743 |
| 1992 | | 16 | 8 | 4 | 2 | 56 | 66 | 148 | 144 | 122 | 175 | 146 | 31 | 918 |
| 1993 | | 20 | <1 | <1 | 1 | 63 | 59 | 120 | 150 | 114 | 145 | 70 | 25 | 768 |
| 1994 | 13 | 5 | <1 | <1 | 16 | 13 | 39 | 143 | 155 | 132 | 127 | 62 | 23 | 727 |
| 1995 | 40 | <1 | 1 | <1 | 1 | 1 | 1 | 30 | 58 | 33 | 19 | 2 | 1 | 186 |
| 1996 | 31 | <1 | <1 | <1 | <1 | 14 | 89 | 36 | 79 | 64 | 81 | 11 | 2 | 409 |
| 1997 | 15 | 1 | <1 | 1.3 | 2 | 12 | 5 | 27 | 48 | 53 | 142 | 28 | 3 | 338 |
| 1998 | 14 | <1 | <1 | <1 | 6 | <1 | 2 | 21 | 41 | 34 | 55 | 10 | 2 | 187 |
| 1999 | 16 | <1 | <1 | <1 | <1 | 1 | 4 | 35 | 44 | 64 | 47 | 7 | 4 | 220 |
| 2000 | 25 | 5 | 3 | 6.8 | 1 | <1 | 7 | 24 | 35 | 26 | 54 | 8 | 2 | 197 |
| 2001 | 21 | 4 | 2 | 2.1 | 4 | 2 | 5 | 35 | 25 | 34 | 50 | 33 | 5 | 222 |
| 2002 | 31 | 2 | 4 | <1 | <1 | 1 | 3 | 36 | 43 | 67 | 64 | 17 | 5 | 275 |
| 2003 | 25 | 2 | <1 | <1 | <1 | 1 | 2 | 40 | 52 | 42 | 26 | 15 | 5 | 210 |
| 2004 | 29 | 1 | 1 | 0.9 | <1 | 1 | <1 | 4 | 12 | 35 | 15 | 3 | <1 | 103 |
| 2005 | 32 | <1 | <1 | <1 | | <1 | | 13 | 45 | 4 | 1 | 1 | <1 | 96 |
| 2006 | 21 | | 1 | <1 | <1 | | <1 | 12 | 41 | 19 | 1 | <1 | <1 | 96 |
| 2007 | 33 | <1 | | 1 | <1 | <1 | <1 | 6 | 15 | 4 | 7 | 1 | <1 | 69 |
| 2008 | 43 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | 3 | 1 | 1 | 2 | 1 | 52 |
| 2009 | 74 | | <1 | <1 | | <1 | <1 | 5 | 3 | 2 | <1 | 1 | <1 | 85 |

Table C7. US landings of red hake (mt) from the southern region by month. Landings reported as bait on Vessel Trip Reports and industrial fishery landings are included as unknown month.

| Year | Unk | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
| 1964 | 31395 | <1 | 2 | <1 | 114 | 899 | 173 | 6 | 3 | 1 | 4 | 8 | 16 | 32,622 |
| 1965 | 24247 | 2 | 2 | 11 | 50 | 724 | 102 | 43 | 24 | 2 | 14 | 23 | 3 | 25,246 |
| 1966 | 3869 | 1 | 8 | 9 | 8 | 2 | 45 | 8 | 6 | 5 | 2 | 5 | 16 | 3,985 |
| 1967 | 6724 | 1 | <1 | 2 | 3 | <1 | 2 | 2 | 6 | <1 | 8 | 8 | 7 | 6,764 |
| 1968 | 6846 | 2 | 1 | 3 | <1 | 5 | 14 | 15 | 34 | 14 | 14 | 31 | 22 | 7,001 |
| 1969 | 5273 | <1 | 2 | 7 | 19 | 23 | 44 | 48 | 26 | 10 | 11 | 39 | 38 | 5,539 |
| 1970 | 4349 | 11 | 4 | 8 | 14 | 22 | 77 | 61 | 35 | 20 | 9 | 26 | 42 | 4,679 |
| 1971 | 3083 | 2 | 1 | 8 | 8 | 9 | 23 | 21 | 18 | 2 | 4 | 4 | 43 | 3,227 |
| 1972 | 1779 | 24 | 5 | 2 | 2 | 12 | 22 | 26 | 25 | 22 | <1 | 24 | 54 | 1,995 |
| 1973 | 3421 | 47 | 7 | 6 | 6 | 13 | 23 | 9 | 17 | 2 | 2 | 16 | 33 | 3,603 |
| 1974 | 1990 | 24 | 12 | 24 | 44 | 30 | 12 | 3 | 1 | <1 | <1 | 11 | 33 | 2,183 |
| 1975 | 1654 | 41 | 12 | 4 | 14 | 50 | 17 | 21 | 2 | 4 | 13 | 43 | 189 | 2,065 |
| 1976 | 3310 | 110 | 15 | 25 | 85 | 34 | 12 | 8 | 10 | 14 | 19 | 152 | 111 | 3,905 |
| 1977 | 2274 | 21 | 1 | 7 | 4 | 24 | 18 | 12 | 21 | 17 | 8 | 42 | 73 | 2,522 |
| 1978 | 2602 | 92 | 14 | 50 | 142 | 180 | 54 | 29 | 24 | 13 | 14 | 54 | 60 | 3,327 |
| 1979 | 5412 | 167 | 162 | 60 | 272 | 164 | 86 | 33 | 21 | 23 | 47 | 80 | 96 | 6,624 |
| 1980 | 2823 | 150 | 70 | 52 | 174 | 147 | 104 | 36 | 20 | 25 | 52 | 116 | 158 | 3,927 |
| 1981 | 1203 | 45 | 7 | 18 | 196 | 165 | 48 | 26 | 24 | 15 | 35 | 105 | 237 | 2,124 |
| 1982 | 2166 | 74 | 32 | 61 | 137 | 124 | 41 | 24 | 34 | 38 | 30 | 78 | 154 | 2,993 |
| 1983 | 276 | 231 | 42 | 61 | 99 | 227 | 86 | 35 | 54 | 38 | 19 | 28 | 139 | 1,334 |
| 1984 | 143 | 134 | 47 | 128 | 117 | 182 | 129 | 42 | 61 | 47 | 46 | 46 | 92 | 1,214 |
| 1985 | 115 | 90 | 17 | 38 | 113 | 170 | 83 | 35 | 29 | 27 | 32 | 9 | 69 | 827 |
| 1986 | | 56 | 37 | 55 | 120 | 131 | 77 | 37 | 19 | 14 | 18 | 16 | 66 | 644 |
| 1987 | | 71 | 86 | 107 | 80 | 170 | 122 | 70 | 54 | 38 | 8 | 35 | 101 | 943 |
| 1988 | | 100 | 51 | 86 | 172 | 145 | 73 | 24 | 9 | 10 | 14 | 47 | 141 | 871 |
| 1989 | | 62 | 48 | 26 | 109 | 141 | 99 | 58 | 20 | 30 | 34 | 42 | 108 | 931 |
| 1990 | | 40 | 21 | 45 | 221 | 177 | 43 | 45 | 32 | 38 | 47 | 20 | 41 | 798 |
| 1991 | | 64 | 44 | 43 | 168 | 143 | 56 | 19 | 53 | 71 | 28 | 86 | 94 | 925 |
| 1992 | | 142 | 125 | 99 | 170 | 241 | 52 | 29 | 61 | 72 | 47 | 24 | 47 | 1,245 |
| 1993 | | 74 | 80 | 67 | 75 | 76 | 108 | 37 | 40 | 49 | 40 | 49 | 77 | 924 |
| 1994 | 5 | 64 | 86 | 98 | 152 | 126 | 82 | 29 | 34 | 44 | 77 | 46 | 49 | 983 |
| 1995 | 7 | 87 | 112 | 97 | 137 | 108 | 117 | 113 | 97 | 152 | 106 | 165 | 128 | 1,428 |
| 1996 | 2 | 66 | 50 | 55 | 84 | 83 | 50 | 71 | 28 | 30 | 44 | 69 | 66 | 700 |
| 1997 | 12 | 121 | 87 | 125 | 112 | 94 | 127 | 77 | 40 | 66 | 43 | 27 | 70 | 999 |
| 1998 | | 102 | 109 | 84 | 86 | 79 | 153 | 122 | 42 | 141 | 84 | 73 | 80 | 1,154 |
| 1999 | 4 | 119 | 146 | 131 | 88 | 206 | 123 | 74 | 91 | 75 | 106 | 76 | 111 | 1,351 |
| 2000 | 2 | 79 | 158 | 120 | 120 | 150 | 187 | 69 | 123 | 165 | 113 | 61 | 68 | 1,417 |
| 2001 | 28 | 123 | 139 | 218 | 163 | 234 | 175 | 124 | 87 | 42 | 51 | 38 | 46 | 1,469 |
| 2002 | 24 | 54 | 56 | 60 | 52 | 54 | 99 | 62 | 36 | 55 | 31 | 38 | 42 | 663 |
| 2003 | 1 | 56 | 51 | 60 | 53 | 61 | 52 | 40 | 16 | 52 | 60 | 61 | 60 | 623 |
| 2004 | 15 | 36 | 49 | 54 | 59 | 74 | 38 | 52 | 72 | 42 | 39 | 39 | 19 | 588 |
| 2005 | 12 | 41 | 27 | 32 | 47 | 27 | 39 | 33 | 20 | 29 | 15 | 17 | 18 | 356 |
| 2006 | 6 | 18 | 24 | 37 | 37 | 40 | 38 | 54 | 40 | 15 | 24 | 15 | 27 | 375 |
| 2007 | 36 | 23 | 25 | 30 | 27 | 49 | 32 | 61 | 50 | 54 | 26 | 23 | 32 | 470 |
| 2008 | 89 | 29 | 34 | 29 | 26 | 46 | 59 | 43 | 50 | 47 | 65 | 22 | 38 | 580 |
| 2009 | 113 | 44 | 22 | 39 | 42 | 44 | 88 | 31 | 27 | 46 | 36 | 19 | 25 | 575 |

Table C8. Nominal landings of red hake (mt) by region and half year. Landings reported as bait on Vessel Trip Reports and industrial fishery landings are included as unknown half.

| Year | Northern Stock | | | | Southern Stock | | | |
|------|----------------|------|---------|-------|----------------|-----|---------|--------|
| | 1 | 2 | Unknown | Total | 1 | 2 | Unknown | Total |
| 1964 | 11 | 134 | 144 | 288 | 1188 | 39 | 31395 | 32,622 |
| 1965 | 39 | 161 | | 200 | 890 | 109 | 24247 | 25,246 |
| 1966 | 15 | 356 | 514 | 885 | 74 | 42 | 3869 | 3,985 |
| 1967 | 28 | 90 | 459 | 577 | 9 | 31 | 6724 | 6,764 |
| 1968 | 7 | 86 | 460 | 552 | 25 | 130 | 6846 | 7,001 |
| 1969 | 3 | 131 | 12 | 146 | 96 | 171 | 5273 | 5,539 |
| 1970 | 61 | 200 | <1 | 261 | 137 | 194 | 4349 | 4,679 |
| 1971 | 44 | 331 | 2 | 377 | 52 | 92 | 3083 | 3,227 |
| 1972 | 47 | 491 | | 538 | 66 | 150 | 1779 | 1,995 |
| 1973 | 40 | 323 | | 362 | 102 | 80 | 3421 | 3,603 |
| 1974 | 112 | 374 | 405 | 891 | 145 | 48 | 1990 | 2,183 |
| 1975 | 118 | 331 | | 450 | 139 | 272 | 1654 | 2,065 |
| 1976 | 140 | 514 | | 653 | 281 | 314 | 3310 | 3,905 |
| 1977 | 227 | 662 | | 889 | 75 | 173 | 2274 | 2,522 |
| 1978 | 214 | 1009 | <1 | 1,223 | 531 | 193 | 2602 | 3,327 |
| 1979 | 349 | 1173 | 1 | 1,523 | 912 | 300 | 5412 | 6,624 |
| 1980 | 213 | 813 | 2 | 1,029 | 697 | 408 | 2823 | 3,927 |
| 1981 | 320 | 926 | | 1,246 | 478 | 443 | 1203 | 2,124 |
| 1982 | 243 | 967 | | 1,210 | 469 | 358 | 2166 | 2,993 |
| 1983 | 247 | 648 | | 895 | 746 | 312 | 276 | 1,334 |
| 1984 | 161 | 897 | | 1,059 | 736 | 334 | 143 | 1,214 |
| 1985 | 157 | 835 | | 992 | 511 | 201 | 115 | 827 |
| 1986 | 412 | 1045 | | 1,457 | 475 | 169 | | 644 |
| 1987 | 323 | 690 | | 1,013 | 637 | 306 | | 943 |
| 1988 | 158 | 704 | | 862 | 626 | 245 | | 871 |
| 1989 | 208 | 567 | | 776 | 484 | 292 | | 931 |
| 1990 | 134 | 689 | | 826 | 547 | 224 | | 798 |
| 1991 | 118 | 624 | | 743 | 518 | 350 | | 925 |
| 1992 | 152 | 766 | | 918 | 830 | 280 | | 1,245 |
| 1993 | 143 | 625 | | 768 | 480 | 293 | | 924 |
| 1994 | 73 | 641 | 13 | 727 | 607 | 279 | 5 | 983 |
| 1995 | 4 | 143 | 40 | 186 | 658 | 762 | 7 | 1,428 |
| 1996 | 104 | 274 | 31 | 409 | 390 | 309 | 2 | 700 |
| 1997 | 21 | 301 | 15 | 338 | 666 | 321 | 12 | 999 |
| 1998 | 8 | 164 | 14 | 187 | 612 | 542 | | 1,154 |
| 1999 | 5 | 200 | 16 | 220 | 814 | 532 | 4 | 1,351 |
| 2000 | 22 | 150 | 25 | 197 | 816 | 600 | 2 | 1,417 |
| 2001 | 20 | 183 | 21 | 222 | 1052 | 388 | 28 | 1,469 |
| 2002 | 11 | 232 | 31 | 275 | 375 | 264 | 24 | 663 |
| 2003 | 5 | 180 | 25 | 210 | 333 | 290 | 1 | 623 |
| 2004 | 3 | 70 | 29 | 103 | 310 | 263 | 15 | 588 |
| 2005 | <1 | 64 | 32 | 96 | 213 | 132 | 12 | 356 |
| 2006 | 1 | 73 | 21 | 96 | 194 | 175 | 6 | 375 |
| 2007 | 2 | 33 | 33 | 69 | 186 | 247 | 36 | 470 |
| 2008 | <1 | 9 | 43 | 52 | 223 | 266 | 89 | 580 |
| 2009 | <1 | 10 | 74 | 85 | 278 | 184 | 113 | 575 |

Table C9. Nominal landings of white hake (mt) by market and half year for the northern region.

| Year | Unclassified | | Total | Small | | Total | Large | | Total |
|------|--------------|------|-------|-------|------|-------|-------|------|-------|
| | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| 1985 | 794 | 2009 | 2803 | 418 | 705 | 1123 | 633 | 1751 | 2385 |
| 1986 | 873 | 1690 | 2563 | 359 | 312 | 672 | 651 | 1245 | 1896 |
| 1987 | 517 | 985 | 1502 | 448 | 1449 | 1897 | 473 | 1312 | 1785 |
| 1988 | 155 | 557 | 712 | 812 | 1657 | 2469 | 449 | 1013 | 1462 |
| 1989 | 206 | 870 | 1076 | 453 | 944 | 1397 | 645 | 1364 | 2010 |
| 1990 | 187 | 744 | 931 | 733 | 1796 | 2529 | 446 | 911 | 1358 |
| 1991 | 366 | 824 | 1190 | 692 | 2324 | 3016 | 337 | 861 | 1199 |
| 1992 | 246 | 1367 | 1612 | 1193 | 3690 | 4883 | 499 | 1063 | 1562 |
| 1993 | 493 | 1372 | 1865 | 1229 | 2205 | 3434 | 564 | 1193 | 1757 |
| 1994 | 370 | 663 | 1033 | 566 | 971 | 1537 | 554 | 951 | 1505 |
| 1995 | 285 | 732 | 1017 | 383 | 1157 | 1540 | 504 | 952 | 1456 |
| 1996 | 214 | 484 | 698 | 333 | 921 | 1253 | 505 | 694 | 1199 |
| 1997 | 39 | 46 | 85 | 269 | 764 | 1033 | 289 | 772 | 1061 |
| 1998 | 38 | 37 | 76 | 183 | 590 | 773 | 442 | 945 | 1387 |
| 1999 | 11 | 34 | 46 | 296 | 568 | 864 | 734 | 881 | 1614 |
| 2000 | 10 | 21 | 31 | 421 | 642 | 1062 | 775 | 1036 | 1811 |
| 2001 | 9 | 64 | 73 | 453 | 857 | 1310 | 895 | 1119 | 2014 |
| 2002 | 10 | 20 | 30 | 662 | 470 | 1132 | 810 | 1205 | 2015 |
| 2003 | 4 | 33 | 37 | 288 | 362 | 650 | 1887 | 1801 | 3688 |
| 2004 | 57 | 174 | 231 | 211 | 374 | 584 | 1469 | 1134 | 2603 |
| 2005 | 388 | 231 | 619 | 201 | 339 | 540 | 792 | 662 | 1454 |
| 2006 | 231 | 108 | 339 | 140 | 178 | 319 | 483 | 519 | 1003 |
| 2007 | 134 | 90 | 224 | 97 | 217 | 314 | 416 | 532 | 949 |
| 2008 | 41 | 24 | 65 | 119 | 295 | 414 | 294 | 501 | 794 |
| 2009 | 41 | 24 | 65 | 201 | 368 | 569 | 463 | 552 | 1015 |

Table C10. Nominal landings of white hake (mt) by market and half year for the southern region.

| Year | Unclassified | | Total | Small | | | Large | | |
|------|--------------|----|-------|-------|----|-------|-------|-----|-------|
| | 1 | 2 | | 1 | 2 | Total | 1 | 2 | Total |
| 1985 | 40 | 6 | 46 | 15 | 5 | 20 | 36 | 7 | 43 |
| 1986 | 34 | 10 | 43 | 9 | 2 | 11 | 44 | 8 | 52 |
| 1987 | 43 | 14 | 58 | 12 | 14 | 26 | 24 | 4 | 28 |
| 1988 | 51 | 15 | 65 | 26 | 13 | 39 | 17 | 7 | 24 |
| 1989 | 19 | 2 | 21 | 11 | 10 | 21 | 13 | 9 | 22 |
| 1990 | 22 | 15 | 36 | 35 | 13 | 49 | 19 | 5 | 24 |
| 1991 | 46 | 32 | 78 | 72 | 12 | 84 | 30 | 10 | 40 |
| 1992 | 95 | 23 | 118 | 162 | 16 | 179 | 83 | 7 | 90 |
| 1993 | 65 | 36 | 102 | 162 | 42 | 204 | 86 | 18 | 104 |
| 1994 | 174 | 45 | 219 | 106 | 57 | 163 | 133 | 142 | 275 |
| 1995 | 74 | 40 | 113 | 76 | 16 | 92 | 92 | 14 | 106 |
| 1996 | 48 | 23 | 71 | 25 | 2 | 28 | 31 | 2 | 33 |
| 1997 | 22 | 5 | 28 | 8 | 4 | 12 | 2 | 1 | 4 |
| 1998 | 13 | 11 | 25 | 35 | 10 | 45 | 29 | 33 | 61 |
| 1999 | 13 | 7 | 20 | 25 | 8 | 33 | 38 | 6 | 44 |
| 2000 | 18 | 10 | 28 | 23 | 7 | 31 | 15 | 6 | 21 |
| 2001 | 23 | 5 | 28 | 15 | 15 | 30 | 15 | 11 | 27 |
| 2002 | 7 | 2 | 9 | 36 | 8 | 44 | 24 | 11 | 35 |
| 2003 | 4 | 1 | 5 | 12 | 4 | 16 | 30 | 8 | 37 |
| 2004 | 1 | 15 | 16 | 19 | 6 | 25 | 41 | 11 | 52 |
| 2005 | 26 | 8 | 35 | 5 | 5 | 10 | 10 | 3 | 12 |
| 2006 | 9 | 5 | 14 | 9 | 6 | 14 | 5 | 7 | 12 |
| 2007 | 1 | 1 | 2 | 19 | 3 | 22 | 13 | 4 | 18 |
| 2008 | 11 | 2 | 14 | 9 | 14 | 23 | 5 | 9 | 14 |
| 2009 | 6 | 3 | 8 | 12 | 9 | 20 | 14 | 5 | 18 |

Table C11. Summary of number of red hake measured by port samplers by region and half.

| Year | North | | Total | South | | Total |
|------|-------|------|-------|-------|------|-------|
| | 1 | 2 | | 1 | 2 | |
| 1975 | | | | | 206 | 206 |
| 1976 | | | | | 103 | 103 |
| 1977 | | | | 159 | | 159 |
| 1979 | | | | | 94 | 94 |
| 1980 | | | | 318 | | 318 |
| 1981 | | 101 | 101 | | | |
| 1982 | | 431 | 431 | | | |
| 1983 | 125 | 1232 | 1357 | 182 | | 182 |
| 1984 | 209 | 546 | 755 | 982 | 200 | 1182 |
| 1985 | 43 | 914 | 957 | 1139 | 599 | 1738 |
| 1986 | 335 | 1227 | 1562 | 948 | 320 | 1268 |
| 1987 | | 967 | 967 | 786 | 213 | 999 |
| 1988 | 666 | 1172 | 1838 | 612 | 100 | 712 |
| 1989 | 111 | 410 | 521 | 201 | 309 | 510 |
| 1990 | 242 | 607 | 849 | 518 | 275 | 793 |
| 1991 | 826 | 214 | 1040 | 701 | 299 | 1000 |
| 1992 | | 111 | 111 | 400 | 404 | 804 |
| 1993 | | 95 | 95 | 303 | 100 | 403 |
| 1994 | | | | 419 | 356 | 775 |
| 1995 | | | | 1067 | 62 | 1129 |
| 1996 | | | | | 193 | 193 |
| 1997 | | | | 1730 | 246 | 1976 |
| 1998 | | 138 | 138 | 904 | 309 | 1213 |
| 1999 | | 47 | 47 | 748 | 795 | 1543 |
| 2000 | | | | 250 | 388 | 638 |
| 2001 | | 99 | 99 | 1010 | 720 | 1730 |
| 2002 | | | | 432 | 406 | 838 |
| 2003 | | 345 | 345 | 1068 | 509 | 1577 |
| 2004 | | 370 | 370 | 755 | 1195 | 1950 |
| 2005 | | | | 1030 | 1208 | 2238 |
| 2006 | | 93 | 93 | 1255 | 1146 | 2401 |
| 2007 | | 37 | 37 | 2819 | 1758 | 4577 |
| 2008 | | | 957 | 2560 | 2183 | 4743 |
| 2009 | | | 1562 | 1139 | 599 | 1738 |

Table C12. Summary of number of white hake measured by port samplers by market category and half in the northern region.

| Year | Uncl | | Total | Small | | Total | Large | | Total |
|------|------|-----|-------|-------|------|-------|-------|------|-------|
| | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| 1985 | 101 | 397 | 498 | 356 | 640 | 996 | 509 | 790 | 1299 |
| 1986 | 215 | 398 | 613 | 686 | 668 | 1354 | 332 | 221 | 553 |
| 1987 | 245 | 237 | 482 | 443 | 998 | 1441 | 111 | 754 | 865 |
| 1988 | 100 | 41 | 141 | 1414 | 823 | 2237 | 233 | 299 | 532 |
| 1989 | 100 | 106 | 206 | 185 | 511 | 696 | | 410 | 410 |
| 1990 | | 101 | 101 | 613 | 749 | 1362 | 214 | 306 | 520 |
| 1991 | 207 | 94 | 301 | 674 | 1118 | 1792 | 474 | 728 | 1202 |
| 1992 | 97 | 237 | 334 | 1177 | 1423 | 2600 | 94 | 622 | 716 |
| 1993 | 214 | 293 | 507 | 1097 | 616 | 1713 | 361 | 851 | 1212 |
| 1994 | 236 | 697 | 933 | 397 | 1063 | 1460 | 303 | 667 | 970 |
| 1995 | 100 | | 100 | 191 | 535 | 726 | 221 | 103 | 324 |
| 1996 | 199 | 546 | 745 | 101 | 976 | 1077 | 202 | 1210 | 1412 |
| 1997 | | 58 | 58 | 1634 | 2455 | 4089 | 1166 | 1574 | 2740 |
| 1998 | | 118 | 118 | 500 | 886 | 1386 | 897 | 1226 | 2123 |
| 1999 | | | | 213 | 640 | 853 | 831 | 425 | 1256 |
| 2000 | | | | 1172 | 1146 | 2318 | 229 | 336 | 565 |
| 2001 | | | | 881 | 887 | 1768 | 784 | 1457 | 2241 |
| 2002 | | | | 1171 | 1746 | 2917 | 1055 | 761 | 1816 |
| 2003 | | | | 1637 | 1500 | 3137 | 1945 | 3285 | 5230 |
| 2004 | | | | 988 | 978 | 1966 | 3536 | 1646 | 5182 |
| 2005 | 28 | 61 | 89 | 1203 | 1760 | 2963 | 1849 | 1711 | 3560 |
| 2006 | | | | 1467 | 1936 | 3403 | 1922 | 1748 | 3670 |
| 2007 | | | | 1524 | 1759 | 3283 | 1469 | 1489 | 2958 |
| 2008 | | | | 1226 | 1857 | 3083 | 1698 | 1467 | 3165 |
| 2009 | | | | 981 | 1691 | 2672 | 1248 | 1920 | 3168 |

Table C13. Summary of number of white hake measured by port samplers by market category and half in the southern region.

| Year | Uncl | | Total | Small | | Total | Large | | Total |
|------|------|---|-------|-------|-----|-------|-------|-----|-------|
| | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| 1985 | | | | | | | | | |
| 1986 | | | | | | | | | |
| 1987 | 113 | | 113 | | | | | | |
| 1988 | | | | 100 | | 100 | | | |
| 1989 | | | | | | | | | |
| 1990 | | | | 104 | | 104 | | | |
| 1991 | | | | 151 | | 151 | | | |
| 1992 | | | | 52 | 55 | 107 | 100 | | 100 |
| 1993 | | | | 50 | | 50 | 100 | | 100 |
| 1994 | | | | | | | | | |
| 1995 | | | | | | | | | |
| 1996 | | | | | | | | | |
| 1997 | | | | | | | | | |
| 1998 | | | | 100 | | 100 | | | |
| 1999 | | | | | 107 | 107 | | 104 | 104 |
| 2000 | | | | | | | | | |
| 2001 | | | | | | | | | |
| 2002 | | | | | | | 85 | | 85 |
| 2003 | | | | 92 | 96 | 188 | | | |
| 2004 | | | | 96 | | 96 | | | |
| 2005 | 111 | | 111 | 61 | | 61 | 106 | | 106 |
| 2006 | | | | | | | | | |
| 2007 | 201 | | 201 | | | | | | |
| 2008 | | | | 142 | | 142 | 5 | | 5 |
| 2009 | | | | | 101 | 101 | 28 | | 28 |

Table C14. Sampling intensity (mt/100 lengths) of red hake by region and half.

| Year | North | | South | |
|------|-------|-----|-------|------|
| | 1 | 2 | 1 | 2 |
| 1975 | | | | 132 |
| 1976 | | | | 304 |
| 1977 | | | 47 | |
| 1978 | | | | |
| 1979 | | | | 320 |
| 1980 | | | 219 | |
| 1981 | | 917 | | |
| 1982 | | 224 | | |
| 1983 | 198 | 53 | 410 | |
| 1984 | 77 | 164 | 75 | 167 |
| 1985 | 364 | 91 | 45 | 34 |
| 1986 | 123 | 85 | 50 | 53 |
| 1987 | | 71 | 81 | 144 |
| 1988 | 24 | 60 | 102 | 245 |
| 1989 | 187 | 138 | 241 | 95 |
| 1990 | 55 | 114 | 106 | 82 |
| 1991 | 14 | 292 | 74 | 117 |
| 1992 | | 690 | 207 | 69 |
| 1993 | | 658 | 158 | 293 |
| 1994 | | | 145 | 78 |
| 1995 | | | 62 | 1228 |
| 1996 | | | | 160 |
| 1997 | | | 38 | 131 |
| 1998 | | 119 | 68 | 175 |
| 1999 | | 425 | 109 | 67 |
| 2000 | | | 326 | 155 |
| 2001 | | 184 | 104 | 54 |
| 2002 | | | 87 | 65 |
| 2003 | | 52 | 31 | 57 |
| 2004 | | 19 | 41 | 22 |
| 2005 | | | 21 | 11 |
| 2006 | | 79 | 15 | 15 |
| 2007 | | 91 | 7 | 14 |
| 2008 | | | 9 | 12 |
| 2009 | | | 24 | 31 |

Table C15. Sampling Intensity (mt/100 lengths) of white hake by market category and half in the northern region.

| Year | Uncl | | Small | | Large | |
|------|------|------|-------|-----|-------|-----|
| | 1 | 2 | 1 | 2 | 1 | 2 |
| 1985 | 786 | 506 | 118 | 110 | 124 | 222 |
| 1986 | 406 | 425 | 52 | 47 | 196 | 563 |
| 1987 | 211 | 416 | 101 | 145 | 426 | 174 |
| 1988 | 155 | 1358 | 57 | 201 | 193 | 339 |
| 1989 | 206 | 820 | 245 | 185 | | 333 |
| 1990 | | 737 | 120 | 240 | 209 | 298 |
| 1991 | 177 | 877 | 103 | 208 | 71 | 118 |
| 1992 | 253 | 577 | 101 | 259 | 531 | 171 |
| 1993 | 230 | 468 | 112 | 358 | 156 | 140 |
| 1994 | 157 | 95 | 143 | 91 | 183 | 143 |
| 1995 | 285 | | 201 | 216 | 228 | 925 |
| 1996 | 108 | 89 | 329 | 94 | 250 | 57 |
| 1997 | | 80 | 16 | 31 | 25 | 49 |
| 1998 | | 32 | 37 | 67 | 49 | 77 |
| 1999 | | | 139 | 89 | 88 | 207 |
| 2000 | | | 36 | 56 | 338 | 308 |
| 2001 | | | 51 | 97 | 114 | 77 |
| 2002 | | | 57 | 27 | 77 | 158 |
| 2003 | | | 18 | 24 | 97 | 55 |
| 2004 | | | 21 | 38 | 42 | 69 |
| 2005 | 1387 | 378 | 17 | 19 | 43 | 39 |
| 2006 | | | 10 | 9 | 25 | 30 |
| 2007 | | | 6 | 12 | 28 | 36 |
| 2008 | | | 10 | 16 | 17 | 34 |
| 2009 | | | 20 | 22 | 37 | 29 |

Table C16. Pooling of red hake port length samples to estimate length and species composition of the commercial landings by region and half.

| | North | | | South | |
|------|--------|--------|--|--------|--------|
| | Half 1 | Half 2 | | Half 1 | Half 2 |
| 1985 | | | | | |
| 1986 | | | | | |
| 1987 | | | | | |
| 1988 | | | | | |
| 1989 | | | | | |
| 1990 | | | | | |
| 1991 | | | | | |
| 1992 | | | | | |
| 1993 | | | | | |
| 1994 | | | | | |
| 1995 | | | | | |
| 1996 | | | | | |
| 1997 | | | | | |
| 1998 | | | | | |
| 1999 | | | | | |
| 2000 | | | | | |
| 2001 | | | | | |
| 2002 | | | | | |
| 2003 | | | | | |
| 2004 | | | | | |
| 2005 | | | | | |
| 2006 | | | | | |
| 2007 | | | | | |
| 2008 | | | | | |
| 2009 | | | | | |

Table C17. Pooling of white hake port length samples to estimate length and species composition of the commercial landings by region, market category and half.

| | North | | | | | | South | | | | | |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Uncl | | Small | | Large | | Uncl | | Small | | Large | |
| | Half 1 | Half 2 | Half 1 | Half 2 | Half 1 | Half 2 | Half 1 | Half 2 | Half 1 | Half 2 | Half 1 | Half 2 |
| 1985 | | | | | | | | | | | | |
| 1986 | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | |
| 1990 | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | |
| 1994 | | | | | | | | | | | | |
| 1995 | | | | | | | | | | | | |
| 1996 | | | | | | | | | | | | |
| 1997 | | | | | | | | | | | | |
| 1998 | | | | | | | | | | | | |
| 1999 | | | | | | | | | | | | |
| 2000 | | | | | | | | | | | | |
| 2001 | | | | | | | | | | | | |
| 2002 | | | | | | | | | | | | |
| 2003 | | | | | | | | | | | | |
| 2004 | | | | | | | | | | | | |
| 2005 | | | | | | | | | | | | |
| 2006 | | | | | | | | | | | | |
| 2007 | | | | | | | | | | | | |
| 2008 | | | | | | | | | | | | |
| 2009 | | | | | | | | | | | | |

Table C18. Comparison of nominal landings (mt) with the length-based model-estimated landings (mt) by stock.

| Year | Northern Stock | | Southern Stock | |
|------|----------------|-----------------------------|----------------|-----------------------------|
| | Nominal | Length-Based Model Estimate | Nominal | Length-Based Model Estimate |
| 1960 | 3792 | | 4286 | |
| 1961 | 3276 | | 8105 | |
| 1962 | 1911 | | 11865 | |
| 1963 | 3281 | | 31901 | |
| 1964 | 1409 | 272 | 43373 | 30087 |
| 1965 | 2773 | 338 | 92990 | 64462 |
| 1966 | 5575 | 442 | 107922 | 74815 |
| 1967 | 1863 | 191 | 58783 | 40755 |
| 1968 | 2627 | 237 | 18138 | 12612 |
| 1969 | 2021 | 206 | 52928 | 36725 |
| 1970 | 1032 | 172 | 11454 | 8003 |
| 1971 | 4805 | 452 | 35134 | 24428 |
| 1972 | 15026 | 1111 | 61194 | 42484 |
| 1973 | 15288 | 1133 | 51362 | 35652 |
| 1974 | 7223 | 674 | 26643 | 18496 |
| 1975 | 8701 | 701 | 19976 | 13861 |
| 1976 | 6337 | 575 | 22465 | 15584 |
| 1977 | 891 | 274 | 7062 | 4914 |
| 1978 | 1223 | 291 | 5463 | 3809 |
| 1979 | 1523 | 269 | 7592 | 5273 |
| 1980 | 1029 | 264 | 4082 | 2854 |
| 1981 | 1246 | 437 | 2320 | 1668 |
| 1982 | 1210 | 454 | 3170 | 2253 |
| 1983 | 895 | 449 | 1441 | 1052 |
| 1984 | 1059 | 478 | 1271 | 959 |
| 1985 | 992 | 827 | 903 | 739 |
| 1986 | 1457 | 557 | 694 | 502 |
| 1987 | 1013 | 452 | 943 | 755 |
| 1988 | 862 | 598 | 871 | 656 |
| 1989 | 776 | 486 | 931 | 637 |
| 1990 | 826 | 601 | 798 | 480 |
| 1991 | 743 | 321 | 925 | 593 |
| 1992 | 918 | 456 | 1245 | 684 |
| 1993 | 768 | 302 | 924 | 865 |
| 1994 | 727 | 391 | 983 | 924 |
| 1995 | 186 | 296 | 1428 | 1381 |
| 1996 | 409 | 183 | 700 | 654 |
| 1997 | 338 | 179 | 999 | 827 |
| 1998 | 187 | 118 | 1154 | 1075 |
| 1999 | 220 | 141 | 1351 | 1084 |
| 2000 | 197 | 105 | 1417 | 1413 |
| 2001 | 222 | 195 | 1469 | 1381 |
| 2002 | 275 | 240 | 663 | 592 |
| 2003 | 210 | 149 | 623 | 537 |
| 2004 | 103 | 40 | 588 | 278 |
| 2005 | 96 | 23 | 356 | 298 |
| 2006 | 96 | 67 | 375 | 338 |
| 2007 | 69 | 40 | 470 | 357 |
| 2008 | 52 | 7 | 580 | 489 |
| 2009 | 85 | 37 | 575 | 431 |

Table C19. Red hake discards (mt) from the northern region by gear and half. The discards from 1981-1988 (1991 for scallop dredge and longline) are hind-cast using the first three years of available data. The otter trawl discards are hind-cast combining mesh-sizes.

| | Longline | | | Large Mesh Otter Trawl | | | Small Mesh Otter Trawl | | | Sink Gill Net | | | Scallop Dredge | | | Shrimp Trawl | | |
|------|----------|------|-------|------------------------|--------|--------|------------------------|-------|-------|---------------|-----|-------|----------------|------|-------|--------------|-------|-------|
| | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total |
| 1981 | 3.1 | 1.8 | 4.8 | 269.8 | 921.1 | 1190.9 | Na | | | 2.1 | 4.0 | 6.1 | 6.9 | 8.1 | 15.0 | 107.2 | 0.5 | 107.7 |
| 1982 | 2.8 | 1.5 | 4.3 | 265.9 | 1026.5 | 1292.4 | Na | | | 0.9 | 3.6 | 4.5 | 4.1 | 6.2 | 10.4 | 135.4 | 12.9 | 148.3 |
| 1983 | 4.0 | 1.7 | 5.8 | 293.1 | 865.3 | 1158.4 | Na | | | 1.0 | 3.0 | 3.9 | 3.5 | 4.9 | 8.4 | 137.1 | 39.5 | 176.7 |
| 1984 | 2.7 | 0.3 | 3.1 | 244.8 | 795.7 | 1040.5 | Na | | | 0.9 | 3.9 | 4.8 | 2.0 | 2.9 | 4.9 | 178.9 | 95.1 | 274.0 |
| 1985 | 2.5 | 0.8 | 3.4 | 211.5 | 671.4 | 882.9 | Na | | | 1.0 | 3.3 | 4.3 | 1.4 | 2.8 | 4.2 | 249.7 | 125.5 | 375.2 |
| 1986 | 3.6 | 1.1 | 4.7 | 181.8 | 538.3 | 720.2 | Na | | | 1.2 | 3.5 | 4.7 | 2.6 | 3.0 | 5.6 | 304.7 | 148.7 | 453.4 |
| 1987 | 6.3 | 3.3 | 9.6 | 154.7 | 483.8 | 638.5 | Na | | | 1.1 | 3.6 | 4.6 | 3.1 | 5.8 | 8.9 | 308.6 | 82.2 | 390.9 |
| 1988 | 6.7 | 4.2 | 10.8 | 144.7 | 461.3 | 606.0 | Na | | | 1.2 | 3.6 | 4.8 | 3.9 | 7.4 | 11.3 | 182.4 | 81.6 | 264.0 |
| 1989 | 6.2 | 3.3 | 9.5 | 301.2 | 94.2 | 395.3 | 4.2 | 687.9 | 692.0 | 2.5 | 4.9 | 7.4 | 4.4 | 8.5 | 12.9 | 259.4 | 70.5 | 329.9 |
| 1990 | 4.9 | 3.3 | 8.2 | 30.8 | 112.0 | 142.8 | 10.2 | 101.6 | 111.8 | 1.1 | 3.6 | 4.7 | 3.3 | 9.7 | 13.0 | 194.0 | 120.5 | 314.5 |
| 1991 | 31.2 | 17.9 | 49.2 | 7.7 | 214.8 | 222.5 | 17.8 | 309.4 | 327.2 | 0.7 | 3.2 | 3.9 | 1.2 | 1.6 | 2.8 | 168.6 | 44.0 | 212.5 |
| 1992 | 0.4 | 0.2 | 0.6 | 54.9 | 93.0 | 147.9 | 69.4 | 417.5 | 486.9 | 0.5 | 0.4 | 0.9 | 0.2 | 2.2 | 2.4 | 77.1 | 10.5 | 87.6 |
| 1993 | 0 | 0 | 0 | 17.6 | 3.1 | 20.7 | 5.1 | 27.5 | 32.6 | 0.4 | 0.4 | 0.8 | 9.2 | 15.4 | 24.5 | 4.4 | 0.2 | 4.6 |
| 1994 | 0 | 0 | 0 | 8.9 | 0 | 8.9 | 3.0 | 49.8 | 52.8 | 0.1 | 3.7 | 3.8 | 1.6 | 2.1 | 3.7 | 3.0 | 4.5 | 7.5 |
| 1995 | 3.6 | 4.5 | 8.1 | 2.5 | 13.0 | 15.5 | 3.2 | 22.9 | 26.1 | 0.9 | 0.7 | 1.6 | 0.3 | 0.8 | 1.0 | 3.8 | 6.9 | 10.7 |
| 1996 | 3.3 | 3.5 | 6.9 | 11.8 | 0 | 11.8 | 25.1 | 498.9 | 524.0 | 0.8 | 2.9 | 3.7 | 0.1 | 3.7 | 3.8 | 74.8 | 31.0 | 105.8 |
| 1997 | 3.5 | 3.6 | 7.1 | 3.7 | 8.5 | 12.2 | 0.5 | 3.6 | 4.0 | 0.8 | 0.2 | 1.1 | 0.2 | 5.5 | 5.7 | 84.8 | 10.2 | 95.0 |
| 1998 | 2.7 | 4.1 | 6.8 | 5.5 | 2.5 | 8.0 | 7.5 | 87.4 | 94.8 | 0.4 | 1.1 | 1.5 | 0 | 0 | 0 | 17.7 | 1.0 | 18.7 |
| 1999 | 2.7 | 3.6 | 6.3 | 6.7 | 304.7 | 311.4 | 6.6 | 128.4 | 135.1 | 0.6 | 2.3 | 2.8 | 1.7 | 1.9 | 3.7 | 8.1 | 0.2 | 8.2 |
| 2000 | 1.6 | 3.8 | 5.4 | 0 | 27.0 | 27.0 | 0.1 | 0.4 | 0.4 | 2.1 | 1.6 | 3.7 | 2.2 | 4.1 | 6.2 | 11.9 | 0.2 | 12.1 |
| 2001 | 2.2 | 2.6 | 4.9 | 40.0 | 7.6 | 47.6 | 0.2 | 65.2 | 65.4 | 7.6 | 4.2 | 11.8 | 2.7 | 2.1 | 4.8 | 0.7 | | 0.7 |
| 2002 | 0.8 | 0.5 | 1.3 | 4.1 | 31.1 | 35.2 | 0 | 53.7 | 53.7 | 0.5 | 2.7 | 3.2 | 3.1 | 4.1 | 7.2 | 0.2 | | 0.2 |
| 2003 | 0 | 0 | 0 | 10.0 | 18.5 | 28.5 | 0.0 | 27.8 | 27.8 | 0.9 | 1.3 | 2.3 | 0 | 28.6 | 28.6 | 0.4 | | 0.4 |
| 2004 | 0.0 | 1.7 | 1.7 | 10.4 | 15.9 | 26.3 | 0 | 25.6 | 25.6 | 0.9 | 1.0 | 1.8 | 0.8 | 0.4 | 1.2 | 0.8 | 0.0 | 0.8 |
| 2005 | 0.5 | 2.4 | 2.9 | 5.3 | 30.8 | 36.1 | 0.2 | 10.8 | 10.9 | 0.1 | 0.4 | 0.5 | 0.2 | 6.6 | 6.8 | 0.2 | 0.0 | 0.2 |
| 2006 | 0.2 | 1.3 | 1.5 | 3.4 | 38.4 | 41.8 | 0.0 | 124.6 | 124.6 | 0.4 | 8.4 | 8.9 | 0.6 | 0.6 | 1.1 | 0.1 | 3.3 | 3.3 |
| 2007 | 0 | 0.9 | 0.9 | 6.6 | 14.8 | 21.3 | 4.6 | 72.7 | 77.3 | 0.0 | 0.1 | 0.1 | 2.3 | 18.1 | 20.4 | 5.9 | 1.4 | 7.4 |
| 2008 | 0.0 | 2.2 | 2.2 | 5.6 | 28.6 | 34.2 | 2.1 | 16.4 | 18.5 | 2.4 | 0.2 | 2.6 | 0.2 | 0.4 | 0.6 | 0.8 | 0.5 | 1.3 |
| 2009 | 0.2 | 0.4 | 0.6 | 7.8 | 37.3 | 45.2 | 5.6 | 39.4 | 45.0 | 0.2 | 0.8 | 1.0 | 0.3 | 1.7 | 2.0 | 0.3 | 0.9 | 1.2 |

Table C20. Red hake discards (mt) from the southern region by gear and half. The discards from 1981-1988 (1991 for scallop dredge and longline) are hind-cast using the first three years of available data. The otter trawl discards are hind-cast combining mesh-sizes.

| | Longline | | | Large Mesh Otter Trawl | | | Small Mesh Otter Trawl | | | Sink Gill Net | | | Scallop Dredge | | |
|------|----------|------|-------|------------------------|--------|--------|------------------------|--------|--------|---------------|-------|-------|----------------|------|-------|
| | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total |
| 1981 | 0.4 | 1.0 | 1.4 | 1592.0 | 1113.4 | 2705.4 | Na | | | 0 | 0.003 | 0.003 | 3.4 | 4.6 | 8.0 |
| 1982 | 0.3 | 0.5 | 0.8 | 1806.3 | 1959.1 | 3765.3 | Na | | | 0 | 0.003 | 0.003 | 4.4 | 5.3 | 9.7 |
| 1983 | 0.2 | 0.5 | 0.7 | 1958.6 | 1918.1 | 3876.7 | Na | | | 0 | 0.005 | 0.005 | 5.8 | 5.6 | 11.4 |
| 1984 | 0.2 | 0.3 | 0.5 | 2132.9 | 1764.5 | 3897.4 | Na | | | 0 | 0.008 | 0.008 | 6.9 | 5.3 | 12.2 |
| 1985 | 0.1 | 0.5 | 0.7 | 1741.8 | 1214.9 | 2956.7 | Na | | | 0 | 0.004 | 0.004 | 6.0 | 5.1 | 11.1 |
| 1986 | 0.1 | 0.5 | 0.6 | 1724.9 | 1650.1 | 3375.1 | Na | | | 0 | 0.007 | 0.007 | 6.0 | 6.9 | 12.9 |
| 1987 | 0.2 | 0.6 | 0.8 | 1787.8 | 1503.9 | 3291.7 | Na | | | 0 | 0.008 | 0.008 | 10.7 | 9.9 | 20.6 |
| 1988 | 0.1 | 0.1 | 0.2 | 2002.2 | 1439.3 | 3441.5 | Na | | | 0 | 0.008 | 0.008 | 11.0 | 9.1 | 20.0 |
| 1989 | 0.07 | 0.15 | 0.21 | 39.4 | 19.5 | 58.9 | 1875.0 | 3047.6 | 4922.6 | 0 | 0 | 0 | 15.0 | 8.8 | 23.8 |
| 1990 | 0.05 | 0.21 | 0.26 | 1112.1 | 226.0 | 1338.1 | 1717.4 | 1634.8 | 3352.2 | 0 | 0 | 0 | 18.8 | 38.3 | 57.0 |
| 1991 | 0.83 | 0.47 | 1.30 | 380.9 | 65.2 | 446.1 | 1439.0 | 704.8 | 2143.8 | 0 | 0 | 0 | 13.6 | 7.2 | 20.8 |
| 1992 | 0 | 1.96 | 1.96 | 595.9 | 172.9 | 768.9 | 3542.2 | 2009.1 | 5551.4 | 0.033 | 0.144 | 0.177 | 14.7 | 5.9 | 20.6 |
| 1993 | 0 | 0 | 0 | 53.5 | 0.5 | 54.1 | 2089.5 | 3146.7 | 5236.3 | 0.064 | 0.111 | 0.175 | 7.1 | 10.0 | 17.2 |
| 1994 | 0 | 0 | 0 | 38.5 | 1.1 | 39.6 | 1187.7 | 442.1 | 1629.9 | 0 | 0.012 | 0.012 | 7.2 | 43.1 | 50.3 |
| 1995 | 0 | 0 | 0 | 38.7 | 1.7 | 40.5 | 718.3 | 542.6 | 1260.8 | 0.007 | 0 | 0.007 | 19.5 | 8.0 | 27.5 |
| 1996 | 1.06 | 0.75 | 1.82 | 4.8 | 8.1 | 12.9 | 325.6 | 20.6 | 346.2 | 0 | 0 | 0 | 8.2 | 10.5 | 18.7 |
| 1997 | 1.21 | 1.04 | 2.25 | 0.4 | 290.9 | 291.3 | 2062.4 | 0.2 | 2062.6 | 0.056 | 0 | 0.056 | 43.1 | 23.2 | 66.3 |
| 1998 | 1.17 | 0.80 | 1.97 | 0.3 | 0 | 0.3 | 199.6 | 534.1 | 733.7 | 0.015 | 0 | 0.015 | 2.7 | 1.5 | 4.3 |
| 1999 | 0.90 | 0.42 | 1.31 | 0 | 0 | 0 | 985.9 | 4.9 | 990.8 | 0.148 | 0 | 0.148 | 24.1 | 43.9 | 68.0 |
| 2000 | 0.60 | 0.52 | 1.11 | 11.2 | 1.5 | 12.8 | 108.6 | 9.7 | 118.3 | 0.032 | 0 | 0.032 | 77.9 | 39.7 | 117.6 |
| 2001 | 0.84 | 0.84 | 1.68 | 0.0 | 0 | 0.0 | 76.6 | 22.4 | 99.0 | 0.076 | 0 | 0.076 | 17.3 | 19.6 | 36.9 |
| 2002 | 0 | 0 | 0 | 0.6 | 0.8 | 1.4 | 6.5 | 292.7 | 299.2 | 0.148 | 0 | 0.148 | 3.0 | 23.2 | 26.2 |
| 2003 | 0 | 0 | 0 | 10.3 | 37.8 | 48.1 | 272.0 | 14.9 | 286.9 | 0 | 0 | 0 | 1.6 | 8.4 | 10.0 |
| 2004 | 0.01 | 0.01 | 0.01 | 22.2 | 91.4 | 113.6 | 213.3 | 259.5 | 472.8 | 0 | 0 | 0 | 12.0 | 17.3 | 29.4 |
| 2005 | 0.03 | 0.01 | 0.04 | 56.0 | 75.0 | 131.0 | 232.1 | 581.7 | 813.9 | 0 | 0 | 0 | 7.0 | 55.3 | 62.3 |
| 2006 | 0.01 | 0.08 | 0.09 | 43.6 | 56.4 | 99.9 | 378.6 | 95.3 | 473.9 | 0 | 0 | 0 | 27.4 | 72.5 | 99.9 |
| 2007 | 3.20 | 4.35 | 7.55 | 85.5 | 45.8 | 131.3 | 1188.7 | 196.6 | 1385.3 | 0 | 0 | 0 | 9.3 | 12.0 | 21.3 |
| 2008 | 3.78 | 3.64 | 7.42 | 96.6 | 16.7 | 113.3 | 488.4 | 150.3 | 638.7 | 0 | 0 | 0 | 17.4 | 37.0 | 54.4 |
| 2009 | 2.76 | 4.77 | 7.53 | 105.0 | 36.8 | 141.7 | 110.1 | 548.2 | 658.4 | 0 | 0 | 0 | 33.6 | 27.7 | 61.3 |

Table C21. White hake discards (mt) from the northern region by gear and half. The discards from 1981-1988 (1991 for scallop dredge and longline) are hind-cast using the first three years of available data. The otter trawl discards are hind-cast combining mesh-sizes.

| | Longline | | | Large Mesh Otter Trawl | | | Small Mesh Otter Trawl | | | Sink Gill Net | | | Scallop Dredge | | | Shrimp Trawl | | |
|------|----------|------|-------|------------------------|-------|-------|------------------------|--------|--------|---------------|-------|-------|----------------|--------|--------|--------------|-------|-------|
| | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total |
| 1981 | 1.2 | 0.8 | 2.0 | 106.0 | 537.6 | 643.6 | Na | | | 18.6 | 65.6 | 84.2 | 8.9 | 127.1 | 136.0 | 6.9 | 0.1 | 7.0 |
| 1982 | 1.1 | 0.6 | 1.8 | 104.5 | 599.2 | 703.6 | Na | | | 8.1 | 59.1 | 67.2 | 5.3 | 98.2 | 103.5 | 8.7 | 3.7 | 12.4 |
| 1983 | 1.6 | 0.8 | 2.4 | 115.2 | 505.0 | 620.1 | Na | | | 8.6 | 49.1 | 57.7 | 4.5 | 77.0 | 81.5 | 8.8 | 11.3 | 20.2 |
| 1984 | 1.1 | 0.1 | 1.3 | 96.2 | 464.4 | 560.6 | Na | | | 8.2 | 64.6 | 72.8 | 2.6 | 46.2 | 48.8 | 11.5 | 27.3 | 38.8 |
| 1985 | 1.0 | 0.4 | 1.3 | 84.1 | 418.2 | 502.2 | Na | | | 8.8 | 55.3 | 64.1 | 1.8 | 44.3 | 46.1 | 16.1 | 36.0 | 52.1 |
| 1986 | 1.4 | 0.5 | 1.9 | 73.5 | 328.4 | 401.9 | Na | | | 10.8 | 57.9 | 68.7 | 3.4 | 47.5 | 50.9 | 19.6 | 42.7 | 62.3 |
| 1987 | 2.5 | 1.4 | 4.0 | 61.8 | 292.1 | 353.9 | Na | | | 9.7 | 58.8 | 68.5 | 4.0 | 91.3 | 95.3 | 19.9 | 23.6 | 43.5 |
| 1988 | 2.6 | 1.8 | 4.4 | 57.6 | 278.1 | 335.7 | Na | | | 10.8 | 59.9 | 70.8 | 5.0 | 116.3 | 121.3 | 11.8 | 23.4 | 35.2 |
| 1989 | 2.48 | 1.45 | 3.93 | 70.7 | 288.8 | 359.4 | 49.94 | 86.52 | 136.46 | 11.6 | 22.3 | 33.9 | 5.61 | 133.97 | 139.58 | 9.78 | 17.42 | 27.20 |
| 1990 | 1.98 | 1.43 | 3.40 | 16.1 | 79.8 | 95.9 | 1.04 | 268.18 | 269.22 | 8.5 | 124.3 | 132.8 | 2.02 | 144.98 | 147.00 | 8.65 | 3.73 | 12.39 |
| 1991 | 1.22 | 0.70 | 1.93 | 6.5 | 132.3 | 138.8 | 1.82 | 31.57 | 33.38 | 18.3 | 46.4 | 64.7 | 7.85 | 10.07 | 17.91 | 21.63 | 46.26 | 67.89 |
| 1992 | 11.49 | 7.25 | 18.74 | 42.7 | 219.8 | 262.5 | 33.59 | 0 | 33.59 | 34.4 | 94.2 | 128.5 | 3.92 | 11.86 | 15.78 | 71.90 | 1.01 | 72.91 |
| 1993 | 0 | 0 | 0 | 28.8 | 62.8 | 91.5 | 14.52 | 276.75 | 291.27 | 62.8 | 167.4 | 230.2 | 1.93 | 278.97 | 280.90 | 3.37 | 0.54 | 3.91 |
| 1994 | 0 | 0 | 0 | 14.9 | 0 | 14.9 | 3.93 | 64.31 | 68.24 | 1.7 | 19.0 | 20.7 | 0.99 | 1.31 | 2.29 | 5.43 | 6.02 | 11.45 |
| 1995 | 4.23 | 5.28 | 9.52 | 27.3 | 88.0 | 115.2 | 0.74 | 5.01 | 5.76 | 2.0 | 43.3 | 45.3 | 0.50 | 1.50 | 2.00 | 12.34 | 1.00 | 13.34 |
| 1996 | 3.89 | 4.13 | 8.02 | 17.4 | 0.5 | 18.0 | 1.22 | 8.24 | 9.46 | 7.1 | 73.2 | 80.3 | 0.04 | 2.83 | 2.87 | 15.69 | 1.64 | 17.33 |
| 1997 | 4.12 | 4.24 | 8.36 | 3.6 | 13.8 | 17.4 | 4.10 | 31.67 | 35.76 | 17.0 | 23.0 | 40.0 | 0.03 | 0.65 | 0.68 | 2.31 | 0.28 | 2.58 |
| 1998 | 3.13 | 4.84 | 7.97 | 25.5 | 21.5 | 47.0 | 0.24 | 2.80 | 3.04 | 2.2 | 2.3 | 4.5 | 22.47 | 24.89 | 47.36 | 5.46 | 0.30 | 5.75 |
| 1999 | 3.22 | 4.17 | 7.38 | 3.8 | 106.2 | 110.0 | 0 | 0 | 0 | 8.9 | 4.6 | 13.6 | 1.16 | 1.38 | 2.53 | 2.48 | 0.06 | 2.54 |
| 2000 | 1.82 | 4.49 | 6.31 | 40.6 | 73.1 | 113.7 | 0.25 | 1.34 | 1.59 | 5.8 | 8.9 | 14.7 | 1.43 | 2.66 | 4.08 | 3.65 | 0.06 | 3.71 |
| 2001 | 2.62 | 3.10 | 5.72 | 55.2 | 139.0 | 194.2 | 2.68 | 0 | 2.68 | 1.3 | 47.0 | 48.2 | 0.69 | 0.53 | 1.22 | 0 | | 0 |
| 2002 | 1.27 | 0.82 | 2.09 | 49.1 | 51.5 | 100.7 | 0 | 0.17 | 0.17 | 1.4 | 2.7 | 4.1 | 0.31 | 0.41 | 0.72 | 0.06 | | 0.06 |
| 2003 | 0 | 0 | 0 | 30.4 | 26.5 | 56.9 | 0.02 | 0 | 0.02 | 7.3 | 8.0 | 15.2 | 0.09 | 0.46 | 0.55 | 0.21 | | 0.21 |
| 2004 | 0 | 2.02 | 2.02 | 6.7 | 31.5 | 38.2 | 0.00 | 0.85 | 0.85 | 1.2 | 10.0 | 11.2 | 0.00 | 0.00 | 0.01 | 0.33 | 0.01 | 0.34 |
| 2005 | 0.11 | 3.08 | 3.19 | 5.4 | 14.9 | 20.3 | 0.06 | 0.49 | 0.56 | 2.6 | 13.1 | 15.7 | 0 | 0.77 | 0.77 | 0.40 | 0.02 | 0.42 |
| 2006 | 0.05 | 2.51 | 2.55 | 7.0 | 15.7 | 22.7 | 0.01 | 0.09 | 0.11 | 1.8 | 12.5 | 14.3 | 0.13 | 0.19 | 0.32 | 1.00 | 0 | 1.00 |
| 2007 | 0 | 0.77 | 0.77 | 3.9 | 5.6 | 9.5 | 0.03 | 0.48 | 0.51 | 2.5 | 2.1 | 4.6 | 0.25 | 0.13 | 0.38 | 3.54 | 0.85 | 4.39 |
| 2008 | 0.03 | 3.13 | 3.16 | 2.6 | 8.3 | 10.9 | 0.09 | 0.73 | 0.82 | 3.3 | 8.8 | 12.1 | 0.04 | 0.13 | 0.17 | 3.29 | 0.82 | 4.11 |
| 2009 | 0.04 | 0.26 | 0.30 | 8.0 | 13.7 | 21.6 | 0.17 | 1.21 | 1.39 | 2.4 | 4.9 | 7.3 | 0 | 0.86 | 0.86 | 2.54 | 1.83 | 4.38 |

Table C22. White hake discards (mt) from the southern region by gear and half. The discards from 1981-1988 (1991 for scallop dredge and longline) are hind-cast using the first three years of available data. The otter trawl discards are hind-cast combining mesh-sizes.

| | Longline | | | Large Mesh Otter Trawl | | | Small Mesh Otter Trawl | | | Sink Gill Net | | | Scallop Dredge | | |
|------|----------|-------|-------|------------------------|--------|--------|------------------------|-------|-------|---------------|-------|-------|----------------|-------|-------|
| | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total | 1 | 2 | Total |
| 1981 | 0.4 | 1.0 | 1.4 | 1592.0 | 1113.4 | 2705.4 | Na | | | 0 | 0.003 | 0.003 | 3.4 | 4.6 | 8.0 |
| 1982 | 0.3 | 0.5 | 0.8 | 1806.3 | 1959.1 | 3765.3 | Na | | | 0 | 0.003 | 0.003 | 4.4 | 5.3 | 9.7 |
| 1983 | 0.2 | 0.5 | 0.7 | 1958.6 | 1918.1 | 3876.7 | Na | | | 0 | 0.005 | 0.005 | 5.8 | 5.6 | 11.4 |
| 1984 | 0.2 | 0.3 | 0.5 | 2132.9 | 1764.5 | 3897.4 | Na | | | 0 | 0.008 | 0.008 | 6.9 | 5.3 | 12.2 |
| 1985 | 0.1 | 0.5 | 0.7 | 1741.8 | 1214.9 | 2956.7 | Na | | | 0 | 0.004 | 0.004 | 6.0 | 5.1 | 11.1 |
| 1986 | 0.1 | 0.5 | 0.6 | 1724.9 | 1650.1 | 3375.1 | Na | | | 0 | 0.007 | 0.007 | 6.0 | 6.9 | 12.9 |
| 1987 | 0.2 | 0.6 | 0.8 | 1787.8 | 1503.9 | 3291.7 | Na | | | 0 | 0.008 | 0.008 | 10.7 | 9.9 | 20.6 |
| 1988 | 0.1 | 0.1 | 0.2 | 2002.2 | 1439.3 | 3441.5 | Na | | | 0 | 0.008 | 0.008 | 11.0 | 9.1 | 20.0 |
| 1989 | 0 | 0 | 0 | 6.4 | 9.0 | 15.3 | 10.8 | 142.9 | 153.8 | 0 | 0 | 0 | 9.8 | 111.4 | 121.3 |
| 1990 | 0 | 0 | 0 | 238.3 | 40.7 | 279.0 | 185.1 | 12.9 | 198.0 | 0 | 0 | 0 | 10.3 | 188.9 | 199.3 |
| 1991 | 0 | 0 | 0 | 0.7 | 1.0 | 1.7 | 7.0 | 87.4 | 94.3 | 0 | 0 | 0 | 8.0 | 4.3 | 12.3 |
| 1992 | 0 | 0 | 0 | 4.0 | 0 | 4.0 | 247.5 | 9.7 | 257.2 | 0 | 0 | 0 | 6.9 | 4.8 | 11.7 |
| 1993 | 0 | 0 | 0 | 20.2 | 0 | 20.2 | 2.4 | 0 | 2.4 | 0.128 | 0.037 | 0.165 | 8.2 | 284.6 | 292.7 |
| 1994 | 0 | 0 | 0 | 165.4 | 10.6 | 176.0 | 78.9 | 99.3 | 178.1 | 0.085 | 0.004 | 0.088 | 0.8 | 1.8 | 2.7 |
| 1995 | 0 | 0 | 0 | 24.5 | 0.1 | 24.6 | 2.8 | 0 | 2.8 | 0 | 0 | 0 | 68.3 | 62.5 | 130.8 |
| 1996 | 0.134 | 0.095 | 0.229 | 1.8 | 0.1 | 1.9 | 6.5 | 0.4 | 6.9 | 0 | 0 | 0 | 0.0 | 1.2 | 1.2 |
| 1997 | 0.153 | 0.131 | 0.284 | 23.7 | 27.0 | 50.7 | 18.4 | 0 | 18.4 | 0.195 | 0.266 | 0.461 | 0.3 | 1.9 | 2.2 |
| 1998 | 0.148 | 0.101 | 0.249 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 43.7 | 44.0 |
| 1999 | 0.113 | 0.053 | 0.166 | 0 | 7.6 | 7.6 | 0.3 | 576.8 | 577.1 | 0 | 0 | 0 | 0 | 7.7 | 7.7 |
| 2000 | 0.076 | 0.065 | 0.141 | 1.6 | 0.7 | 2.3 | 32.0 | 1.4 | 33.4 | 1.622 | 0 | 1.622 | 25.8 | 15.2 | 41.0 |
| 2001 | 0.106 | 0.106 | 0.212 | 0 | 0 | 0 | 0.2 | 0 | 0.2 | 0 | 0 | 0 | 3.5 | 1.4 | 4.9 |
| 2002 | 0 | 0 | 0 | 0 | 0.4 | 0.4 | 0 | 1.9 | 1.9 | 0 | 0 | 0 | 1.0 | 3.0 | 4.0 |
| 2003 | 0 | 0 | 0 | 0.2 | 1.6 | 1.8 | 0 | 378.3 | 378.3 | 0.538 | 0 | 0.538 | 0.3 | 1.5 | 1.7 |
| 2004 | 0.025 | 0.021 | 0.047 | 2.6 | 25.1 | 27.7 | 35.1 | 9.3 | 44.4 | 0.605 | 0 | 0.605 | 0.9 | 4.9 | 5.9 |
| 2005 | 0 | 0.051 | 0.051 | 2.1 | 3.6 | 5.7 | 5.1 | 86.8 | 92.0 | 0.918 | 0 | 0.918 | 0.5 | 2.5 | 3.0 |
| 2006 | 0 | 0.608 | 0.608 | 4.8 | 12.0 | 16.8 | 6.0 | 0.2 | 6.2 | 0.112 | 0 | 0.112 | 0.3 | 3.0 | 3.3 |
| 2007 | 0 | 0 | 0 | 10.3 | 5.0 | 15.3 | 2.9 | 0.0 | 2.9 | 1.196 | 0 | 1.196 | 0.7 | 1.9 | 2.6 |
| 2008 | 0 | 0 | 0 | 5.0 | 5.3 | 10.4 | 117.4 | 30.9 | 148.3 | 0 | 0 | 0 | 5.4 | 7.0 | 12.4 |
| 2009 | 0 | 0 | 0 | 8.0 | 0.4 | 8.3 | 0.2 | 14.7 | 14.9 | 0 | 0 | 0 | 7.0 | 2.2 | 9.2 |

Table C23. Number of discarded red hake sampled from the FOP in the northern region by gear type.

| | Large Mesh | | | | Small Mesh | | | | Sink Gill Net | | | | Scallop Dredge | | | | Shrimp Trawl | | | |
|------|------------|-----|--------|-----|------------|-----|--------|------|---------------|-----|--------|-----|----------------|-----|--------|-----|--------------|------|--------|-----|
| | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | |
| | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len |
| 1989 | 4 | 557 | 4 | 167 | 2 | 273 | 6 | 627 | - | - | 1 | 1 | - | - | - | - | 11 | 1815 | - | - |
| 1990 | - | - | 1 | 44 | - | - | 4 | 711 | - | - | - | - | - | - | - | - | 2 | 160 | - | - |
| 1991 | - | - | 1 | 1 | - | - | 6 | 429 | 1 | 2 | 6 | 7 | - | - | - | - | - | - | - | - |
| 1992 | 2 | 72 | - | - | 2 | 535 | 4 | 463 | 2 | 4 | 1 | 1 | - | - | - | - | 7 | 39 | 2 | 152 |
| 1993 | - | - | - | - | 2 | 650 | - | - | - | - | 1 | 1 | - | - | - | - | 1 | 2 | - | - |
| 1994 | - | - | - | - | - | - | - | - | 1 | 1 | 1 | 2 | - | - | 1 | 27 | 1 | 1 | 3 | 116 |
| 1995 | - | - | 1 | 22 | - | - | 1 | 3 | - | - | - | - | - | - | - | - | 12 | 136 | 1 | 3 |
| 1996 | - | - | - | - | - | - | 10 | 750 | 2 | 2 | 2 | 4 | - | - | - | - | 7 | 151 | 1 | 32 |
| 1997 | - | - | 1 | 61 | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 104 | - | - |
| 1998 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1999 | - | - | 2 | 152 | - | - | 1 | 43 | 1 | 2 | 3 | 5 | - | - | 1 | 7 | - | - | - | - |
| 2000 | - | - | 1 | 4 | - | - | - | - | 3 | 22 | 1 | 1 | - | - | - | - | - | - | - | - |
| 2001 | 1 | 1 | - | - | - | - | - | - | 1 | 3 | 2 | 4 | - | - | - | - | - | - | - | - |
| 2002 | - | - | 7 | 136 | - | - | 9 | 198 | 2 | 2 | 2 | 6 | - | - | 1 | 1 | - | - | - | - |
| 2003 | 12 | 89 | 10 | 261 | - | - | 3 | 116 | 9 | 12 | 4 | 7 | - | - | 1 | 103 | 2 | 7 | - | - |
| 2004 | 4 | 37 | 20 | 210 | - | - | 9 | 316 | 9 | 12 | 21 | 40 | - | - | 1 | 1 | 3 | 48 | - | - |
| 2005 | 23 | 126 | 19 | 86 | 2 | 5 | 8 | 63 | 1 | 1 | 6 | 10 | - | - | 2 | 2 | 1 | 1 | - | - |
| 2006 | 12 | 105 | 6 | 65 | - | - | 3 | 274 | - | - | 2 | 2 | - | - | 4 | 17 | 1 | 1 | - | - |
| 2007 | 13 | 175 | 6 | 25 | - | - | 3 | 1079 | - | - | - | - | - | - | 1 | 2 | 2 | 30 | - | - |
| 2008 | 2 | 2 | 26 | 183 | - | - | - | - | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 16 | 1 | 16 | - | - |
| 2009 | 7 | 27 | 10 | 210 | - | - | 2 | 85 | 1 | 1 | 2 | 3 | - | - | - | - | - | - | - | - |

Table C24. Number of discarded red hake sampled from the FOP in the southern region by gear type.

| | Large Mesh | | | | Small Mesh | | | | Scallop Dredge | | | |
|------|------------|-----|--------|-----|------------|------|--------|------|----------------|-----|--------|-----|
| | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | |
| | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len |
| 1989 | 1 | 9 | 1 | 10 | 5 | 460 | - | - | - | - | - | - |
| 1990 | - | - | - | - | 4 | 383 | - | - | - | - | - | - |
| 1991 | - | - | - | - | 1 | 45 | 3 | 193 | - | - | - | - |
| 1992 | - | - | - | - | 9 | 1583 | 1 | 73 | - | - | - | - |
| 1993 | - | - | - | - | - | - | 1 | 110 | 1 | 4 | - | - |
| 1994 | - | - | - | - | 1 | 29 | 3 | 27 | - | - | 2 | 24 |
| 1995 | 2 | 13 | 1 | 3 | 2 | 89 | 1 | 14 | 1 | 2 | - | - |
| 1996 | - | - | - | - | - | - | 1 | 11 | - | - | 2 | 7 |
| 1997 | - | - | 1 | 482 | 4 | 203 | 3 | 3 | 1 | 184 | 1 | 7 |
| 1998 | - | - | - | - | - | - | - | - | - | - | - | - |
| 1999 | - | - | - | - | - | - | 3 | 67 | 1 | 1 | 2 | 29 |
| 2000 | - | - | - | - | 1 | 87 | 1 | 2 | 4 | 202 | 2 | 3 |
| 2001 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2002 | - | - | - | - | - | - | 1 | 92 | - | - | 2 | 114 |
| 2003 | - | - | - | - | 1 | 107 | - | - | 2 | 3 | 2 | 104 |
| 2004 | 4 | 255 | 13 | 690 | 3 | 152 | 12 | 832 | 2 | 28 | 9 | 185 |
| 2005 | 15 | 365 | 14 | 498 | 13 | 525 | 14 | 1219 | - | - | 6 | 217 |
| 2006 | 10 | 40 | 4 | 279 | 9 | 353 | 10 | 502 | - | - | 3 | 4 |
| 2007 | 4 | 135 | 12 | 114 | 8 | 630 | 4 | 45 | - | - | 4 | 20 |
| 2008 | 7 | 29 | 5 | 42 | 6 | 290 | 3 | 47 | 5 | 51 | 7 | 53 |
| 2009 | 4 | 71 | 4 | 27 | 2 | 2 | 17 | 922 | 7 | 31 | 2 | 14 |

Table C25. Number of discarded white hake sampled from the FOP in the northern region by gear type.

| | Large Mesh | | | | Small Mesh | | | | Sink Gill Net | | | | Scallop Dredge | | | | Shrimp Trawl | | | |
|------|------------|-----|--------|-----|------------|-----|--------|-----|---------------|-----|--------|-----|----------------|-----|--------|-----|--------------|-----|--------|-----|
| | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | |
| | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len |
| 1989 | 3 | 217 | 7 | 709 | 1 | 472 | 6 | 583 | 0 | 0 | 1 | 2 | - | - | - | - | - | - | - | - |
| 1990 | 2 | 8 | 1 | 9 | - | - | 4 | 303 | 0 | 0 | 1 | 32 | - | - | - | - | - | - | - | - |
| 1991 | - | - | 1 | 43 | - | - | - | - | 1 | 135 | 7 | 30 | - | - | - | - | - | - | - | - |
| 1992 | - | - | 1 | 86 | - | - | - | - | 0 | 0 | 4 | 4 | - | - | - | - | 6 | 17 | 3 | 58 |
| 1993 | 2 | 29 | 1 | 14 | - | - | 1 | 30 | 1 | 1 | 10 | 13 | - | - | - | - | 17 | 282 | - | - |
| 1994 | 4 | 26 | - | - | - | - | - | - | 0 | 0 | 2 | 4 | - | - | 1 | 1 | 30 | 517 | 4 | 256 |
| 1995 | 10 | 146 | 5 | 163 | - | - | 3 | 106 | 1 | 1 | 7 | 30 | - | - | 1 | 7 | 37 | 958 | - | - |
| 1996 | 5 | 56 | - | - | 2 | 145 | 8 | 309 | 2 | 12 | 2 | 3 | - | - | - | - | 9 | 325 | 2 | 15 |
| 1997 | 2 | 6 | 5 | 47 | - | - | - | - | 0 | 0 | 2 | 4 | - | - | - | - | 4 | 25 | - | - |
| 1998 | 2 | 11 | 1 | 2 | - | - | - | - | 0 | 0 | 1 | 1 | 1 | 5 | - | - | 0 | 0 | - | - |
| 1999 | - | - | 4 | 31 | - | - | - | - | 0 | 0 | 3 | 20 | - | - | - | - | 0 | 0 | - | - |
| 2000 | 3 | 12 | - | - | - | - | 2 | 10 | 2 | 9 | 0 | 0 | - | - | - | - | 0 | 0 | - | - |
| 2001 | - | - | - | - | 3 | 42 | - | - | 1 | 4 | 2 | 2 | - | - | - | - | 0 | 0 | - | - |
| 2002 | - | - | 9 | 126 | - | - | 2 | 14 | 0 | 0 | 1 | 2 | - | - | - | - | 0 | 0 | - | - |
| 2003 | 8 | 23 | 11 | 172 | 1 | 1 | - | - | 3 | 7 | 12 | 52 | - | - | - | - | 1 | 1 | - | - |
| 2004 | 13 | 125 | 30 | 392 | 2 | 4 | 5 | 92 | 4 | 6 | 19 | 69 | - | - | - | - | 0 | 0 | - | - |
| 2005 | 43 | 454 | 45 | 660 | 3 | 4 | 4 | 12 | 2 | 3 | 16 | 35 | - | - | - | - | 5 | 28 | - | - |
| 2006 | 21 | 280 | 20 | 346 | - | - | - | - | 1 | 1 | 3 | 4 | - | - | - | - | 4 | 131 | - | - |
| 2007 | 18 | 163 | 29 | 209 | - | - | 1 | 3 | 2 | 7 | 1 | 5 | 1 | 1 | - | - | 3 | 43 | - | - |
| 2008 | 14 | 118 | 50 | 465 | - | - | 1 | 5 | 1 | 3 | 4 | 6 | 2 | 3 | - | - | 2 | 31 | 1 | 25 |
| 2009 | 22 | 99 | 23 | 214 | - | - | 2 | 12 | 2 | 2 | 2 | 3 | - | - | - | - | 1 | 13 | 1 | 1 |

Table C26. Number of discarded white hake sampled from the FOP in the southern region by gear type.

| | Large Mesh | | | | Small Mesh | | | | Sink Gill Net | | | | Scallop Dredge | | | |
|------|------------|-----|--------|-----|------------|-----|--------|-----|---------------|-----|--------|-----|----------------|-----|--------|-----|
| | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | | Half 1 | | Half 2 | |
| | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len | trips | len |
| 1989 | - | - | - | - | - | - | 3 | 115 | - | - | - | - | - | - | - | - |
| 1990 | - | - | - | - | - | - | 0 | 0 | - | - | - | - | - | - | - | - |
| 1991 | - | - | - | - | - | - | 1 | 2 | - | - | - | - | - | - | - | - |
| 1992 | - | - | - | - | - | - | 0 | 0 | - | - | - | - | - | - | - | - |
| 1993 | - | - | - | - | - | - | 0 | 0 | - | - | - | - | 1 | 1 | - | - |
| 1994 | - | - | - | - | - | - | 1 | 2 | - | - | - | - | 1 | 1 | 2 | 2 |
| 1995 | - | - | - | - | - | - | 0 | 0 | - | - | - | - | 2 | 51 | 1 | 66 |
| 1996 | - | - | - | - | - | - | 1 | 26 | - | - | - | - | - | - | 1 | 1 |
| 1997 | 2 | 33 | 2 | 17 | 1 | 29 | - | - | - | - | - | - | - | - | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 3 | 41 |
| 1999 | 0 | 0 | 2 | 11 | 0 | 0 | - | - | - | - | - | - | - | - | 3 | 32 |
| 2000 | 0 | 0 | 0 | 0 | 2 | 107 | - | - | - | - | - | - | - | - | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - | 0 | 0 |
| 2002 | 0 | 0 | 2 | 3 | 0 | 0 | - | - | - | - | - | - | - | - | 0 | 0 |
| 2003 | 1 | 1 | 1 | 24 | 0 | 0 | - | - | - | - | - | - | - | - | 0 | 0 |
| 2004 | 6 | 65 | 8 | 215 | 3 | 89 | - | - | - | - | - | - | - | - | 6 | 212 |
| 2005 | 9 | 40 | 14 | 114 | 6 | 87 | - | - | - | - | - | - | - | - | 4 | 60 |
| 2006 | 12 | 220 | 5 | 69 | 2 | 19 | - | - | - | - | - | - | - | - | 1 | 4 |
| 2007 | 4 | 46 | 4 | 10 | 2 | 39 | - | - | - | - | - | - | - | - | 1 | 15 |
| 2008 | 5 | 9 | 4 | 32 | 3 | 6 | - | - | - | - | - | - | - | - | 4 | 42 |
| 2009 | 1 | 1 | 1 | 3 | 1 | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 |

Table C27. Pooling of red hake observer length samples to estimate length and species composition of the commercial discards by gear from the north.

| | Red North | | Red North | | Red North | | Red North | |
|------|------------|-------|------------|-------|--------------|-------|---------------|-------|
| | Large Mesh | | Small Mesh | | Shrimp Trawl | | Sink Gill Net | |
| | Half1 | Half2 | Half1 | Half2 | Half1 | Half2 | Half1 | Half2 |
| 1989 | | | | | | | | |
| 1990 | | | | | | | | |
| 1991 | | | | | | | | |
| 1992 | | | | | | | | |
| 1993 | | | | | | | | |
| 1994 | | | | | | | | |
| 1995 | | | | | | | | |
| 1996 | | | | | | | | |
| 1997 | | | | | | | | |
| 1998 | | | | | | | | |
| 1999 | | | | | | | | |
| 2000 | | | | | | | | |
| 2001 | | | | | | | | |
| 2002 | | | | | | | | |
| 2003 | | | | | | | | |
| 2004 | | | | | | | | |
| 2005 | | | | | | | | |
| 2006 | | | | | | | | |
| 2007 | | | | | | | | |
| 2008 | | | | | | | | |
| 2009 | | | | | | | | |

Table C28. Pooling of red hake observer length samples to estimate length and species composition of the commercial discards by gear from the south.

| | Red South | | Red South | |
|------|------------|-------|------------|-------|
| | Large Mesh | | Small Mesh | |
| | Half1 | Half2 | Half1 | Half2 |
| 1989 | | | | |
| 1990 | | | | |
| 1991 | | | | |
| 1992 | | | | |
| 1993 | | | | |
| 1994 | | | | |
| 1995 | | | | |
| 1996 | | | | |
| 1997 | | | | |
| 1998 | | | | |
| 1999 | | | | |
| 2000 | | | | |
| 2001 | | | | |
| 2002 | | | | |
| 2003 | | | | |
| 2004 | | | | |
| 2005 | | | | |
| 2006 | | | | |
| 2007 | | | | |
| 2008 | | | | |
| 2009 | | | | |

Table C29. Pooling of white hake observer length samples to estimate length and species composition of the commercial discards by gear from the north.

| | White North | | White North | | White North | | White North | |
|------|-------------|-------|-------------|-------|--------------|-------|---------------|-------|
| | Large Mesh | | Small Mesh | | Shrimp Trawl | | Sink Gill Net | |
| | Half1 | Half2 | Half1 | Half2 | Half1 | Half2 | Half1 | Half2 |
| 1989 | | | | | | | | |
| 1990 | | | | | | | | |
| 1991 | | | | | | | | |
| 1992 | | | | | | | | |
| 1993 | | | | | | | | |
| 1994 | | | | | | | | |
| 1995 | | | | | | | | |
| 1996 | | | | | | | | |
| 1997 | | | | | | | | |
| 1998 | | | | | | | | |
| 1999 | | | | | | | | |
| 2000 | | | | | | | | |
| 2001 | | | | | | | | |
| 2002 | | | | | | | | |
| 2003 | | | | | | | | |
| 2004 | | | | | | | | |
| 2005 | | | | | | | | |
| 2006 | | | | | | | | |
| 2007 | | | | | | | | |
| 2008 | | | | | | | | |
| 2009 | | | | | | | | |

Table C30. Pooling of white hake observer length samples to estimate length and species composition of the commercial discards by gear from the south.

| | White South | | White South | |
|------|-------------|-------|-------------|-------|
| | Large Mesh | | Small Mesh | |
| | Half1 | Half2 | Half1 | Half2 |
| 1989 | | | | |
| 1990 | | | | |
| 1991 | | | | |
| 1992 | | | | |
| 1993 | | | | |
| 1994 | | | | |
| 1995 | | | | |
| 1996 | | | | |
| 1997 | | | | |
| 1998 | | | | |
| 1999 | | | | |
| 2000 | | | | |
| 2001 | | | | |
| 2002 | | | | |
| 2003 | | | | |
| 2004 | | | | |
| 2005 | | | | |
| 2006 | | | | |
| 2007 | | | | |
| 2008 | | | | |
| 2009 | | | | |

Table C31. Comparison of nominal discards (mt) with the length-based model-estimated discards (mt) by stock.

| Year | Northern Stock | | Southern Stock | |
|------|----------------|-----------------------------|----------------|-----------------------------|
| | Nominal | Length-Based Model Estimate | Nominal | Length-Based Model Estimate |
| 1981 | 1324 | 1230 | 2715 | 2680 |
| 1982 | 1460 | 1315 | 3776 | 3709 |
| 1983 | 1353 | 1195 | 3889 | 3824 |
| 1984 | 1327 | 1148 | 3910 | 3844 |
| 1985 | 1270 | 1084 | 2968 | 2938 |
| 1986 | 1189 | 993 | 3389 | 3362 |
| 1987 | 1052 | 906 | 3313 | 3325 |
| 1988 | 897 | 820 | 3462 | 3462 |
| 1989 | 1447 | 1308 | 5006 | 4737 |
| 1990 | 595 | 647 | 4748 | 4441 |
| 1991 | 818 | 531 | 2612 | 2334 |
| 1992 | 726 | 639 | 6343 | 5887 |
| 1993 | 83 | 380 | 5308 | 5509 |
| 1994 | 77 | 115 | 1720 | 1818 |
| 1995 | 63 | 109 | 1329 | 1386 |
| 1996 | 656 | 602 | 380 | 377 |
| 1997 | 125 | 141 | 2422 | 2251 |
| 1998 | 130 | 184 | 740 | 629 |
| 1999 | 468 | 381 | 1060 | 1483 |
| 2000 | 55 | 110 | 250 | 299 |
| 2001 | 135 | 239 | 138 | 136 |
| 2002 | 101 | 116 | 327 | 333 |
| 2003 | 88 | 90 | 345 | 650 |
| 2004 | 57 | 42 | 616 | 546 |
| 2005 | 57 | 37 | 1007 | 1077 |
| 2006 | 181 | 134 | 674 | 677 |
| 2007 | 127 | 112 | 1545 | 1532 |
| 2008 | 59 | 49 | 814 | 896 |
| 2009 | 95 | 74 | 869 | 862 |

Table C32. Estimates of nominal recreational catch (mt) by stock.

| Year | North | South |
|------|-------|-------|
| 1960 | 13.82 | 317 |
| 1961 | 11.94 | 612 |
| 1962 | 6.97 | 892 |
| 1963 | 4.47 | 770 |
| 1964 | 1.05 | 848 |
| 1965 | 0.73 | 634 |
| 1966 | 3.23 | 94 |
| 1967 | 2.10 | 165 |
| 1968 | 2.01 | 575 |
| 1969 | 0.53 | 489 |
| 1970 | 0.95 | 410 |
| 1971 | 1.37 | 287 |
| 1972 | 1.96 | 177 |
| 1973 | 1.32 | 317 |
| 1974 | 3.25 | 191 |
| 1975 | 1.64 | 52 |
| 1976 | 2.38 | 645 |
| 1977 | 3.24 | 750 |
| 1978 | 4.46 | 971 |
| 1979 | 5.55 | 245 |
| 1980 | 3.75 | 144 |
| 1981 | 30.89 | 176 |
| 1982 | 2.94 | 29 |
| 1983 | 0.03 | 135 |
| 1984 | 1.36 | 548 |
| 1985 | 0.00 | 29 |
| 1986 | 0.47 | 205 |
| 1987 | 0.25 | 472 |
| 1988 | 4.10 | 251 |
| 1989 | 0.48 | 436 |
| 1990 | 4.10 | 514 |
| 1991 | 1.60 | 285 |
| 1992 | 0.67 | 194 |
| 1993 | 0.97 | 89 |
| 1994 | 1.70 | 69 |
| 1995 | 1.01 | 45 |
| 1996 | 5.37 | 19 |
| 1997 | 0.83 | 173 |
| 1998 | 0.01 | 53 |
| 1999 | 0.06 | 53 |
| 2000 | 0.06 | 44 |
| 2001 | 0.48 | 24 |
| 2002 | 0.28 | 10 |
| 2003 | 0.13 | 18 |
| 2004 | 0.02 | 10 |
| 2005 | 0.02 | 55 |
| 2006 | 0.05 | 53 |
| 2007 | 0.21 | 20 |
| 2008 | 0.22 | 74 |
| 2009 | 0.43 | 100 |

Table C33. Minimized negative log-likelihood, number of model parameters, AIC_c measures for beta-binomial models with the specified relationship of the calibration factor to length fit to **red hake** catch data from the 2008 *Albatross IV/Henry B. Bigelow* calibration experiment.

| Model | Model | -LL | # parameters | AIC _c | Δ (AIC _c) | AIC _c Weights |
|-------|--------------------------------------|----------|--------------|------------------|-----------------------|--------------------------|
| 1 | Constant | 4791.267 | 2 | 9586.536 | 303.482 | 0 |
| 2 | Survey, S-S, constant | 4787.159 | 4 | 9582.327 | 299.2727 | 0 |
| 3 | S,F,S-S, constant model | 4781.916 | 6 | 9575.853 | 292.7986 | 0 |
| 4 | All stations, logistic model | 4670.32 | 5 | 9350.655 | 67.6003 | 0 |
| 5 | Survey, S-S logistic | 4658.74 | 10 | 9337.532 | 54.4778 | 0 |
| 6 | S, F, S-S, logistic | NA | NA | NA | NA | NA |
| 7 | All stations, double logistic model1 | 4649.882 | 6 | 9311.784 | 28.7294 | 0 |
| 8 | Survey, S-S, double-logistic model2 | 4638.766 | 14 | 9305.632 | 22.5777 | 0 |
| 9 | S,F,S-S, double-logistic model3 | 4619.406 | 22 | 9283.054 | 0 | 1 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

1 Minima for both ascending and descending logistic components were assumed equal to 0 (exp(-100)) to allow variance estimation.

2 Minima for both ascending and descending logistic components were assumed equal to 0 (exp(-100)) for the survey data to allow variance estimation.

3 Minima for both ascending and descending logistic components were assumed equal to 0 (exp(-100)) for the fall data to allow variance estimation.

Table C34. Resulting length-based calibration factors for red hake by season.

| Length | Spring | Fall |
|--------|--------|-------|
| 1 | 2.855 | 0.001 |
| 2 | 2.855 | 0.003 |
| 3 | 2.855 | 0.011 |
| 4 | 2.855 | 0.036 |
| 5 | 2.854 | 0.115 |
| 6 | 2.853 | 0.357 |
| 7 | 2.853 | 0.977 |
| 8 | 2.888 | 2.065 |
| 9 | 3.225 | 3.114 |
| 10 | 5.457 | 3.679 |
| 11 | 12.282 | 3.892 |
| 12 | 12.930 | 3.960 |
| 13 | 7.305 | 3.979 |
| 14 | 4.455 | 3.983 |
| 15 | 3.532 | 3.982 |
| 16 | 3.263 | 3.978 |
| 17 | 3.186 | 3.974 |
| 18 | 3.164 | 3.967 |
| 19 | 3.158 | 3.960 |
| 20 | 3.157 | 3.950 |
| 21 | 3.156 | 3.938 |
| 22 | 3.156 | 3.923 |
| 23 | 3.156 | 3.905 |
| 24 | 3.156 | 3.883 |
| 25 | 3.156 | 3.855 |
| 26 | 3.156 | 3.821 |
| 27 | 3.156 | 3.780 |
| 28 | 3.156 | 3.730 |
| 29 | 3.156 | 3.669 |
| 30 | 3.156 | 3.596 |
| 31 | 3.156 | 3.510 |
| 32 | 3.156 | 3.407 |
| 33 | 3.156 | 3.288 |
| 34 | 3.156 | 3.150 |
| 35 | 3.156 | 2.994 |
| 36 | 3.156 | 2.820 |
| 37 | 3.156 | 2.630 |
| 38 | 3.156 | 2.426 |
| 39 | 3.156 | 2.212 |
| 40 | 3.156 | 1.993 |
| 41 | 3.156 | 1.775 |
| 42 | 3.156 | 1.561 |
| 43 | 3.156 | 1.358 |
| 44 | 3.156 | 1.169 |
| 45 | 3.156 | 0.996 |
| 46 | 3.156 | 0.841 |
| 47 | 3.156 | 0.704 |
| 48 | 3.156 | 0.586 |
| 49 | 3.156 | 0.484 |
| 50 | 3.156 | 0.398 |

Table C35. Swept area abundance and biomass and upper and lower confidence intervals for red hake from the NEFSC fall bottom trawl surveys in the northern management region (strata 20-30, 36-40). Estimates for 2009 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1963 | 23966 | 24.57 | 30.67 | 18.46 | 10371.71 | 14147.00 | 6596.43 |
| 1964 | 23966 | 7.98 | 11.72 | 4.25 | 2811.73 | 3566.44 | 2057.01 |
| 1965 | 23966 | 5.84 | 8.43 | 3.25 | 2603.09 | 3735.70 | 1470.27 |
| 1966 | 23966 | 5.01 | 6.63 | 3.39 | 1976.34 | 2658.73 | 1293.74 |
| 1967 | 23966 | 2.93 | 4.66 | 1.20 | 1045.30 | 1552.01 | 538.59 |
| 1968 | 23966 | 2.13 | 3.22 | 1.03 | 548.65 | 791.52 | 305.57 |
| 1969 | 23966 | 9.24 | 13.43 | 5.06 | 1433.47 | 2098.31 | 768.41 |
| 1970 | 23966 | 9.95 | 14.45 | 5.46 | 1284.32 | 1733.26 | 835.39 |
| 1971 | 23966 | 13.96 | 22.86 | 5.06 | 2851.10 | 3505.24 | 2196.95 |
| 1972 | 23966 | 20.63 | 27.14 | 14.11 | 4998.41 | 6708.55 | 3288.48 |
| 1973 | 23966 | 15.64 | 23.03 | 8.26 | 3342.62 | 4711.89 | 1973.34 |
| 1974 | 23966 | 6.33 | 8.27 | 4.38 | 1444.81 | 1824.41 | 1065.20 |
| 1975 | 23966 | 17.59 | 22.54 | 12.63 | 3771.65 | 4629.08 | 2914.44 |
| 1976 | 23966 | 15.52 | 20.10 | 10.94 | 3631.92 | 4639.99 | 2623.64 |
| 1977 | 23966 | 28.56 | 33.93 | 23.18 | 7458.99 | 8774.34 | 6143.43 |
| 1978 | 23966 | 30.76 | 38.95 | 22.58 | 6543.36 | 8118.70 | 4968.02 |
| 1979 | 23966 | 14.58 | 18.09 | 11.08 | 3900.89 | 4833.21 | 2968.57 |
| 1980 | 23966 | 36.25 | 48.66 | 23.84 | 8042.09 | 10563.87 | 5520.53 |
| 1981 | 23966 | 38.41 | 66.71 | 10.10 | 6007.33 | 7245.86 | 4768.81 |
| 1982 | 23966 | 16.29 | 23.40 | 9.18 | 3575.21 | 5269.10 | 1881.12 |
| 1983 | 23966 | 22.91 | 27.67 | 18.14 | 8804.72 | 10655.03 | 6954.42 |
| 1984 | 23966 | 22.43 | 28.66 | 16.20 | 7578.61 | 9535.90 | 5621.52 |
| 1985 | 23966 | 39.02 | 48.32 | 29.73 | 10130.34 | 11882.86 | 8377.61 |
| 1986 | 23966 | 18.44 | 21.70 | 15.17 | 6077.73 | 7146.58 | 5009.11 |
| 1987 | 23966 | 18.46 | 24.31 | 12.61 | 4818.88 | 5971.17 | 3666.58 |
| 1988 | 23966 | 14.55 | 18.01 | 11.10 | 5443.71 | 6764.40 | 4122.79 |
| 1989 | 23966 | 60.03 | 90.17 | 29.89 | 9995.75 | 13533.09 | 6458.62 |
| 1990 | 23966 | 30.94 | 45.93 | 15.96 | 7104.64 | 9402.16 | 4807.32 |
| 1991 | 23966 | 28.60 | 46.18 | 11.01 | 5473.02 | 7860.85 | 3085.19 |
| 1992 | 23966 | 22.94 | 31.72 | 14.16 | 4898.48 | 6147.07 | 3649.89 |
| 1993 | 23966 | 25.67 | 43.32 | 8.01 | 4259.96 | 6810.62 | 1709.29 |
| 1994 | 23966 | 47.05 | 66.45 | 27.65 | 7904.07 | 11461.53 | 4346.62 |
| 1995 | 23966 | 53.99 | 69.48 | 38.50 | 7009.84 | 8223.76 | 5795.92 |
| 1996 | 23966 | 28.11 | 33.41 | 22.81 | 5421.02 | 6421.82 | 4420.23 |
| 1997 | 23966 | 27.49 | 32.66 | 22.32 | 6242.07 | 7512.91 | 4971.45 |
| 1998 | 23966 | 45.62 | 55.49 | 35.75 | 10361.44 | 12258.82 | 8464.06 |
| 1999 | 23966 | 35.87 | 42.56 | 29.17 | 7107.20 | 8417.63 | 5796.56 |
| 2000 | 23966 | 53.05 | 65.01 | 41.09 | 12117.81 | 14917.34 | 9318.49 |
| 2001 | 23966 | 46.89 | 58.90 | 34.87 | 10453.24 | 12160.18 | 8746.52 |
| 2002 | 23966 | 52.29 | 61.25 | 43.33 | 11498.97 | 13983.95 | 9013.78 |
| 2003 | 23966 | 33.54 | 39.47 | 27.61 | 7593.58 | 9003.30 | 6183.87 |
| 2004 | 23966 | 20.66 | 24.97 | 16.36 | 3328.06 | 4099.26 | 2557.09 |
| 2005 | 23966 | 25.62 | 36.01 | 15.23 | 2485.62 | 3040.69 | 1930.76 |
| 2006 | 23966 | 51.31 | 67.74 | 34.89 | 4679.36 | 5775.16 | 3583.34 |
| 2007 | 23966 | 39.66 | 53.38 | 25.93 | 5184.15 | 6394.86 | 3973.65 |
| 2008 | 23966 | 27.35 | 33.18 | 21.51 | 4087.49 | 5000.55 | 3174.43 |
| 2009 | 23966 | 26.67 | | | 5085.50 | | |

Table C36. Swept area abundance and biomass and upper and lower confidence intervals for red hake from the NEFSC spring bottom trawl surveys in the northern management region (strata 20-30, 36-40). Estimates for 2009 and 2010 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1968 | 23966 | 5.17 | 6.64 | 3.69 | 2434.90 | 3200.74 | 1669.27 |
| 1969 | 23966 | 5.09 | 6.95 | 3.23 | 1367.99 | 2024.27 | 711.92 |
| 1970 | 23966 | 3.12 | 4.13 | 2.11 | 1157.22 | 1629.26 | 684.96 |
| 1971 | 23966 | 5.92 | 7.97 | 3.88 | 1386.60 | 1888.18 | 885.03 |
| 1972 | 23966 | 15.25 | 20.48 | 10.02 | 3338.98 | 4202.18 | 2475.56 |
| 1973 | 23966 | 34.98 | 57.00 | 12.95 | 9225.63 | 13956.99 | 4494.27 |
| 1974 | 23966 | 21.01 | 28.03 | 14.00 | 5201.91 | 6682.23 | 3721.36 |
| 1975 | 23236 | 29.87 | 34.75 | 24.98 | 8824.49 | 10584.21 | 7064.57 |
| 1976 | 23966 | 30.23 | 35.52 | 24.95 | 7213.55 | 9164.86 | 5262.25 |
| 1977 | 23966 | 20.52 | 24.55 | 16.48 | 5682.94 | 7075.11 | 4290.77 |
| 1978 | 23966 | 18.63 | 22.23 | 15.03 | 5501.05 | 6534.16 | 4468.16 |
| 1979 | 23966 | 19.27 | 26.97 | 11.58 | 4366.73 | 5981.66 | 2752.02 |
| 1980 | 23966 | 30.87 | 40.52 | 21.23 | 8308.71 | 10350.74 | 6266.68 |
| 1981 | 23966 | 57.82 | 89.12 | 26.52 | 13594.07 | 19459.11 | 7729.25 |
| 1982 | 23966 | 18.30 | 24.88 | 11.71 | 4551.40 | 5832.94 | 3270.08 |
| 1983 | 23966 | 28.09 | 39.79 | 16.39 | 7913.92 | 11193.62 | 4634.43 |
| 1984 | 23966 | 20.50 | 24.77 | 16.22 | 6381.16 | 7696.30 | 5065.81 |
| 1985 | 23966 | 21.88 | 26.41 | 17.36 | 8373.34 | 10285.05 | 6461.40 |
| 1986 | 23966 | 21.76 | 25.96 | 17.57 | 6974.75 | 8556.93 | 5392.56 |
| 1987 | 23966 | 25.01 | 29.52 | 20.49 | 6293.21 | 7447.65 | 5139.00 |
| 1988 | 23966 | 15.64 | 19.89 | 11.38 | 4271.51 | 5320.67 | 3222.14 |
| 1989 | 23966 | 17.11 | 21.16 | 13.07 | 3533.49 | 4439.27 | 2627.91 |
| 1990 | 23966 | 13.24 | 16.33 | 10.14 | 2848.32 | 3386.05 | 2310.37 |
| 1991 | 23966 | 16.97 | 22.84 | 11.10 | 3469.29 | 4665.45 | 2272.92 |
| 1992 | 23966 | 20.17 | 25.61 | 14.74 | 5351.91 | 7026.96 | 3677.07 |
| 1993 | 23966 | 27.31 | 34.07 | 20.55 | 6042.43 | 7244.79 | 4840.06 |
| 1994 | 23966 | 17.31 | 21.52 | 13.09 | 3403.17 | 4252.04 | 2554.52 |
| 1995 | 23966 | 17.98 | 21.31 | 14.66 | 4221.87 | 5043.56 | 3400.18 |
| 1996 | 23966 | 21.15 | 26.40 | 15.90 | 3834.77 | 4689.63 | 2979.70 |
| 1997 | 23966 | 23.51 | 29.35 | 17.67 | 3875.00 | 4670.16 | 3079.84 |
| 1998 | 23966 | 25.68 | 29.48 | 21.88 | 5389.78 | 6150.70 | 4628.65 |
| 1999 | 23966 | 24.37 | 29.36 | 19.39 | 4969.31 | 6098.28 | 3840.55 |
| 2000 | 23966 | 34.27 | 39.81 | 28.73 | 6818.33 | 7989.24 | 5647.42 |
| 2001 | 23966 | 40.77 | 48.94 | 32.59 | 7659.06 | 8941.89 | 6376.03 |
| 2002 | 23966 | 47.06 | 53.34 | 40.78 | 9542.75 | 10587.41 | 8498.09 |
| 2003 | 23966 | 12.35 | 14.18 | 10.53 | 2131.26 | 2464.22 | 1798.31 |
| 2004 | 23966 | 21.05 | 27.70 | 14.41 | 3791.55 | 4807.96 | 2775.13 |
| 2005 | 23966 | 13.64 | 16.78 | 10.51 | 2347.81 | 2779.41 | 1916.42 |
| 2006 | 23966 | 13.50 | 15.84 | 11.16 | 1952.16 | 2229.91 | 1674.20 |
| 2007 | 23966 | 34.04 | 43.97 | 24.11 | 4399.90 | 5586.86 | 3212.94 |
| 2008 | 23966 | 48.92 | 58.54 | 39.30 | 7464.55 | 9179.19 | 5750.13 |
| 2009 | 23966 | 24.18 | | | 3740.11 | | |
| 2010 | 23966 | 26.82 | | | 4326.30 | | |

Table C37. Swept area abundance and biomass and upper and lower confidence intervals for red hake from the NEFSC shrimp trawl surveys (strata -12).

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1985 | 9675 | 35.44 | 49.81 | 21.07 | 10948.96 | 14769.13 | 7129.02 |
| 1986 | 12022 | 32.38 | 42.23 | 22.53 | 11030.49 | 14657.52 | 7403.75 |
| 1987 | 11595 | 67.48 | 77.05 | 57.91 | 18964.78 | 21544.38 | 16385.47 |
| 1988 | 6574 | 24.32 | 29.15 | 19.49 | 8548.50 | 10208.11 | 6888.73 |
| 1989 | 9167 | 33.32 | 36.84 | 29.81 | 7563.46 | 8300.03 | 6826.89 |
| 1990 | 9167 | 31.60 | 38.40 | 24.81 | 10288.81 | 13032.95 | 7544.67 |
| 1991 | 10401 | 65.96 | 94.78 | 37.15 | 16716.75 | 22794.31 | 10639.44 |
| 1992 | 8983 | 37.89 | 48.26 | 27.51 | 10817.33 | 13639.11 | 7995.54 |
| 1993 | 10629 | 41.20 | 50.45 | 31.94 | 13543.74 | 16983.81 | 10103.66 |
| 1994 | 6574 | 12.27 | 15.06 | 9.48 | 3261.53 | 3887.86 | 2635.35 |
| 1995 | 6147 | 30.89 | 35.60 | 26.17 | 4824.63 | 5546.13 | 4102.97 |
| 1996 | 6574 | 78.94 | 95.44 | 62.45 | 10073.18 | 11794.41 | 8351.94 |
| 1997 | 6147 | 44.64 | 51.67 | 37.61 | 8796.36 | 10312.51 | 7280.20 |
| 1998 | 7241 | 32.15 | 43.13 | 21.17 | 6906.65 | 9766.84 | 4046.63 |
| 1999 | 8195 | 57.68 | 73.67 | 41.69 | 9216.30 | 10608.22 | 7824.18 |
| 2000 | 8195 | 104.36 | 134.79 | 73.93 | 18844.61 | 22430.33 | 15258.89 |
| 2001 | 7749 | 120.34 | 137.57 | 103.11 | 22746.41 | 25921.95 | 19571.07 |
| 2002 | 8500 | 271.96 | 435.27 | 108.64 | 64924.91 | 107687.35 | 22162.48 |
| 2003 | 9167 | 70.30 | 81.75 | 58.85 | 17193.85 | 20037.46 | 14350.25 |
| 2004 | 10788 | 88.93 | 103.62 | 74.23 | 17285.61 | 20197.83 | 14373.12 |
| 2005 | 10788 | 43.79 | 51.34 | 36.24 | 8889.31 | 10395.05 | 7383.58 |
| 2006 | 7241 | 51.81 | 58.55 | 45.06 | 8560.49 | 9769.01 | 7352.15 |
| 2007 | 9370 | 84.43 | 98.02 | 70.84 | 9015.58 | 10069.00 | 7962.39 |
| 2008 | 9370 | 93.14 | 111.49 | 74.79 | 14413.17 | 16642.06 | 12184.05 |
| 2009 | 9370 | 76.77 | 85.81 | 67.73 | 13164.38 | 14861.99 | 11466.77 |

Table C38. Swept area abundance and biomass and upper and lower confidence intervals for red hake from Massachusetts Division of Marine Fisheries fall north survey (strata 18-36).

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1978 | 948 | 4.25 | 4.99 | 3.50 | 1427.07 | 1635.40 | 1218.78 |
| 1979 | 969 | 5.64 | 7.50 | 3.78 | 1292.13 | 1584.58 | 999.66 |
| 1980 | 969 | 8.28 | 15.39 | 1.17 | 1638.04 | 2626.21 | 649.90 |
| 1981 | 969 | 12.42 | 15.87 | 8.97 | 2369.36 | 2823.30 | 1915.45 |
| 1982 | 969 | 7.56 | 9.06 | 6.05 | 1569.36 | 1925.80 | 1212.95 |
| 1983 | 969 | 11.94 | 18.38 | 5.50 | 2789.64 | 4424.86 | 1154.45 |
| 1984 | 969 | 3.89 | 4.78 | 3.01 | 1219.57 | 1518.30 | 920.85 |
| 1985 | 948 | 10.38 | 15.88 | 4.88 | 2494.86 | 3267.44 | 1722.28 |
| 1986 | 969 | 8.13 | 9.48 | 6.77 | 1650.91 | 1979.39 | 1322.44 |
| 1987 | 933 | 2.66 | 3.28 | 2.04 | 446.75 | 554.14 | 339.39 |
| 1988 | 933 | 3.89 | 5.68 | 2.09 | 862.92 | 1168.10 | 557.71 |
| 1989 | 875 | 3.94 | 5.32 | 2.55 | 757.29 | 1178.32 | 336.26 |
| 1990 | 969 | 4.48 | 5.67 | 3.28 | 1309.44 | 1640.06 | 978.82 |
| 1991 | 914 | 10.64 | 12.16 | 9.12 | 1660.65 | 1795.32 | 1525.98 |
| 1992 | 969 | 8.13 | 9.98 | 6.28 | 926.22 | 1117.84 | 734.60 |
| 1993 | 969 | 4.30 | 5.56 | 3.05 | 733.24 | 982.22 | 484.27 |
| 1994 | 969 | 4.73 | 5.84 | 3.61 | 1083.86 | 1364.34 | 803.40 |
| 1995 | 969 | 13.23 | 16.26 | 10.21 | 1486.15 | 1884.23 | 1088.06 |
| 1996 | 969 | 11.03 | 12.87 | 9.18 | 1927.19 | 2423.78 | 1430.62 |
| 1997 | 969 | 4.74 | 5.54 | 3.94 | 912.01 | 1031.10 | 792.89 |
| 1998 | 969 | 8.77 | 10.76 | 6.78 | 1282.00 | 1804.87 | 759.11 |
| 1999 | 969 | 21.98 | 36.00 | 7.95 | 2307.39 | 2780.98 | 1833.80 |
| 2000 | 969 | 21.95 | 28.03 | 15.87 | 3841.93 | 4891.75 | 2792.11 |
| 2001 | 969 | 7.42 | 10.99 | 3.84 | 1313.92 | 1658.77 | 969.07 |
| 2002 | 969 | 12.07 | 21.60 | 2.54 | 2021.49 | 3597.25 | 445.73 |
| 2003 | 969 | 7.19 | 11.66 | 2.72 | 940.88 | 2074.02 | -192.25 |
| 2004 | 969 | 4.48 | 5.78 | 3.18 | 644.10 | 750.72 | 537.51 |
| 2005 | 969 | 4.44 | 5.23 | 3.65 | 617.92 | 735.20 | 500.67 |
| 2006 | 969 | 5.50 | 7.54 | 3.46 | 562.52 | 725.05 | 400.02 |
| 2007 | 948 | 3.01 | 3.92 | 2.09 | 484.03 | 586.89 | 381.18 |
| 2008 | 969 | 5.13 | 6.27 | 3.98 | 673.20 | 851.04 | 495.36 |
| 2009 | 948 | 10.87 | 13.07 | 8.68 | 1232.85 | 1557.19 | 908.51 |

Table C39. Swept area abundance and biomass and upper and lower confidence intervals for red hake from Massachusetts Division of Marine Fisheries spring north survey (strata 18-36).

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1978 | 930 | 0.82 | 0.90 | 0.73 | 87.00 | 112.02 | 62.00 |
| 1979 | 969 | 10.69 | 41.33 | -19.95 | 3887.58 | 15468.92 | -7693.76 |
| 1980 | 969 | 4.56 | 6.58 | 2.54 | 964.61 | 1264.49 | 664.71 |
| 1981 | 969 | 12.70 | 37.99 | -12.60 | 5128.72 | 18529.83 | -8272.38 |
| 1982 | 969 | 2.04 | 4.82 | -0.74 | 712.27 | 1847.95 | -423.43 |
| 1983 | 969 | 3.83 | 4.40 | 3.26 | 928.16 | 1199.55 | 656.80 |
| 1984 | 969 | 2.38 | 3.04 | 1.72 | 444.49 | 587.26 | 301.72 |
| 1985 | 969 | 5.10 | 6.94 | 3.25 | 877.82 | 1349.65 | 405.97 |
| 1986 | 969 | 8.20 | 11.56 | 4.84 | 1270.11 | 1811.98 | 728.22 |
| 1987 | 969 | 2.44 | 3.08 | 1.80 | 582.48 | 950.83 | 214.10 |
| 1988 | 969 | 1.77 | 2.33 | 1.21 | 284.81 | 359.64 | 210.01 |
| 1989 | 969 | 3.61 | 4.54 | 2.67 | 454.01 | 588.80 | 319.20 |
| 1990 | 969 | 1.58 | 2.34 | 0.82 | 362.76 | 479.69 | 245.84 |
| 1991 | 969 | 3.42 | 6.94 | -0.10 | 332.86 | 444.26 | 221.45 |
| 1992 | 969 | 3.85 | 5.47 | 2.22 | 335.81 | 440.23 | 231.35 |
| 1993 | 969 | 0.74 | 0.92 | 0.56 | 107.32 | 152.07 | 62.58 |
| 1994 | 969 | 2.24 | 4.02 | 0.45 | 277.28 | 390.53 | 164.04 |
| 1995 | 969 | 4.06 | 5.08 | 3.05 | 246.19 | 298.82 | 193.54 |
| 1996 | 969 | 3.80 | 6.93 | 0.67 | 150.48 | 203.54 | 97.42 |
| 1997 | 969 | 6.18 | 7.53 | 4.84 | 832.25 | 1065.59 | 598.90 |
| 1998 | 969 | 3.53 | 5.19 | 1.87 | 719.96 | 1124.85 | 315.07 |
| 1999 | 969 | 4.61 | 6.68 | 2.53 | 721.42 | 1145.15 | 297.71 |
| 2000 | 969 | 7.14 | 8.86 | 5.41 | 1414.04 | 1904.64 | 923.42 |
| 2001 | 969 | 4.15 | 6.59 | 1.70 | 888.71 | 1929.66 | -152.25 |
| 2002 | 969 | 3.34 | 4.65 | 2.03 | 635.43 | 783.09 | 487.75 |
| 2003 | 969 | 1.12 | 1.36 | 0.88 | 142.12 | 188.40 | 95.81 |
| 2004 | 969 | 0.86 | 1.10 | 0.62 | 75.08 | 96.26 | 53.89 |
| 2005 | 969 | 4.96 | 7.61 | 2.31 | 149.57 | 210.77 | 88.38 |
| 2006 | 969 | 5.18 | 6.95 | 3.40 | 347.14 | 457.11 | 237.17 |
| 2007 | 969 | 1.17 | 1.62 | 0.72 | 133.40 | 215.83 | 50.97 |
| 2008 | 969 | 0.98 | 1.29 | 0.66 | 180.94 | 263.35 | 98.53 |
| 2009 | 969 | 3.16 | 4.92 | 1.39 | 244.66 | 358.43 | 130.88 |

Table C40. Stratified mean number and weight per tow (kg) for red hake from the fall and spring Maine-New Hampshire state surveys, 2000-2009.

| | MENH Fall | MENH Fall | MENH Spring | MENH Spring |
|-------------|---------------------------------------|--|---------------------------------------|--|
| Year | Stratified Mean Number/Tow | Stratified Mean Weight/Tow (Kg) | Stratified Mean Number/Tow | Stratified Mean Weight/Tow (Kg) |
| 2000 | 25.78 | 2.70 | | |
| 2001 | 31.33 | 4.34 | 5.30 | 0.22 |
| 2002 | 17.92 | 2.51 | 9.08 | 1.00 |
| 2003 | 29.38 | 5.43 | 9.45 | 0.78 |
| 2004 | 15.30 | 2.91 | 3.21 | 0.31 |
| 2005 | 13.41 | 1.37 | 6.74 | 0.71 |
| 2006 | 11.18 | 1.37 | 2.56 | 0.10 |
| 2007 | 25.86 | 3.35 | 9.70 | 0.46 |
| 2008 | 35.07 | 4.16 | 11.82 | 0.57 |
| 2009 | 30.43 | 3.41 | 23.89 | 0.78 |

Table C41. Swept area abundance and biomass and upper and lower confidence intervals for red hake from the NEFSC fall bottom trawl surveys in the southern management region (strata 1-19, 61-76). Estimates for 2009 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1967 | 37081 | 26.06 | 36.15 | 15.98 | 5601.55 | 7555.92 | 3647.51 |
| 1968 | 37081 | 49.14 | 62.91 | 35.37 | 10172.78 | 13136.94 | 7208.28 |
| 1969 | 37081 | 58.22 | 75.34 | 41.10 | 11761.30 | 15180.03 | 8342.56 |
| 1970 | 37081 | 50.23 | 60.59 | 39.88 | 7471.49 | 8940.16 | 6002.49 |
| 1971 | 37081 | 57.72 | 70.61 | 44.83 | 8502.47 | 10424.73 | 6579.89 |
| 1972 | 37081 | 84.47 | 112.47 | 56.47 | 12739.31 | 16307.69 | 9170.59 |
| 1973 | 37081 | 63.56 | 88.28 | 38.84 | 7785.35 | 10573.38 | 4997.33 |
| 1974 | 37081 | 73.00 | 92.27 | 53.73 | 3022.43 | 4394.76 | 1650.10 |
| 1975 | 37081 | 112.16 | 142.02 | 82.30 | 16169.96 | 20158.49 | 12181.11 |
| 1976 | 37081 | 66.05 | 82.64 | 49.45 | 11047.16 | 13842.14 | 8252.18 |
| 1977 | 37081 | 42.09 | 53.86 | 30.33 | 8319.72 | 10941.54 | 5697.56 |
| 1978 | 37081 | 38.82 | 47.96 | 29.68 | 6219.68 | 7779.73 | 4659.62 |
| 1979 | 37081 | 56.00 | 67.10 | 44.90 | 7879.71 | 9766.21 | 5993.55 |
| 1980 | 37021 | 80.00 | 100.65 | 59.36 | 10359.93 | 13498.78 | 7220.75 |
| 1981 | 37081 | 61.95 | 76.52 | 47.38 | 7676.10 | 9955.92 | 5396.28 |
| 1982 | 37081 | 51.83 | 68.60 | 35.06 | 10247.93 | 13423.98 | 7071.88 |
| 1983 | 37081 | 97.56 | 134.36 | 60.77 | 20001.56 | 27804.79 | 12198.32 |
| 1984 | 36995 | 25.21 | 38.27 | 12.15 | 3904.95 | 6048.02 | 1762.22 |
| 1985 | 37081 | 134.25 | 200.35 | 68.14 | 6582.54 | 9071.60 | 4093.81 |
| 1986 | 37081 | 24.73 | 39.22 | 10.23 | 3171.75 | 5036.73 | 1306.77 |
| 1987 | 37029 | 18.05 | 25.93 | 10.16 | 2511.36 | 3399.06 | 1623.66 |
| 1988 | 37081 | 26.58 | 42.51 | 10.65 | 2549.65 | 4063.68 | 1035.62 |
| 1989 | 37081 | 31.46 | 47.09 | 15.84 | 3908.73 | 5739.28 | 2077.86 |
| 1990 | 36976 | 33.54 | 51.72 | 15.36 | 4017.51 | 5958.75 | 2075.94 |
| 1991 | 37081 | 38.12 | 59.42 | 16.82 | 5324.43 | 8306.81 | 2342.06 |
| 1992 | 36924 | 14.59 | 18.97 | 10.21 | 2075.33 | 2756.77 | 1393.88 |
| 1993 | 37021 | 32.90 | 42.13 | 23.67 | 2986.14 | 4111.64 | 1860.64 |
| 1994 | 37081 | 33.81 | 54.63 | 13.00 | 2658.24 | 4003.09 | 1313.73 |
| 1995 | 37081 | 30.91 | 44.75 | 17.07 | 1537.87 | 2120.24 | 955.83 |
| 1996 | 37081 | 10.93 | 15.56 | 6.30 | 1305.78 | 1885.83 | 726.06 |
| 1997 | 37081 | 13.39 | 22.15 | 4.64 | 1980.19 | 3753.79 | 206.93 |
| 1998 | 37081 | 13.13 | 16.54 | 9.71 | 1655.73 | 2258.96 | 1052.50 |
| 1999 | 37081 | 59.12 | 106.03 | 12.21 | 1787.17 | 3196.91 | 377.43 |
| 2000 | 37081 | 8.70 | 11.60 | 5.81 | 1576.94 | 2400.00 | 753.54 |
| 2001 | 37021 | 37.18 | 56.03 | 18.34 | 1822.62 | 2399.75 | 1245.49 |
| 2002 | 37081 | 28.33 | 35.91 | 20.76 | 1990.79 | 2480.79 | 1500.46 |
| 2003 | 37021 | 22.49 | 28.80 | 16.17 | 1833.20 | 2463.22 | 1202.85 |
| 2004 | 37081 | 21.69 | 26.56 | 16.82 | 1326.64 | 1628.25 | 1025.02 |
| 2005 | 36916 | 34.51 | 48.16 | 20.87 | 2089.71 | 2948.34 | 1231.08 |
| 2006 | 37029 | 33.26 | 45.18 | 21.33 | 2704.44 | 4703.67 | 705.53 |
| 2007 | 37081 | 46.75 | 63.43 | 30.08 | 1821.94 | 2532.76 | 1111.11 |
| 2008 | 37081 | 22.36 | 31.37 | 13.35 | 2408.61 | 3332.99 | 1484.23 |
| 2009 | 37081 | 30.33 | | | 3368.29 | | |

Table C42. Swept area abundance and biomass and upper and lower confidence intervals for red hake from the NEFSC spring bottom trawl surveys in the southern management region (strata 1-19, 61-76). Estimates for 2009 and 2010 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1968 | 37081 | 20.66 | 28.71 | 12.62 | 4255.38 | 5837.28 | 2673.80 |
| 1969 | 37081 | 18.89 | 23.77 | 14.01 | 3582.95 | 4552.35 | 2613.55 |
| 1970 | 37081 | 31.48 | 37.24 | 25.72 | 5704.85 | 6855.02 | 4554.67 |
| 1971 | 37081 | 80.99 | 114.98 | 47.01 | 11549.41 | 15652.82 | 7446.33 |
| 1972 | 37081 | 59.23 | 87.88 | 30.57 | 11885.12 | 17216.18 | 6553.74 |
| 1973 | 37081 | 70.98 | 87.06 | 54.90 | 13218.05 | 16203.07 | 10232.70 |
| 1974 | 37081 | 46.87 | 58.56 | 35.17 | 9395.07 | 11808.31 | 6982.15 |
| 1975 | 35374 | 42.63 | 63.22 | 22.04 | 10039.58 | 14482.81 | 5596.04 |
| 1976 | 37081 | 78.15 | 136.55 | 19.75 | 17592.95 | 33299.40 | 1886.16 |
| 1977 | 37081 | 39.93 | 48.93 | 30.94 | 7616.17 | 9202.71 | 6029.64 |
| 1978 | 37081 | 110.37 | 151.64 | 69.09 | 25319.70 | 32988.18 | 17651.55 |
| 1979 | 37081 | 28.72 | 40.72 | 16.72 | 5011.56 | 6798.40 | 3224.39 |
| 1980 | 37081 | 48.96 | 60.50 | 37.41 | 7878.72 | 10112.85 | 5644.59 |
| 1981 | 36909 | 91.24 | 127.92 | 54.56 | 15200.58 | 20687.49 | 9713.66 |
| 1982 | 37081 | 58.50 | 80.31 | 36.69 | 11065.04 | 16856.63 | 5273.45 |
| 1983 | 37081 | 40.04 | 53.42 | 26.67 | 7306.28 | 9845.34 | 4767.23 |
| 1984 | 37081 | 24.32 | 38.39 | 10.25 | 4406.02 | 7141.40 | 1670.30 |
| 1985 | 37081 | 23.49 | 31.18 | 15.79 | 4609.63 | 6232.26 | 2986.68 |
| 1986 | 37081 | 37.45 | 53.45 | 21.46 | 5740.60 | 8417.06 | 3064.15 |
| 1987 | 37081 | 14.65 | 21.47 | 7.84 | 2905.23 | 4190.82 | 1619.31 |
| 1988 | 36976 | 20.14 | 27.48 | 12.81 | 3320.91 | 4619.03 | 2022.79 |
| 1989 | 37081 | 12.98 | 16.97 | 8.98 | 1613.35 | 2213.27 | 1013.11 |
| 1990 | 36909 | 15.85 | 21.15 | 10.55 | 2329.55 | 3095.08 | 1563.69 |
| 1991 | 37081 | 15.75 | 20.86 | 10.64 | 2022.24 | 2693.67 | 1351.14 |
| 1992 | 36845 | 10.64 | 15.28 | 6.00 | 1529.07 | 2395.25 | 662.88 |
| 1993 | 36845 | 10.91 | 13.22 | 8.60 | 1393.20 | 1846.20 | 940.53 |
| 1994 | 36905 | 19.58 | 30.66 | 8.50 | 2223.20 | 3280.92 | 1165.14 |
| 1995 | 37081 | 10.89 | 14.31 | 7.46 | 1707.05 | 2250.68 | 1163.09 |
| 1996 | 37081 | 11.31 | 19.19 | 3.43 | 1499.46 | 2899.93 | 98.99 |
| 1997 | 36800 | 25.60 | 46.86 | 4.34 | 3814.39 | 6946.99 | 681.46 |
| 1998 | 37021 | 6.08 | 7.09 | 5.08 | 706.04 | 845.86 | 566.55 |
| 1999 | 37081 | 10.71 | 14.49 | 6.92 | 1505.42 | 2082.16 | 928.68 |
| 2000 | 37081 | 11.41 | 14.52 | 8.30 | 1400.14 | 1958.34 | 841.94 |
| 2001 | 37081 | 13.38 | 16.86 | 9.89 | 2125.20 | 2758.89 | 1491.85 |
| 2002 | 37081 | 12.25 | 18.38 | 6.11 | 1794.46 | 2797.30 | 791.61 |
| 2003 | 37081 | 6.18 | 8.15 | 4.21 | 680.70 | 874.71 | 486.69 |
| 2004 | 37081 | 5.74 | 8.66 | 2.83 | 511.19 | 818.43 | 203.95 |
| 2005 | 37081 | 9.65 | 12.01 | 7.29 | 1245.19 | 1587.53 | 902.86 |
| 2006 | 37021 | 10.92 | 13.85 | 7.98 | 1256.07 | 1712.88 | 799.59 |
| 2007 | 37081 | 25.33 | 33.99 | 16.68 | 2838.68 | 3710.75 | 1966.29 |
| 2008 | 37081 | 13.73 | 19.38 | 8.07 | 1567.33 | 2233.80 | 900.54 |
| 2009 | 36995 | 29.84 | | | 4433.65 | | |
| 2010 | 37081 | 26.45 | | | 3459.51 | | |

Table C43. Swept area abundance and biomass and upper and lower confidence intervals for red hake from the NEFSC winter flatfish surveys in the southern management region (strata 1-3, 5-7, 9-11, 13-14, 61-63, 65-67, 69-71, 73-75).

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|-------------|------------------------|--|----------------------------|----------------------------|--------------------------------|----------------------------|----------------------------|
| 1992 | 30014 | 107.45 | 174.39 | 40.51 | 15311.03 | 26314.03 | 4307.81 |
| 1993 | 29928 | 126.71 | 196.99 | 56.44 | 18482.71 | 29030.39 | 7935.03 |
| 1994 | 30014 | 73.83 | 123.70 | 23.95 | 6571.00 | 10607.77 | 2534.46 |
| 1995 | 30014 | 17.00 | 28.11 | 5.89 | 1711.94 | 2676.74 | 746.91 |
| 1996 | 30014 | 5.90 | 7.71 | 4.10 | 768.91 | 1061.95 | 475.87 |
| 1997 | 30014 | 23.91 | 35.89 | 11.94 | 2674.91 | 4014.54 | 1335.28 |
| 1998 | 30014 | 13.92 | 17.22 | 10.61 | 1399.43 | 1903.25 | 895.61 |
| 1999 | 30014 | 35.79 | 58.39 | 13.19 | 5108.57 | 8330.83 | 1886.07 |
| 2000 | 30014 | 45.65 | 58.99 | 32.31 | 4298.88 | 6195.49 | 2402.04 |
| 2001 | 30014 | 31.22 | 41.37 | 21.07 | 3999.65 | 5543.20 | 2456.34 |
| 2002 | 30014 | 15.43 | 22.01 | 8.85 | 1278.69 | 1834.29 | 723.09 |
| 2003 | 26984 | 7.46 | 11.97 | 2.94 | 159.23 | 237.91 | 80.54 |
| 2004 | 30014 | 57.02 | 96.82 | 17.23 | 5327.60 | 9446.16 | 1208.81 |
| 2005 | 29358 | 7.65 | 9.52 | 5.79 | 315.54 | 425.35 | 205.95 |
| 2006 | 30014 | 20.56 | 25.70 | 15.41 | 1490.39 | 2164.44 | 816.33 |
| 2007 | 26984 | 5.44 | 7.06 | 3.83 | 263.66 | 360.89 | 166.44 |

Table C44. Swept area abundance and biomass and upper and lower confidence intervals for red hake from Massachusetts Division of Marine Fisheries fall south survey (strat 11-17).

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1978 | 864 | 0.08 | 0.10 | 0.06 | 13.46 | 20.06 | 6.83 |
| 1979 | 864 | 0.13 | 0.25 | 0.01 | 6.54 | 17.86 | -4.76 |
| 1980 | 864 | 0.02 | 0.03 | 0.00 | 2.36 | 4.94 | -0.20 |
| 1981 | 864 | 0.05 | 0.06 | 0.04 | 2.34 | 6.33 | -1.66 |
| 1982 | 864 | 0.23 | 0.37 | 0.08 | 26.10 | 41.76 | 10.47 |
| 1983 | 864 | 0.01 | 0.02 | -0.01 | 0.52 | 2.11 | -1.08 |
| 1984 | 864 | 0.04 | 0.15 | -0.07 | 5.66 | 22.42 | -11.10 |
| 1985 | 864 | 0.03 | 0.06 | 0.01 | 0.09 | 0.18 | 0.02 |
| 1986 | 864 | 0.44 | 0.86 | 0.01 | 14.40 | 27.77 | 1.01 |
| 1987 | 864 | 0.04 | 0.06 | 0.01 | 0.81 | 1.62 | 0.02 |
| 1988 | 864 | 0.02 | | | 2.88 | | |
| 1989 | 864 | 0.12 | 0.33 | -0.08 | 14.71 | 45.24 | -15.79 |
| 1990 | 864 | 0.20 | 0.42 | -0.02 | 1.57 | 3.14 | 0.00 |
| 1991 | 864 | 0.29 | 0.53 | 0.05 | 2.34 | 3.84 | 0.83 |
| 1992 | 864 | 0.01 | 0.02 | 0.00 | 0.58 | 2.16 | -0.99 |
| 1993 | 864 | 0.20 | 0.51 | -0.11 | 1.42 | 3.53 | -0.72 |
| 1994 | 864 | 0.12 | 0.33 | -0.08 | 7.97 | 31.07 | -15.10 |
| 1995 | 864 | 1.03 | 1.66 | 0.40 | 9.39 | 13.14 | 5.64 |
| 1996 | 864 | 0.04 | 0.07 | 0.02 | 7.10 | 12.87 | 1.33 |
| 1997 | 864 | 0.05 | 0.10 | 0.00 | 2.02 | 4.13 | -0.09 |
| 1998 | 864 | 0.04 | 0.07 | 0.02 | 0.34 | 0.70 | 0.00 |
| 1999 | 864 | 1.38 | 2.69 | 0.07 | 13.59 | 22.49 | 4.69 |
| 2000 | 864 | 0.03 | | | 2.63 | 10.54 | -5.26 |
| 2001 | 864 | 0.00 | 0.01 | -0.01 | 0.27 | 1.06 | -0.54 |
| 2002 | 864 | 0.21 | 0.44 | -0.03 | 0.61 | 1.17 | 0.02 |
| 2003 | 864 | 0.13 | 0.24 | 0.02 | 0.29 | 0.56 | 0.02 |
| 2004 | 864 | 0.12 | 0.21 | 0.04 | 0.22 | 0.43 | 0.02 |
| 2005 | 864 | 0.32 | 0.69 | -0.04 | 1.03 | 2.43 | -0.38 |
| 2006 | 864 | 0.94 | 1.69 | 0.20 | 2.25 | 3.80 | 0.70 |
| 2007 | 864 | 0.19 | 0.36 | 0.01 | 1.06 | 2.00 | 0.11 |
| 2008 | 864 | 0.24 | 0.52 | -0.03 | 7.64 | 30.84 | -15.57 |
| 2009 | 864 | 0.17 | 0.34 | 0.01 | 1.64 | 2.94 | 0.34 |

Table C45. Swept area abundance and biomass and upper and lower confidence intervals for red hake from Massachusetts Division of Marine Fisheries spring south survey (strata 11-17).

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1978 | 864 | 0.11 | 0.18 | 0.04 | 5.10 | 9.82 | 0.38 |
| 1979 | 864 | 6.22 | 11.71 | 0.73 | 2093.08 | 3843.67 | 342.50 |
| 1980 | 864 | 0.86 | 1.47 | 0.24 | 230.34 | 506.33 | -45.67 |
| 1981 | 864 | 1.63 | 2.90 | 0.35 | 565.30 | 1054.65 | 75.97 |
| 1982 | 864 | 1.52 | 3.77 | -0.74 | 696.33 | 1913.68 | -521.02 |
| 1983 | 864 | 2.84 | 5.63 | 0.05 | 592.08 | 1209.58 | -25.43 |
| 1984 | 864 | 2.12 | 4.11 | 0.12 | 420.52 | 794.07 | 46.97 |
| 1985 | 864 | 0.57 | 0.97 | 0.17 | 71.41 | 133.01 | 9.84 |
| 1986 | 864 | 0.64 | 0.74 | 0.53 | 76.06 | 111.08 | 41.06 |
| 1987 | 864 | 5.08 | 7.08 | 3.08 | 893.83 | 1423.59 | 364.07 |
| 1988 | 864 | 0.15 | 0.29 | 0.00 | 18.67 | 35.85 | 1.51 |
| 1989 | 864 | 2.14 | 3.17 | 1.11 | 581.54 | 924.67 | 238.38 |
| 1990 | 864 | 2.60 | 4.82 | 0.37 | 753.09 | 1514.12 | -7.91 |
| 1991 | 864 | 0.01 | 0.02 | 0.00 | 1.17 | 2.67 | -0.36 |
| 1992 | 864 | 1.18 | 1.77 | 0.58 | 262.08 | 509.97 | 14.17 |
| 1993 | 864 | 0.29 | 0.44 | 0.14 | 35.58 | 46.63 | 24.53 |
| 1994 | 864 | 4.33 | 7.92 | 0.74 | 757.18 | 1316.64 | 197.70 |
| 1995 | 864 | 1.86 | 5.92 | -2.20 | 86.19 | 320.65 | -148.26 |
| 1996 | 864 | 0.34 | 0.60 | 0.09 | 29.97 | 61.06 | -1.12 |
| 1997 | 864 | 1.72 | 2.76 | 0.69 | 230.68 | 364.54 | 96.82 |
| 1998 | 864 | 0.28 | 0.87 | -0.30 | 28.35 | 111.46 | -54.74 |
| 1999 | 864 | 0.59 | 2.15 | -0.98 | 100.68 | 381.75 | -180.41 |
| 2000 | 864 | 0.71 | 1.94 | -0.52 | 210.33 | 579.11 | -158.46 |
| 2001 | 864 | 0.25 | 0.69 | -0.20 | 40.70 | 160.66 | -79.23 |
| 2002 | 864 | 0.40 | 1.47 | -0.66 | 124.34 | 497.21 | -248.54 |
| 2003 | 864 | 0.04 | 0.09 | -0.02 | 0.36 | 1.08 | -0.34 |
| 2004 | 864 | 0.20 | 0.38 | 0.03 | 1.06 | 2.04 | 0.09 |
| 2005 | 864 | 1.40 | 1.76 | 1.04 | 42.16 | 98.91 | -14.60 |
| 2006 | 864 | 0.11 | 0.15 | 0.06 | 3.35 | 5.30 | 1.42 |
| 2007 | 864 | 0.35 | 0.61 | 0.08 | 36.08 | 67.75 | 4.40 |
| 2008 | 864 | 0.14 | 0.24 | 0.05 | 1.80 | 4.31 | -0.74 |
| 2009 | 864 | 0.72 | 1.03 | 0.41 | 6.92 | 20.80 | -6.94 |

Table C46. Stratified mean number and weight (kg) per tow for red hake from Rhode Island and Connecticut state surveys in the southern management area for both fall and spring.

| Year | RI Fall | RI Fall | RI Spring | RI Spring | CT Fall | CT Fall | CT Spring | CT Spring |
|------|----------------------------|---------------------------------|----------------------------|---------------------------------|----------------------------|---------------------------------|----------------------------|---------------------------------|
| | Stratified Mean Number/Tow | Stratified Mean Weight/Tow (Kg) | Stratified Mean Number/Tow | Stratified Mean Weight/Tow (Kg) | Stratified Mean Number/Tow | Stratified Mean Weight/Tow (Kg) | Stratified Mean Number/Tow | Stratified Mean Weight/Tow (Kg) |
| 1979 | 2.91 | 0.22 | 5.72 | 0.55 | | | | |
| 1980 | 0.71 | 0.09 | 8.75 | 0.48 | | | | |
| 1981 | 2.60 | 0.24 | 1.43 | 0.24 | | | | |
| 1982 | 1.84 | 0.15 | 1.37 | 0.07 | | | | |
| 1983 | 0.61 | 0.09 | 8.00 | 1.14 | | | | |
| 1984 | 3.00 | 0.43 | 14.26 | 2.84 | 0.74 | | 15.04 | |
| 1985 | 3.16 | 0.22 | 2.67 | 0.15 | 0.33 | | 3.02 | |
| 1986 | 12.47 | 0.75 | 19.25 | 1.37 | 1.00 | | 4.67 | |
| 1987 | 2.24 | 0.26 | 34.34 | 1.77 | 0.37 | | 3.84 | |
| 1988 | 1.93 | 0.40 | 9.42 | 1.06 | 0.75 | | 3.64 | |
| 1989 | 2.91 | 0.34 | 12.57 | 0.87 | 1.14 | | 13.12 | |
| 1990 | 0.36 | 0.03 | 2.12 | 0.19 | 0.44 | | 4.75 | |
| 1991 | 0.00 | 0.00 | 9.30 | 0.63 | 0.33 | | 4.35 | |
| 1992 | 0.32 | 0.04 | 0.17 | 0.00 | 0.39 | 0.11 | 4.83 | 0.78 |
| 1993 | 0.54 | 0.05 | 0.83 | 0.01 | 1.81 | 0.34 | 6.00 | 0.85 |
| 1994 | 0.56 | 0.07 | 0.39 | 0.04 | 0.59 | 0.19 | 0.89 | 0.14 |
| 1995 | 0.20 | 0.02 | 7.39 | 0.11 | 0.20 | 0.04 | 4.12 | 0.66 |
| 1996 | 0.58 | 0.10 | 2.01 | 0.13 | 1.62 | 0.48 | 1.49 | 0.21 |
| 1997 | 3.35 | 0.23 | 16.87 | 1.79 | 0.89 | 0.18 | 1.41 | 0.33 |
| 1998 | 0.15 | 0.02 | 2.39 | 0.25 | 0.53 | 0.10 | 6.28 | 0.94 |
| 1999 | 0.26 | 0.02 | 4.15 | 0.26 | 0.29 | 0.06 | 7.21 | 1.05 |
| 2000 | 0.46 | 0.06 | 5.87 | 0.40 | 1.20 | 0.32 | 4.01 | 0.59 |
| 2001 | 0.31 | 0.03 | 0.82 | 0.18 | 0.41 | 0.07 | 2.64 | 0.45 |
| 2002 | 0.10 | 0.01 | 1.04 | 0.27 | 0.15 | 0.02 | 5.11 | 0.96 |
| 2003 | 1.45 | 0.19 | 4.20 | 0.04 | 0.73 | 0.19 | 1.18 | 0.13 |
| 2004 | 1.33 | 0.09 | 2.04 | 0.08 | 0.76 | 0.14 | 1.37 | 0.20 |
| 2005 | 2.84 | 0.20 | 1.51 | 0.01 | 0.45 | 0.10 | 1.06 | 0.22 |
| 2006 | 0.49 | 0.03 | 1.51 | 0.10 | 0.33 | 0.06 | 1.30 | 0.25 |
| 2007 | 0.14 | 0.01 | 0.60 | 0.02 | 0.54 | 0.12 | 3.85 | 0.67 |
| 2008 | 0.33 | 0.03 | 1.01 | 0.01 | 0.41 | 0.09 | 3.37 | 0.61 |
| 2009 | 0.63 | 0.07 | 0.43 | 0.02 | 0.90 | 0.13 | 1.48 | 0.23 |
| 2010 | | | 1.03 | 0.02 | | | | |

Table C47. Swept area abundance and biomass and upper and lower confidence intervals for red hake from the NEFSC fall bottom trawl surveys in the northern and southern management regions combined (strata 1-30, 36-40, 61-76). Estimates for 2009 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1967 | 61047 | 29.00 | 39.18 | 18.81 | 6647.04 | 8648.51 | 4645.57 |
| 1968 | 61047 | 51.27 | 65.07 | 37.47 | 10721.38 | 13692.52 | 7750.24 |
| 1969 | 61047 | 67.46 | 84.94 | 49.98 | 13194.87 | 16659.84 | 9729.37 |
| 1970 | 61047 | 60.19 | 71.33 | 49.04 | 8755.88 | 10278.79 | 7232.98 |
| 1971 | 61047 | 71.68 | 86.86 | 56.50 | 11353.65 | 13375.29 | 9332.02 |
| 1972 | 61047 | 105.10 | 133.74 | 76.46 | 17737.42 | 21625.90 | 13849.49 |
| 1973 | 61047 | 79.20 | 104.73 | 53.67 | 11128.00 | 14159.09 | 8096.36 |
| 1974 | 61047 | 79.32 | 98.67 | 59.97 | 4467.33 | 5882.31 | 3052.35 |
| 1975 | 61047 | 129.75 | 159.92 | 99.57 | 19941.66 | 24006.73 | 15876.58 |
| 1976 | 61047 | 81.57 | 98.70 | 64.44 | 14679.08 | 17627.87 | 11730.29 |
| 1977 | 61047 | 70.65 | 83.41 | 57.88 | 15778.47 | 18667.30 | 12889.64 |
| 1978 | 61047 | 69.59 | 81.72 | 57.45 | 12763.18 | 14942.89 | 10582.93 |
| 1979 | 61047 | 70.58 | 82.17 | 58.99 | 11780.98 | 13856.58 | 9704.84 |
| 1980 | 60987 | 116.25 | 139.67 | 92.83 | 18401.74 | 22294.02 | 14510.01 |
| 1981 | 61047 | 100.36 | 130.20 | 70.51 | 13683.25 | 16244.50 | 11122.55 |
| 1982 | 61047 | 68.12 | 85.98 | 50.27 | 13822.79 | 17331.90 | 10314.22 |
| 1983 | 61047 | 120.47 | 157.50 | 83.44 | 28806.55 | 36780.27 | 20832.29 |
| 1984 | 60961 | 47.64 | 61.86 | 33.42 | 11483.53 | 14312.23 | 8655.37 |
| 1985 | 61047 | 173.27 | 239.86 | 106.68 | 16712.71 | 19717.64 | 13708.32 |
| 1986 | 61047 | 43.16 | 57.94 | 28.38 | 9249.71 | 11359.65 | 7139.77 |
| 1987 | 60995 | 36.51 | 45.89 | 27.12 | 7330.29 | 8736.44 | 5924.14 |
| 1988 | 61047 | 41.13 | 57.30 | 24.96 | 7993.34 | 9917.96 | 6068.73 |
| 1989 | 61047 | 91.49 | 123.91 | 59.07 | 13904.54 | 17744.51 | 10064.58 |
| 1990 | 60942 | 64.48 | 86.81 | 42.15 | 11121.92 | 14013.40 | 8230.98 |
| 1991 | 61047 | 66.72 | 92.93 | 40.50 | 10797.14 | 14428.89 | 7165.94 |
| 1992 | 60890 | 37.53 | 47.01 | 28.04 | 6973.54 | 8371.83 | 5575.78 |
| 1993 | 60987 | 58.57 | 77.64 | 39.50 | 7246.02 | 9938.70 | 4553.33 |
| 1994 | 61047 | 80.86 | 108.07 | 53.66 | 10562.77 | 14247.39 | 6877.60 |
| 1995 | 61047 | 84.90 | 104.96 | 64.83 | 8547.67 | 9883.07 | 7212.81 |
| 1996 | 61047 | 39.04 | 45.92 | 32.16 | 6727.16 | 7864.16 | 5589.62 |
| 1997 | 61047 | 40.88 | 50.73 | 31.04 | 8222.27 | 10322.39 | 6122.69 |
| 1998 | 61047 | 58.75 | 69.07 | 48.42 | 12016.99 | 13987.39 | 10047.14 |
| 1999 | 61047 | 94.99 | 142.25 | 47.72 | 8894.33 | 10539.33 | 7249.33 |
| 2000 | 61047 | 61.75 | 73.99 | 49.51 | 13694.70 | 16591.70 | 10797.69 |
| 2001 | 60987 | 84.07 | 105.60 | 62.55 | 12275.81 | 14064.04 | 10487.59 |
| 2002 | 61047 | 80.63 | 92.14 | 69.11 | 13489.75 | 16000.85 | 10978.10 |
| 2003 | 60987 | 56.03 | 64.53 | 47.53 | 9426.85 | 10949.34 | 7903.81 |
| 2004 | 61047 | 42.35 | 48.75 | 35.96 | 4654.83 | 5471.34 | 3838.33 |
| 2005 | 60882 | 60.14 | 76.76 | 43.52 | 4575.39 | 5582.66 | 3568.66 |
| 2006 | 60995 | 84.57 | 104.27 | 64.87 | 7383.66 | 9593.64 | 5174.23 |
| 2007 | 61047 | 86.41 | 107.40 | 65.42 | 7006.23 | 8383.61 | 5628.32 |
| 2008 | 61047 | 49.71 | 60.13 | 39.29 | 6496.05 | 7751.88 | 5240.23 |
| 2009 | 61047 | 57.00 | | | 8453.82 | | |

Table C48. Swept area abundance and biomass and upper and lower confidence intervals for red hake from the NEFSC spring bottom trawl surveys in the northern and southern management regions combined (strata 1-30, 36-40, 61-76). Estimates for 2009 and 2010 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Swept Area (nm) | Swept Area Abundance (millions) | Swept Area Upper CI | Swept Area Lower CI | Swept Area Biomass (mt) | Swept Area Upper CI | Swept Area Lower CI |
|------|-----------------|---------------------------------|---------------------|---------------------|-------------------------|---------------------|---------------------|
| 1968 | 61047 | 25.83 | 33.98 | 17.68 | 6690.64 | 8420.13 | 4960.61 |
| 1969 | 61047 | 23.98 | 29.15 | 18.82 | 4950.80 | 6104.15 | 3798.00 |
| 1970 | 61047 | 34.60 | 40.44 | 28.76 | 6861.79 | 8087.09 | 5636.49 |
| 1971 | 61047 | 86.92 | 120.95 | 52.89 | 12935.97 | 17062.64 | 8809.85 |
| 1972 | 61047 | 74.48 | 103.49 | 45.47 | 15223.60 | 20610.99 | 9836.74 |
| 1973 | 61047 | 105.95 | 130.04 | 81.87 | 22443.49 | 27805.27 | 17081.71 |
| 1974 | 61047 | 67.88 | 81.29 | 54.46 | 14597.32 | 17390.22 | 11803.87 |
| 1975 | 58610 | 72.49 | 93.49 | 51.50 | 18864.05 | 23568.55 | 14159.02 |
| 1976 | 61047 | 108.38 | 166.94 | 49.83 | 24806.34 | 40570.64 | 9042.04 |
| 1977 | 61047 | 60.45 | 70.20 | 50.70 | 13298.98 | 15376.76 | 11221.20 |
| 1978 | 61047 | 128.99 | 170.40 | 87.59 | 30821.10 | 38546.82 | 23094.84 |
| 1979 | 61047 | 47.99 | 62.01 | 33.98 | 9378.35 | 11723.75 | 7032.94 |
| 1980 | 61047 | 79.83 | 94.57 | 65.09 | 16187.27 | 19172.57 | 13202.50 |
| 1981 | 60875 | 149.06 | 194.77 | 103.35 | 28794.42 | 36579.35 | 21010.03 |
| 1982 | 61047 | 76.80 | 99.39 | 54.21 | 15616.59 | 21514.71 | 9717.92 |
| 1983 | 61047 | 68.13 | 85.31 | 50.96 | 15220.33 | 19203.10 | 11237.01 |
| 1984 | 61047 | 44.82 | 59.38 | 30.25 | 10786.79 | 13766.10 | 7808.02 |
| 1985 | 61047 | 45.37 | 54.14 | 36.60 | 12982.84 | 15427.45 | 10538.24 |
| 1986 | 61047 | 59.22 | 75.66 | 42.77 | 12715.22 | 15755.58 | 9674.86 |
| 1987 | 61047 | 39.66 | 47.70 | 31.62 | 9198.47 | 10889.26 | 7507.69 |
| 1988 | 60942 | 35.78 | 44.14 | 27.42 | 7592.18 | 9227.82 | 5956.54 |
| 1989 | 61047 | 30.09 | 35.52 | 24.66 | 5147.03 | 6184.28 | 4109.23 |
| 1990 | 60875 | 29.08 | 35.10 | 23.07 | 5177.64 | 6093.48 | 4261.79 |
| 1991 | 61047 | 32.72 | 40.18 | 25.26 | 5491.50 | 6820.91 | 4162.10 |
| 1992 | 60811 | 30.82 | 37.79 | 23.84 | 6880.87 | 8726.38 | 5035.91 |
| 1993 | 60811 | 38.22 | 45.29 | 31.15 | 7435.77 | 8706.29 | 6165.26 |
| 1994 | 60871 | 36.89 | 48.57 | 25.21 | 5626.22 | 6945.82 | 4306.62 |
| 1995 | 61047 | 28.87 | 33.51 | 24.22 | 5928.64 | 6891.77 | 4965.52 |
| 1996 | 61047 | 32.46 | 40.93 | 23.99 | 5333.98 | 6780.58 | 3887.39 |
| 1997 | 60766 | 49.11 | 70.55 | 27.68 | 7689.07 | 10857.04 | 4521.64 |
| 1998 | 60987 | 31.76 | 35.67 | 27.86 | 6095.98 | 6867.57 | 5323.84 |
| 1999 | 61047 | 35.08 | 41.22 | 28.93 | 6474.80 | 7724.08 | 5225.51 |
| 2000 | 61047 | 45.68 | 51.93 | 39.44 | 8218.45 | 9479.18 | 6957.72 |
| 2001 | 61047 | 54.14 | 62.91 | 45.38 | 9784.42 | 11197.22 | 8371.61 |
| 2002 | 61047 | 59.31 | 67.83 | 50.78 | 11337.30 | 12747.92 | 9926.13 |
| 2003 | 61047 | 18.53 | 20.99 | 16.08 | 2811.98 | 3179.89 | 2444.06 |
| 2004 | 61047 | 26.80 | 33.74 | 19.85 | 4302.72 | 5342.70 | 3262.74 |
| 2005 | 61047 | 23.29 | 27.06 | 19.52 | 3593.05 | 4125.03 | 3061.62 |
| 2006 | 60987 | 24.42 | 28.11 | 20.72 | 3208.35 | 3735.45 | 2681.25 |
| 2007 | 61047 | 59.37 | 71.52 | 47.22 | 7238.43 | 8591.82 | 5885.04 |
| 2008 | 61047 | 62.65 | 73.58 | 51.72 | 9031.69 | 10840.20 | 7223.17 |
| 2009 | 60961 | 54.02 | | | 8173.75 | | |
| 2010 | 61047 | 62.67 | | | 9022.02 | | |

Table C49. Species of consistent red hake predators. Whether abundances were estimated from recent stock assessments (SA) or swept area (SWA) from surveys are noted, as is the resolution of the diet data (annual, 2 yr, or 3 yr).

| Common Name | Species Name | Assessment or Swept Area | Diet Resolution |
|-------------------|---------------------------------|-----------------------------|--------------------|
| Spiny dogfish | <i>Squalus acanthias</i> | SWA | Annual |
| Little skate | <i>Raja ocellata</i> | SWA | Annual |
| Winter skate | <i>Raja erinacea</i> | SWA | 3 yr |
| Thorny skate | <i>Raja radiata</i> | SWA | 2 yr |
| Silver Hake | <i>Merluccius bilinearis</i> | SWA | Annual |
| Atlantic cod | <i>Gadus morhua</i> | SWA | Annual |
| White hake | <i>Urophycis tenuis</i> | SWA | Annual |
| Fourspot flounder | <i>Paralichthys oblongus</i> | SWA | 3 yr |
| Summer Flounder | <i>Paralichthys dentatus</i> | SWA | 3 yr |
| Windowpane | <i>Scophthalmus aquosus</i> | SWA | 3 yr |
| Sea raven | <i>Hemitripterus americanus</i> | SWA | 3 yr |
| Goosefish | <i>Lophius americanus</i> | SWA | 3 yr |

Table C50. Summary of catch, NEFSC fall and spring bottom trawl survey indices, replacement ratios and relative fishing mortality rates for red hake, northern stock. Catch is based on method "Raw C2". Estimates for 2009 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Catch(mt) | NEFSC Survey | | Replacement Ratio | | Relative Fishing Mortality | |
|------|-----------|---------------|-----------------|-------------------|--------|----------------------------|---------------------------|
| | | Fall (kg/tow) | Spring (kg/tow) | Fall | Spring | Relative F Fall (mt/kg) | Relative F Spring (mt/kg) |
| 1963 | 3281.0 | 4.85 | -999 | | | 676.5 | |
| 1964 | 1409.0 | 1.31 | -999 | | | 1075.6 | |
| 1965 | 2773.0 | 1.22 | -999 | | | 2273.0 | |
| 1966 | 5575.0 | 0.92 | -999 | | | 6059.8 | |
| 1967 | 1863.0 | 0.49 | -999 | | | 3802.0 | |
| 1968 | 2627.0 | 0.26 | 1.14 | 0.1479 | | 10103.8 | 2304.4 |
| 1969 | 2021.0 | 0.67 | 0.64 | 0.7976 | | 3016.4 | 3157.8 |
| 1970 | 1032.0 | 0.6 | 0.54 | 0.8427 | | 1720.0 | 1911.1 |
| 1971 | 4805.0 | 1.33 | 0.65 | 2.2619 | | 3612.8 | 7392.3 |
| 1972 | 15026.0 | 2.34 | 1.56 | 3.4925 | | 6421.4 | 9632.1 |
| 1973 | 15288.0 | 1.56 | 4.31 | 1.5000 | 4.7572 | 9800.0 | 3547.1 |
| 1974 | 7223.0 | 0.68 | 2.43 | 0.5231 | 1.5779 | 10622.1 | 2972.4 |
| 1975 | 8701.0 | 1.76 | 4.25 | 1.3518 | 2.2392 | 4943.8 | 2047.3 |
| 1976 | 6337.0 | 1.7 | 3.37 | 1.1082 | 1.2765 | 3727.6 | 1880.4 |
| 1977 | 891.0 | 3.49 | 2.66 | 2.1704 | 0.8354 | 255.3 | 335.0 |
| 1978 | 1223.0 | 3.06 | 2.57 | 1.6649 | 0.7550 | 399.7 | 475.9 |
| 1979 | 1523.0 | 1.82 | 2.04 | 0.8513 | 0.6675 | 836.8 | 746.6 |
| 1980 | 1029.0 | 3.76 | 3.88 | 1.5892 | 1.3029 | 273.7 | 265.2 |
| 1981 | 2570.5 | 2.81 | 6.35 | 1.0159 | 2.1866 | 914.8 | 404.8 |
| 1982 | 2669.9 | 1.67 | 2.13 | 0.5589 | 0.6086 | 1598.7 | 1253.5 |
| 1983 | 2248.1 | 4.11 | 3.7 | 1.5663 | 1.0902 | 547.0 | 607.6 |
| 1984 | 2386.3 | 3.54 | 2.98 | 1.2491 | 0.8232 | 674.1 | 800.8 |
| 1985 | 2262.4 | 4.73 | 3.91 | 1.4884 | 1.0268 | 478.3 | 578.6 |
| 1986 | 2645.9 | 2.84 | 3.26 | 0.8422 | 0.8547 | 931.6 | 811.6 |
| 1987 | 2065.7 | 2.25 | 2.94 | 0.6661 | 0.9199 | 918.1 | 702.6 |
| 1988 | 1758.7 | 2.54 | 2 | 0.7270 | 0.5956 | 692.4 | 879.4 |
| 1989 | 2223.0 | 4.67 | 1.65 | 1.4686 | 0.5467 | 476.0 | 1347.3 |
| 1990 | 1420.6 | 3.32 | 1.33 | 0.9748 | 0.4833 | 427.9 | 1068.2 |
| 1991 | 1561.4 | 2.56 | 1.62 | 0.8195 | 0.7245 | 609.9 | 963.8 |
| 1992 | 1643.9 | 2.29 | 2.5 | 0.7464 | 1.3103 | 717.9 | 657.6 |
| 1993 | 851.6 | 1.99 | 2.82 | 0.6469 | 1.5495 | 428.0 | 302.0 |
| 1994 | 804.2 | 3.69 | 1.59 | 1.2441 | 0.8014 | 217.9 | 505.8 |
| 1995 | 248.9 | 3.28 | 1.97 | 1.1841 | 0.9990 | 75.9 | 126.3 |
| 1996 | 1064.8 | 2.53 | 1.79 | 0.9160 | 0.8524 | 420.9 | 594.8 |
| 1997 | 463.0 | 2.92 | 1.81 | 1.0595 | 0.8482 | 158.6 | 255.8 |
| 1998 | 316.9 | 4.84 | 2.52 | 1.6794 | 1.2625 | 65.5 | 125.8 |
| 1999 | 687.1 | 3.32 | 2.32 | 0.9618 | 1.1983 | 207.0 | 296.2 |
| 2000 | 251.7 | 5.66 | 3.19 | 1.6755 | 1.5322 | 44.5 | 78.9 |
| 2001 | 357.2 | 4.89 | 3.58 | 1.2688 | 1.5391 | 73.0 | 99.8 |
| 2002 | 375.7 | 5.37 | 4.46 | 1.2413 | 1.6617 | 70.0 | 84.2 |
| 2003 | 297.1 | 3.55 | 1 | 0.7371 | 0.3111 | 83.7 | 297.1 |
| 2004 | 160.0 | 1.56 | 1.77 | 0.3423 | 0.6082 | 102.6 | 90.4 |
| 2005 | 153.2 | 1.16 | 1.1 | 0.2758 | 0.3929 | 132.1 | 139.3 |
| 2006 | 276.8 | 2.19 | 0.91 | 0.6624 | 0.3820 | 126.4 | 304.2 |
| 2007 | 196.6 | 2.42 | 2.06 | 0.8749 | 1.1147 | 81.2 | 95.4 |
| 2008 | 111.6 | 1.91 | 3.49 | 0.8778 | 2.5512 | 58.4 | 32.0 |
| 2009 | 180.0 | 12.46 | 1.75 | 6.7424 | 0.9378 | 14.4 | 102.8 |

Table C51. Summary of AIM results for northern red hake for NEFSC fall and spring bottom trawl surveys and catch estimation method “raw C2” for 1963-2009.

| <i>Red Hake, North, RawC2</i> | <i>Fall Survey</i> | <i>Spring Survey</i> |
|--|--------------------|----------------------|
| Critical value (observed correlation between replacement ratio and relative F) | -0.208518 | 0.006928 |
| Probability of observing correlation < Critical Value | 0.9775 | 0.996 |
| Relative F at Replacement (mt/kg) | 607.85 | 7973.31 |
| 90% Confidence Interval for RelF at replacement | (14.29,37701) | (0.066,11261) |

Table C52. Summary of catch, NEFSC fall and spring bottom trawl survey indices , replacement ratios and relative fishing mortality rates for red hake, southern stock. Catch is based on method "Raw C2". Estimates for 2009 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Catch(mt) | NEFSC Survey | | Replacement Ratio | | Relative Fishing Mortality | |
|------|-----------|---------------|-----------------|-------------------|--------|----------------------------|---------------------------|
| | | Fall (kg/tow) | Spring (kg/tow) | Fall | Spring | Relative F Fall (mt/kg) | Relative F Spring (mt/kg) |
| 1963 | 31901.0 | -999 | -999 | | | | |
| 1964 | 43373.0 | -999 | -999 | | | | |
| 1965 | 92990.0 | -999 | -999 | | | | |
| 1966 | 107922.0 | -999 | -999 | | | | |
| 1967 | 58783.0 | 1.69 | -999 | | | 34782.8 | |
| 1968 | 18138.0 | 3.07 | 1.29 | | | 5908.1 | 14060.5 |
| 1969 | 52928.0 | 3.55 | 1.08 | | | 14909.3 | 49007.4 |
| 1970 | 11454.0 | 2.26 | 1.72 | | | 5068.1 | 6659.3 |
| 1971 | 35134.0 | 2.57 | 3.49 | | | 13670.8 | 10067.0 |
| 1972 | 61194.0 | 3.85 | 3.59 | 1.4650 | | 15894.5 | 17045.7 |
| 1973 | 51362.0 | 2.35 | 3.99 | 0.7680 | 1.7860 | 21856.2 | 12872.7 |
| 1974 | 26643.0 | 0.91 | 2.84 | 0.3121 | 1.0238 | 29278.0 | 9381.3 |
| 1975 | 19976.0 | 4.88 | 3.18 | 2.0436 | 1.0173 | 4093.4 | 6281.8 |
| 1976 | 22465.0 | 3.34 | 5.31 | 1.1470 | 1.5535 | 6726.0 | 4230.7 |
| 1977 | 7062.0 | 2.51 | 2.3 | 0.8187 | 0.6081 | 2813.5 | 3070.4 |
| 1978 | 5463.0 | 1.88 | 7.65 | 0.6719 | 2.1708 | 2905.9 | 714.1 |
| 1979 | 7592.0 | 2.38 | 1.51 | 0.8802 | 0.3548 | 3189.9 | 5027.8 |
| 1980 | 4082.0 | 3.13 | 2.38 | 1.0440 | 0.5965 | 1304.2 | 1715.1 |
| 1981 | 5034.8 | 2.32 | 4.61 | 0.8761 | 1.2037 | 2170.2 | 1092.1 |
| 1982 | 6945.9 | 3.1 | 3.34 | 1.2684 | 0.9051 | 2240.6 | 2079.6 |
| 1983 | 5329.8 | 6.04 | 2.21 | 2.3575 | 0.5670 | 882.4 | 2411.7 |
| 1984 | 5181.2 | 1.18 | 1.33 | 0.3477 | 0.4733 | 4390.8 | 3895.6 |
| 1985 | 3871.4 | 1.99 | 1.39 | 0.6309 | 0.5011 | 1945.4 | 2785.2 |
| 1986 | 4082.6 | 0.96 | 1.73 | 0.3281 | 0.6716 | 4252.7 | 2359.9 |
| 1987 | 4256.3 | 0.76 | 0.88 | 0.2864 | 0.4400 | 5600.4 | 4836.7 |
| 1988 | 4332.6 | 0.77 | 1.01 | 0.3522 | 0.6698 | 5626.7 | 4289.7 |
| 1989 | 5936.9 | 1.18 | 0.49 | 1.0424 | 0.3864 | 5031.3 | 12116.1 |
| 1990 | 5545.9 | 1.22 | 0.71 | 1.0777 | 0.6455 | 4545.9 | 7811.2 |
| 1991 | 3536.8 | 1.61 | 0.61 | 1.6462 | 0.6328 | 2196.8 | 5798.0 |
| 1992 | 7588.0 | 0.63 | 0.46 | 0.5686 | 0.6216 | 12044.5 | 16495.8 |
| 1993 | 6231.8 | 0.9 | 0.42 | 0.8318 | 0.6402 | 6924.2 | 14837.7 |
| 1994 | 2702.8 | 0.8 | 0.67 | 0.7220 | 1.2454 | 3378.5 | 4034.1 |
| 1995 | 2756.5 | 0.46 | 0.52 | 0.4457 | 0.9059 | 5992.3 | 5300.9 |
| 1996 | 1079.5 | 0.39 | 0.45 | 0.4432 | 0.8396 | 2768.0 | 2399.0 |
| 1997 | 3421.5 | 0.6 | 1.16 | 0.9434 | 2.3016 | 5702.4 | 2949.5 |
| 1998 | 1894.8 | 0.5 | 0.21 | 0.7937 | 0.3261 | 3789.6 | 9022.8 |
| 1999 | 2411.6 | 0.54 | 0.45 | 0.9818 | 0.7475 | 4466.0 | 5359.2 |
| 2000 | 1667.2 | 0.48 | 0.42 | 0.9639 | 0.7527 | 3473.3 | 3969.5 |
| 2001 | 1606.3 | 0.55 | 0.64 | 1.0956 | 1.1896 | 2920.5 | 2509.8 |
| 2002 | 990.0 | 0.6 | 0.54 | 1.1236 | 0.9375 | 1650.0 | 1833.3 |
| 2003 | 967.9 | 0.55 | 0.21 | 1.0300 | 0.4646 | 1759.8 | 4609.0 |
| 2004 | 1203.9 | 0.4 | 0.15 | 0.7353 | 0.3319 | 3009.7 | 8025.8 |
| 2005 | 1363.5 | 0.63 | 0.38 | 1.2209 | 0.9694 | 2164.3 | 3588.1 |
| 2006 | 1049.2 | 0.82 | 0.38 | 1.5018 | 0.9896 | 1279.5 | 2760.9 |
| 2007 | 2015.0 | 0.55 | 0.86 | 0.9167 | 2.5904 | 3663.6 | 2343.0 |
| 2008 | 1393.5 | 0.73 | 0.47 | 1.2373 | 1.1869 | 1908.9 | 2964.8 |
| 2009 | 1443.5 | 1.02 | 1.34 | 1.6294 | 2.9911 | 1415.2 | 1077.2 |

Table C53. Summary of AIM results for southern red hake for NEFSC fall and spring bottom trawl surveys and catch estimation method “raw C2” for 1963-2009.

| <i>Red Hake, South, RawC2</i> | <i>Fall Survey</i> | <i>Spring Survey</i> |
|--|--------------------|----------------------|
| Critical value (observed correlation between replacement ratio and relative F) | -0.461619 | -0.45839 |
| Probability of observing correlation < Critical Value | 0.4755 | 0.745 |
| Relative F at Replacement (mt/kg) | 2201.7 | 2304.1 |
| 90% Confidence Interval for RelF at replacement | 1027.9,3251.9 | (1087.4, 3128.7) |

Table C54. Summary of catch, NEFSC fall and spring bottom trawl survey indices, replacement ratios and relative fishing mortality rates for red hake, northern stock. Catch is based on method "Raw C3", 1980-2009. Estimates for 2009 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Catch(mt) | NEFSC Survey | | Replacement Ratio | | Relative Fishing Mortality | |
|------|-----------|---------------|-----------------|-------------------|--------|----------------------------|---------------------------|
| | | Fall (kg/tow) | Spring (kg/tow) | Fall | Spring | Relative F Fall (mt/kg) | Relative F Spring (mt/kg) |
| 1963 | | | | | | | |
| 1964 | | | | | | | |
| 1965 | | | | | | | |
| 1966 | | | | | | | |
| 1967 | | | | | | | |
| 1968 | | | | | | | |
| 1969 | | | | | | | |
| 1970 | | | | | | | |
| 1971 | | | | | | | |
| 1972 | | | | | | | |
| 1973 | | | | | | | |
| 1974 | | | | | | | |
| 1975 | | | | | | | |
| 1976 | | | | | | | |
| 1977 | | | | | | | |
| 1978 | | | | | | | |
| 1979 | | | | | | | |
| 1980 | 1032.8 | 3.76 | 3.88 | | | 274.7 | 266.2 |
| 1981 | 2601.4 | 2.81 | 6.35 | | | 925.8 | 409.7 |
| 1982 | 2672.8 | 1.67 | 2.13 | | | 1600.5 | 1254.8 |
| 1983 | 2248.2 | 4.11 | 3.7 | | | 547.0 | 607.6 |
| 1984 | 2387.7 | 3.54 | 2.98 | | | 674.5 | 801.2 |
| 1985 | 2262.4 | 4.73 | 3.91 | 1.4884 | 1.0268 | 478.3 | 578.6 |
| 1986 | 2646.4 | 2.84 | 3.26 | 0.8422 | 0.8547 | 931.8 | 811.8 |
| 1987 | 2065.9 | 2.25 | 2.94 | 0.6661 | 0.9199 | 918.2 | 702.7 |
| 1988 | 1762.8 | 2.54 | 2 | 0.7270 | 0.5956 | 694.0 | 881.4 |
| 1989 | 2223.5 | 4.67 | 1.65 | 1.4686 | 0.5467 | 476.1 | 1347.6 |
| 1990 | 1424.8 | 3.32 | 1.33 | 0.9748 | 0.4833 | 429.1 | 1071.2 |
| 1991 | 1563.0 | 2.56 | 1.62 | 0.8195 | 0.7245 | 610.6 | 964.8 |
| 1992 | 1644.6 | 2.29 | 2.5 | 0.7464 | 1.3103 | 718.2 | 657.8 |
| 1993 | 852.6 | 1.99 | 2.82 | 0.6469 | 1.5495 | 428.4 | 302.3 |
| 1994 | 805.9 | 3.69 | 1.59 | 1.2441 | 0.8014 | 218.4 | 506.9 |
| 1995 | 249.9 | 3.28 | 1.97 | 1.1841 | 0.9990 | 76.2 | 126.9 |
| 1996 | 1070.1 | 2.53 | 1.79 | 0.9160 | 0.8524 | 423.0 | 597.8 |
| 1997 | 463.8 | 2.92 | 1.81 | 1.0595 | 0.8482 | 158.8 | 256.2 |
| 1998 | 317.0 | 4.84 | 2.52 | 1.6794 | 1.2625 | 65.5 | 125.8 |
| 1999 | 687.2 | 3.32 | 2.32 | 0.9618 | 1.1983 | 207.0 | 296.2 |
| 2000 | 251.8 | 5.66 | 3.19 | 1.6755 | 1.5322 | 44.5 | 78.9 |
| 2001 | 357.7 | 4.89 | 3.58 | 1.2688 | 1.5391 | 73.1 | 99.9 |
| 2002 | 376.0 | 5.37 | 4.46 | 1.2413 | 1.6617 | 70.0 | 84.3 |
| 2003 | 297.2 | 3.55 | 1 | 0.7371 | 0.3111 | 83.7 | 297.2 |
| 2004 | 160.1 | 1.56 | 1.77 | 0.3423 | 0.6082 | 102.6 | 90.4 |
| 2005 | 153.3 | 1.16 | 1.1 | 0.2758 | 0.3929 | 132.1 | 139.3 |
| 2006 | 276.9 | 2.19 | 0.91 | 0.6624 | 0.3820 | 126.4 | 304.3 |
| 2007 | 196.8 | 2.42 | 2.06 | 0.8749 | 1.1147 | 81.3 | 95.5 |
| 2008 | 111.8 | 1.91 | 3.49 | 0.8778 | 2.5512 | 58.5 | 32.0 |
| 2009 | 180.4 | 12.46 | 1.75 | 6.7424 | 0.9378 | 14.5 | 103.1 |

Table C55. Summary of AIM results for northern red hake for NEFSC fall and spring bottom trawl surveys and catch estimation method “Catch 3” for 1980-2009.

| <i>Red Hake, North, Catch3 short</i> | <i>Fall Survey</i> | <i>Spring Survey</i> |
|--|--------------------|----------------------|
| Critical value (observed correlation between replacement ratio and relative F) | -0.424471 | -0.474634 |
| Probability of observing correlation < Critical Value | 0.379 | 0.2595 |
| Relative F at Replacement (mt/kg) | 162 | 163.1 |
| 90% Confidence Interval for RelF at replacement | (51.9, 407.0) | (42.9,260.3) |

Table C56. Summary of catch, NEFSC fall and spring bottom trawl survey indices , replacement ratios and relative fishing mortality rates for red hake, southern stock. Catch is based on method "Raw C3", 1980-2009. Estimates for 2009 were converted to Albatross units using the calibration factors at length in Table C34.

| Year | Catch(mt) | NEFSC Survey | | Replacement Ratio | | Relative Fishing Mortality | |
|------|-----------|---------------|-----------------|-------------------|--------|----------------------------|---------------------------|
| | | Fall (kg/tow) | Spring (kg/tow) | Fall | Spring | Relative F Fall (mt/kg) | Relative F Spring (mt/kg) |
| 1963 | | | | | | | |
| 1964 | | | | | | | |
| 1965 | | | | | | | |
| 1966 | | | | | | | |
| 1967 | | | | | | | |
| 1968 | | | | | | | |
| 1969 | | | | | | | |
| 1970 | | | | | | | |
| 1971 | | | | | | | |
| 1972 | | | | | | | |
| 1973 | | | | | | | |
| 1974 | | | | | | | |
| 1975 | | | | | | | |
| 1976 | | | | | | | |
| 1977 | | | | | | | |
| 1978 | | | | | | | |
| 1979 | | | | | | | |
| 1980 | 4226.0 | 3.13 | 2.38 | | | 1350.2 | 1775.6 |
| 1981 | 5210.7 | 2.32 | 4.61 | | | 2246.0 | 1130.3 |
| 1982 | 6975.3 | 3.1 | 3.34 | | | 2250.1 | 2088.4 |
| 1983 | 5464.8 | 6.04 | 2.21 | | | 904.8 | 2472.7 |
| 1984 | 5729.5 | 1.18 | 1.33 | | | 4855.5 | 4307.9 |
| 1985 | 3900.8 | 1.99 | 1.39 | 0.6309 | 0.5011 | 1960.2 | 2806.3 |
| 1986 | 4288.1 | 0.96 | 1.73 | 0.3281 | 0.6716 | 4466.7 | 2478.6 |
| 1987 | 4728.4 | 0.76 | 0.88 | 0.2864 | 0.4400 | 6221.6 | 5373.2 |
| 1988 | 4583.5 | 0.77 | 1.01 | 0.3522 | 0.6698 | 5952.6 | 4538.1 |
| 1989 | 6372.4 | 1.18 | 0.49 | 1.0424 | 0.3864 | 5400.3 | 13004.9 |
| 1990 | 6059.9 | 1.22 | 0.71 | 1.0777 | 0.6455 | 4967.2 | 8535.1 |
| 1991 | 3821.5 | 1.61 | 0.61 | 1.6462 | 0.6328 | 2373.6 | 6264.8 |
| 1992 | 7782.3 | 0.63 | 0.46 | 0.5686 | 0.6216 | 12352.9 | 16918.1 |
| 1993 | 6321.2 | 0.9 | 0.42 | 0.8318 | 0.6402 | 7023.5 | 15050.4 |
| 1994 | 2771.7 | 0.8 | 0.67 | 0.7220 | 1.2454 | 3464.7 | 4136.9 |
| 1995 | 2801.4 | 0.46 | 0.52 | 0.4457 | 0.9059 | 6090.0 | 5387.3 |
| 1996 | 1098.8 | 0.39 | 0.45 | 0.4432 | 0.8396 | 2817.4 | 2441.8 |
| 1997 | 3594.9 | 0.6 | 1.16 | 0.9434 | 2.3016 | 5991.5 | 3099.0 |
| 1998 | 1947.6 | 0.5 | 0.21 | 0.7937 | 0.3261 | 3895.1 | 9274.0 |
| 1999 | 2464.6 | 0.54 | 0.45 | 0.9818 | 0.7475 | 4564.0 | 5476.8 |
| 2000 | 1711.6 | 0.48 | 0.42 | 0.9639 | 0.7527 | 3565.8 | 4075.1 |
| 2001 | 1630.2 | 0.55 | 0.64 | 1.0956 | 1.1896 | 2964.1 | 2547.2 |
| 2002 | 1000.3 | 0.6 | 0.54 | 1.1236 | 0.9375 | 1667.2 | 1852.4 |
| 2003 | 985.7 | 0.55 | 0.21 | 1.0300 | 0.4646 | 1792.1 | 4693.6 |
| 2004 | 1214.4 | 0.4 | 0.15 | 0.7353 | 0.3319 | 3035.9 | 8095.7 |
| 2005 | 1418.5 | 0.63 | 0.38 | 1.2209 | 0.9694 | 2251.6 | 3732.9 |
| 2006 | 1102.7 | 0.82 | 0.38 | 1.5018 | 0.9896 | 1344.7 | 2901.7 |
| 2007 | 2034.6 | 0.55 | 0.86 | 0.9167 | 2.5904 | 3699.3 | 2365.8 |
| 2008 | 1467.1 | 0.73 | 0.47 | 1.2373 | 1.1869 | 2009.8 | 3121.6 |
| 2009 | 1543.4 | 1.02 | 1.34 | 1.6294 | 2.9911 | 1513.1 | 1151.8 |

Table C57. Summary of AIM results for southern red hake for NEFSC fall and spring bottom trawl surveys and catch estimation method “Catch 3” for 1980-2009.

| <i>Red Hake, South, Catch3 short</i> | <i>Fall Survey</i> | <i>Spring Survey</i> |
|--|--------------------|----------------------|
| Critical value (observed correlation between replacement ratio and relative F) | -0.565693 | -0.665111 |
| Probability of observing correlation < Critical Value | 0.7015 | 0.6485 |
| Relative F at Replacement (mt/kg) | 2306.9 | 3038.2 |
| 90% Confidence Interval for RelF at replacement | (1313.8, 2982.0) | (2134.8, 3730.9) |