**Stock: North East Atlantic mackerel combined**

**Assessment Quality Control Diagram 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Average F(4-8,u) | | | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | | | |
|  | | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | |
| 1990 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1993 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1994 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1995 | | 0.195 | 0.154 | 0.159 | 0.175 | 0.213 | 0.283 | 0.292 |  |  |  |  |  |  |  |  | |
| 1996 | | 0.217 | 0.168 | 0.172 | 0.185 | 0.218 | 0.278 | 0.276 | 0.270 |  |  |  |  |  |  |  | |
| 1997 | | 0.215 | 0.172 | 0.178 | 0.192 | 0.223 | 0.286 | 0.281 | 0.270 | 0.208 |  |  |  |  |  |  | |
| 1998 | | # | # | # | # | # | # | # | # | # | 0.22 |  |  |  |  |  | |
| 1999 | | 0.209 | 0.165 | 0.168 | 0.208 | 0.249 | 0.308 | 0.305 | 0.298 | 0.219 | 0.198 | 0.203 |  |  |  |  | |
| 2000 | | 0.209 | 0.165 | 0.167 | 0.207 | 0.246 | 0.302 | 0.298 | 0.285 | 0.209 | 0.190 | 0.197 | 0.169 |  |  |  | |
| 2001 | | 0.210 | 0.165 | 0.168 | 0.208 | 0.249 | 0.307 | 0.304 | 0.292 | 0.215 | 0.196 | 0.203 | 0.176 | 0.172 |  |  | |
| 2002 | | 0.213 | 0.161 | 0.164 | 0.204 | 0.241 | 0.301 | 0.299 | 0.289 | 0.216 | 0.201 | 0.215 | 0.194 | 0.200 | 0.204 |  | |
| 2003 | | 0.213 | 0.162 | 0.165 | 0.205 | 0.243 | 0.304 | 0.304 | 0.294 | 0.221 | 0.206 | 0.221 | 0.198 | 0.203 | 0.208 | 0.204 | |

**Remarks: F values in 1998 (#) the same as in 1997, because assessment of WG97 was maintained.**

**Stock: North East Atlantic mackerel combined**

**Assessment Quality Control Diagram 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recruitment (age 0) Unit: millions | | | | | | | | | | | | | | | |
| Date of assessment | Year class | | | | | | | | | | | | | | |
|  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | |
| 1990 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1993 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1994 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1995 | 4903 | 2699 | 2793 | 3077 | 3394 | 2083 |  |  |  |  |  |  |  |  |  | |
| 1996 | 5127 | 3000 | 3278 | 3764 | 4626 | 2589 | 1592 |  |  |  |  |  |  |  |  | |
| 1997 | 5086 | 3027 | 3473 | 4007 | 5040 | 3021 | 5185 | 6757 |  |  |  |  |  |  |  | |
| 1998 | # | # | # | # | # | # | # | # |  |  |  |  |  |  |  | |
| 1999 | 4620 | 3324 | 3892 | 4852 | 6422 | 4423 | 5725 | 7819 | 5966 | 16316 |  |  |  |  |  | |
| 2000 | 4633 | 3421 | 4030 | 5052 | 6670 | 4861 | 5687 | 6765 | 5206 | 5124 | 4252 |  |  |  |  | |
| 2001 | 4539 | 3438 | 3929 | 4985 | 6387 | 4946 | 5550 | 6591 | 5283 | 4788 | 7007 | 4281 |  |  |  | |
| 2002 | 4553 | 3447 | 3940 | 4859 | 6084 | 4806 | 5140 | 5697 | 4353 | 3840 | 4680 | 2106 | 4084 |  |  | |
| 2003 | 4561 | 3458 | 3924 | 4828 | 5916 | 4814 | 4987 | 5588 | 4385 | 4132 | 5184 | 2026 | 11081 | 4115 |  | |

Average recruitment.

Strong recruitment.

1991 and 1992 year class abundance based on recruitment surveys as (1-2)year olds and (0-1), respectively. Numbers at age 0 have been calculated by using F and M in 1992 (for the 1992 yearclass) and in 1991 and 1992 (for the 1991 year class).

Geometric mean.

**Remarks:** Recruitment in 1998 (#) the same as in 1997, because assessment of WG97 was maintained.**Stock: North East Atlantic mackerel combined**

**Assessment Quality Control Diagram 3**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Spawning stock biomass ('000 t) | | | | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | | | | |
|  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | |
| 1990 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1993 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1994 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1995 | 3145 | 2983 | 3325 | 3235 | 2786 | 2357 |  |  |  |  |  |  |  |  |  |  |  | |
| 1996 | 2906 | 2801 | 3195 | 3206 | 2879 | 2549 | 2538 |  |  |  |  |  |  |  |  |  |  | |
| 1997 | 2883 | 2769 | 3145 | 3158 | 2853 | 2556 | 2598 | 2456 |  |  |  |  |  |  |  |  |  | |
| 1998 | # | # | # | # | # | # | # | # | 2530 |  |  |  |  |  |  |  |  | |
| 1999 | 2727 | 2582 | 2907 | 2933 | 2747 | 2579 | 2797 | 2854 | 3095 | 3299 |  |  |  |  |  |  |  | |
| 2000 | 2735 | 2594 | 2924 | 2965 | 2803 | 2659 | 2918 | 3014 | 3262 | 3399 | 3831 |  |  |  |  |  |  | |
| 2001 | 2724 | 2581 | 2903 | 2938 | 2766 | 2612 | 2846 | 2933 | 3174 | 3300 | 3722 | 3815 |  |  |  |  |  | |
| 2002 | 2694 | 2542 | 2851 | 2882 | 2717 | 2537 | 2758 | 2769 | 2902 | 2938 | 3215 | 3157 | 3424 |  |  |  |  | |
| 2003 | 2684 | 2533 | 2842 | 2873 | 2707 | 2522 | 2729 | 2729 | 2851 | 2875 | 3147 | 3117 | 3428 | 3147 |  |  |  | |

Forecast.

**Remarks:** SSB values in 1998 (#) the same as in 1997, because assessment of WG97 was maintained.