**Stock: North Sea Herring (Fishing Areas IIIa, IV and VIId)**

**Assessment Quality Control Diagram 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Average F(2-6,u) | | | | | | | | | | | | | | | | | | | | |
| Date of assessment | | Year | | | | | | | | | | | | | | | | | | |
|  | 1989 | | 1990 | | 1991 | 1992 | | 1993 | 1994 | 1995 | | 1996 | 1997 | 1998 | | 1999 | 2000 | 2001 | | 2002 |
| 1989 | |  | |  |  | |  | |  | |  | |  | |  | |  | |  | |
| 1990 | 0.47 | |  | |  |  | |  |  |  | |  |  |  | |  |  |  | |  |
| 1991 | 0.44 | | 0.33 | |  |  | |  |  |  | |  |  |  | |  |  |  | |  |
| 1992 | 0.52 | | 0.41 | | 0.39 |  | |  |  |  | |  |  |  | |  |  |  | |  |
| 1993 | 0.48 | | 0.37 | | 0.37 | 0.39 | |  |  |  | |  |  |  | |  |  |  | |  |
| 1994 | 0.50 | | 0.39 | | 0.42 | 0.45 | | 0.44 |  |  | |  |  |  | |  |  |  | |  |
| 1995 | 0.52 | | 0.42 | | 0.47 | 0.56 | | 0.67 | 0.52 |  | |  |  |  | |  |  |  | |  |
| 1996 | 0.53 | | 0.43 | | 0.49 | 0.61 | | 0.78 | 0.69 | 0.80 | |  |  |  | |  |  |  | |  |
| 1997 | 0.53 | | 0.43 | | 0.49 | 0.63 | | 0.77 | 0.68 | 0.82 | | 0.35 |  |  | |  |  |  | |  |
| 1998 | 0.53 | | 0.44 | | 0.49 | 0.64 | | 0.77 | 0.69 | 0.80 | | 0.39 | 0.26 |  | |  |  |  | |  |
| 1999 | 0.53 | | 0.43 | | 0.48 | 0.64 | | 0.80 | 0.72 | 0.85 | | 0.36 | 0.31 | 0.35 | |  |  |  | |  |
| 2000 | 0.53 | | 0.43 | | 0.48 | 0.64 | | 0.81 | 0.73 | 0.89 | | 0.39 | 0.40 | 0.46 | | 0.38 |  |  | |  |
| 2001 | 0.55 | | 0.45 | | 0.50 | 0.61 | | 0.75 | 0.77 | 0.84 | | 0.47 | 0.43 | 0.53 | | 0.46 | 0.42 |  | |  |
| 2002 | 0.54 | | 0.44 | | 0.50 | 0.60 | | 0.74 | 0.76 | 0.82 | | 0.43 | 0.42 | 0.42 | | 0.36 | 0.32 | 0.24 | |  |
| 2003 | 0.54 | | 0.44 | | 0.49 | 0.59 | | 0.70 | 0.69 | 0.76 | | 0.40 | 0.42 | 0.45 | | 0.40 | 0.39 | 0.28 | | 0.24 |

**Remarks:** 1991-1998 assessments include catches of autumn-spawning herring in Division IIIa.

**Stock: North Sea Herring (Fishing Areas IIIa, IV and VIId)**

**Assessment Quality Control Diagram 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recruitment (age 1) Winter rings Unit: billions | | | | | | | | | | | | | | | | |
| Date of assessment | | Year class | | | | | | | | | | | | | | |
|  | 1988 | | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | |
| 1989 | 8.7 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1990 | 10.7 | | 2.7 |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 | 13.9 | | 16.1 | 6.7 |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 | 17.7 | | 15.6 | 15.0 | 29.2 |  |  |  |  |  |  |  |  |  |  |  | |
| 1993 | 15.4 | | 14.9 | 10.5 | 29.4 | 25.4 |  |  |  |  |  |  |  |  |  |  | |
| 1994 | 13.7 | | 14.4 | 13.6 | 19.7 | 16.9 | 10.3 |  |  |  |  |  |  |  |  |  | |
| 1995 | 12.4 | | 12.6 | 12.1 | 20.9 | 17.0 | 11.7 |  |  |  |  |  |  |  |  |  | |
| 1996 | 12.3 | | 12.3 | 11.4 | 18.5 | 14.0 | 8.9 | 13.3 |  |  |  |  |  |  |  |  | |
| 1997 | 12.7 | | 12.0 | 11.7 | 19.0 | 16.2 | 10.1 | 13.6 | 22.1 |  |  |  |  |  |  |  | |
| 1998 | 13.3 | | 12.1 | 11.8 | 18.7 | 16.2 | 10.6 | 14.4 | 21.0 | 15.3 |  |  |  |  |  |  | |
| 1999 | 13.3 | | 12.2 | 11.6 | 18.7 | 15.9 | 10.7 | 13.2 | 17.0 | 18.4 | 7.5 |  |  |  |  |  | |
| 2000 | 13.4 | | 12.1 | 11.3 | 18.5 | 15.5 | 10.5 | 12.1 | 16.3 | 14.0 | 6.5 | 36.6 |  |  |  |  | |
| 2001 | 12.49 | | 12.33 | 11.02 | 17.45 | 13.24 | 9.88 | 10.9 | 17.91 | 12.18 | 6.76 | 30.24 | 22.26 |  |  |  | |
| 2002 | 12.49 | | 12.34 | 11.06 | 17.53 | 13.72 | 10.67 | 11.56 | 19.24 | 11.24 | 9.36 | 27.07 | 17.30 | 30.10 |  |  | |
| 2003 | 12.66 | | 12.47 | 11.05 | 17.36 | 13.13 | 9.91 | 11.13 | 17.25 | 9.3 | 9.11 | 24.9 | 15.02 | 30.42 | 21.91 |  | |

Figures include North Sea recruits present in Division IIIa, and are not comparable with estimates from earlier assessments.

Survey estimate.

**Remarks:** 1991-1998 assessments include catches of autumn-spawning herring in Division IIIa.

**Stock: North Sea Herring (Fishing Areas IIIa, IV and VIId)**

**Assessment Quality Control Diagram 3**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Spawning stock biomass (‘000 tonnes) | | | | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | | | | |
| 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| 1989 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 | 1256 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | 1549 | 1411 | 1320 | 1346 | 1238 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 1340 | 1247 | 1277 | 1320 | 1287 | N/A |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 1456 | 1354 | 1307 | 1184 | 1055 | 965 | N/A |  |  |  |  |  |  |  |  |  |  |
| 1994 | 1391 | 1260 | 1149 | 986 | 730 | 974 | 981 | N/A |  |  |  |  |  |  |  |  |  |
| 1995 | 1286 | 1138 | 993 | 778 | 484 | 790 | 718 | 690 | n/a |  |  |  |  |  |  |  |  |
| 1996 | 1240 | 1135 | 939 | 699 | 458 | 517 | 496 | 410 | 434 | n/a |  |  |  |  |  |  |  |
| 1997 | 1265 | 1154 | 950 | 692 | 465 | 547 | 551 | 539 |  |  |  |  |  |  |  |  |  |
| 1998 | 1266 | 1151 | 957 | 702 | 471 | 543 | 550 | 519 | 746 |  |  |  |  |  |  |  |  |
| 1999 | 1277 | 1169 | 980 | 716 | 462 | 513 | 501 | 488 | 657 | 878 |  |  |  |  |  |  |  |
| 2000 | 1249 | 1149 | 972 | 714 | 458 | 502 | 474 | 448 | 568 | 702 | 906 |  |  |  |  |  |  |
| 2001 | 1225 | 1116 | 915 | 684 | 445 | 473 | 467 | 434 | 529 | 702 | 815 | 772 |  |  |  |  |  |
| 2002 | 1248 | 1174 | 961 | 681 | 449 | 503 | 480 | 484 | 584 | 782 | 935 | 943 | 1428 |  |  |  |  |
| 2003 | 1248 | 1181 | 976 | 700 | 470 | 521 | 482 | 463 | 557 | 736 | 850 | 829 | 1271 | 1588 | 2231 |  |  |

Forecast. (Fsq).

**Remarks:** 1991-1998 assessments include catches of autumn-spawning herring in Division IIIa.